RESOURCES, UNIT COSTS AND THE CURRICULUM: AN ANALYSIS OF CHANGING PRIORITIES IN LOCAL EDUCATION AUTHORITY SECONDARY SCHOOLS IN ENGLAND

by

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ABSTRACT

There are major variations in education provision between areas yet their analysis remains undeveloped. This thesis examines variations in resources and the curriculum in English education in the early 1980s. It argues that these variations are one of the major outcomes of the relationships between actors in the education service established in the post-war era. Despite their importance, the patterns of provision have been subject to little previous systematic empirical assessment.

The first part of the thesis develops a framework for analysis of the relationships between actors in education: central government, local authority and school. This framework provides the structure for the empirical analyses which follow. A hierarchical research design is adopted which facilitates the examination of the effect of each level on the distribution of resources and their translation into curricula. Four contrasted case studies were selected for analysis. The results of original surveys are drawn upon to examine the management context.

The second part of the thesis presents an original analysis of the impact of changes to the system of central grants to local authorities. National data sources are used to examine in detail the impact of these changes on secondary education expenditure. The focus then shifts to examine the distribution of resources within the four case study areas and their relationship to the socio-economic characteristics of school catchments and 'technical' factors such as size.

Having established the patterns of resource distribution, the thesis moves to an original examination of the translation of these resources into curricula. The curriculum profiles of the case study authorities are compared, and, for two areas, changes over time are analysed. In the final section, the thesis examines variations in the curriculum between schools, examining their relationship to school background factors and resource levels.

CONTENTS

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GLOSSARY OF ABBREVIATIONS

AFE	Advanced Further Education
CCLGF	Consultative Council on Local Government Finance
CDT	Craft, Design and Technology
CEO	Chief Education Officer
CPVE	Certificate of Pre-Vocational Education
DES	Department of Education and Science
DoE	Department of the Environment
EPSC	Education for Personal and Social Competence
ESG	Education Support Grant
ESGE	Expenditure Steering Group/Education
FSM	Free School Meals
GCSE	General Certificate of Secondary Education
GRE	Grant-Related Expenditure
GREA	Grant-Related Expenditure Assessment
HMI	Her Majesty's Inspectorate
IND	Index of Net Disadvantage
LAA	Local Authority Associations
LEA	Local Education Authority
MSC	Manpower Services Commission
NAFE	Non-Advanced Further Education
NOR	Numbers on Roll
NUT	National Union of Teachers
OSC	Occupational Skills and Crafts
PES	Public Expenditure Survey
PESC	Public Expenditure Survey Committee
PSD	Personal and Social Development
PTR	Pupil-Teacher Ratio
RSG	Rate Support Grant
SEO	Society of Education Officers
TA	Training Agency
TPW	Teacher Periods per Week
TVEI	Technical and Vocational Education Initiative
WRNAFE	Work-Related Non-Advanced Further Education

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CHAPTER 1: INTRODUCTION

This thesis presents, for the first time, a comparison of the structure of the curriculum in four different areas, and for two of these areas show how it has changed over time. It also examines the relationship of variations in the curriculum to both resources and the environment of individual schools.

Resources and the curriculum are key factors in the educational opportunities available to children. Both are subject to major variation between areas. Yet the analysis of the nature of this variation remains undeveloped. This thesis examines variations in resources and the curriculum in English education in the early 1980s. This variation has been integral to the management of change in resources and the curriculum in schools and local education authorities (LEAs) during this period. Despite their centrality to the structuring of educational opportunities, variations in resources, costs and the curriculum have been subject to little previous systematic empirical assessment. It is to filling this gap that this thesis is addressed.

The thesis argues that variations in provision can only be understood if set within the context of a framework which takes into account the relationships between actors in the service. The nature of those relationships are specific to particular periods. Variation is one of the major policy outcomes of relations between actors in the education service established in the post-war period. The structure of inter-relationships between actors brought about considerable local autonomy in the management of education resources and the curriculum which led to considerable local variation, both between LEAs and between schools. These relationships are now undergoing fundamental change in the wake of the 1988 Education Reform Act. This thesis thus examines a benchmark period for English education.

In order to examine these variations, the thesis uses as its analytical framework a model of central-local government

relations developed by RAW Rhodes. This framework characterises education in terms of a 'policy community'. By characterising the service in this way, it is possible to account for relationships both between actors within education, and between education and other parts of local and central government.

Resources and the curriculum are the outcome of negotiations between two overlapping but distinct sets of actors. The relationships involved in the provision of resources - between central and local government and between local authorities and schools - are different to those involved in the determination of the curriculum. Whilst what can be provided in the curriculum necessarily depends on the resources available, processes in the two areas are nonetheless distinct. This thesis presents the first analysis of the outcomes of these relationships in terms of an examination of patterns of resourcing and curriculum structures.

An important consequence of the reliance on different groups of actors is that the time trajectories of curriculum and resource change are very different. In the post-war era, education enjoyed a period of growth. In the early 1980s relationships between actors changed dramatically. The advent of the first Thatcher government brought major changes to the determination and distribution of resources for education, with tight central control placed upon public expenditure. By contrast, there was no such immediate effect on the curriculum. The curriculum has enjoyed a much more stable set of relationships between actors and has developed over a much longer period of time; it has been much less amenable to short-term changes. The predominant feature has been the devolution of responsibility to schools and teachers, within the constaint of accepted norms largely determined by the examination system. Significant changes in the relationships between actors has only come about latterly with the 1988 Education Reform Act. The debates surrounding the curriculum of the 1980s built upon a number of crucial developments which had come about in the 1970s. A crucial part of these changes was the broadening of the range of actors

involved in the determination of the curriculum beyond those traditionally involved in the education policy community. The most important of these was the trend towards moving responsibility for the vocational curriculum into the ambit of the training policy network. The 1980s also saw falling school enrolments and financial constraint bring about new interactions between resources and the curriculum.

The thesis begins by developing the framework within which to analyse resources and the curriculum. Chapter 2 draws on Rhodes' analysis of central-local relations to demonstrate the importance of the concept of the policy community as a tool for understanding the relationships between actors in education. The framework is used to examine relationships between the education community and other parts of government, where its main role has been to affect resources, and to examine relations within the community where it has affected the determination of the curriculum. Local variation has been a key outcome of relationships in the service. Existing work concerned with this variation is reviewed in Chapter 3. Together, these chapters demonstrate the need to adopt a hierarchical reseach design which conceptualises resources as flowing 'downwards' through the three levels involved in education - central government, local authority and school. The thesis examines the effect of each level on the distribution of resources and their translation into the curriculum. It moves from the analysis of the national distribution of resources amongst local authorities through block grant to a detailed study of resources, unit costs and the curriculum in a set of case study areas. Chapter 4 outlines this strategy and the methodology adopted in the main body of the thesis. The case studies are described and set within the national context.

Chapter 5 draws on the results of original surveys in the four case studies to set the management context for the four key empirical chapters which follow. The survey examines the effects of changing patterns of resourcing on the physical fabric of schools and on the resources available to the

curriculum. Methods of resource allocation in the schools are also explored.

Having set the context in this way, Chapter 6 presents an analysis of the impact of changes to the way central government allocates grant to local authorities between the late 1970s and the mid-1980s. An original analysis of national data is presented which examines in detail the effects of these changes on education expenditure in different types of authority and in the four case studies. It shows how local actors have managed exogenous changes in very different local social, economic and political contexts.

The focus is then shifted to examine how resources are distributed within the four case study areas (Chapter 7). The most important educational resource - teaching staff - is related to three key factors: an indicator of the socio-economic characteristics of school catchments; school size; and post-16 provision. Local factors particular to the individual case studies are also examined. The chapter also presents an original analysis of variations in unit costs between schools in one of the case study areas, relating the variations to school context, post-16 provision, size and other local factors.

Chapters 8 and 9 present, for the first time, an examination of the curricula of schools in different LEAs. Chapter 8 assesses differences in different subject areas of the curriculum between the LEAs. This is the first empirical assessment of the magnitude of variation in the curriculum at this level of analysis. It identifies those areas of the curriculum where difference is most significant, and assesses the role of the LEA in shaping the curricula of its schools. For two areas, changes in the curriculum during the early 1980s are also examined. Chapter 9 moves the focus to the school level to examine the impact of the autonomy enjoyed by schools in the development of the curriculum. Drawing on the analyses of Chapter 7, variations in the curriculum are related to school context and resource factors to determine the extent to which local autonomy

has meant adaptation to local need and available resources or less structured variation. It also assesses the role of the curriculum in different contexts.

CHAPTER 2: THE CONTEXT OF CHANGE

2.1 Context

The broad context for the organisation of education which this thesis examines was laid down in the immediate post-war era. Two broad developments can be traced which are closely inter-related (Kogan, 1978).

(i) in resource terms, from 1945 to the mid 1970s education enjoyed a period of expansion. Demand for educational services rose and educational expenditure increased. Since the mid-70's, however, contraction has occurred, both in terms of a decline in the number of pupils in schools (though the number of primary school pupils has now begun its upturn) and in terms of a reduction in public expenditure, which is not unrelated but (for reasons that will be explained shortly) nevertheless distinct.

(ii) the establishment of free compulsory schooling until the age of 15 in 1944 did not reduce, in the long term, the strength of debate over the means and ends of education. On the contrary, the last 40 years have been marked by a change from optimism to pessimism over the ability of education to satisfy the diverse, and often diametrically opposed, needs of society and the individual. That this change has coincided with the switch from expansion to contraction in resource terms is not wholly accidental.

This context of change is examined in this chapter in order to introduce the key themes which motivate the thesis, and in order to review the main body of previous contributions on resources and the curriculum. Although lengthy, this chapter is seen as providing the essential framework necessary for the subsequent analysis.

From expansion to contraction

Up to about 1975 education enjoyed a period of almost continual expansion. This owes much to the importance assigned to education in the gamut of social services established by the post-war Labour government. Education achieved a prestigious status far above that of its rivals in the 'competition' for government finance, being seen as a unique key to both individual advancement and social equality. For almost three decades education enjoyed a rising demand for its services. Demographic trends meant that the number of pupils in the maintained sector expanded steadily and substantially from the late 1940s to the late 1970s. Increasing numbers of children stayed on at school beyond the compulsory stage so that over the same period the number of 17 year olds at school increased from 25,000 to 110,000, i.e. from 0.46% of the total school population to 1.29% . Apart from the aggregate level of expenditure which rose to meet these rising demands, per pupil expenditure also increased, financing improved levels of provision. It was as a result of this, for example, that pupil/teacher ratios fell from 27.3 to 21.5 between 1948 and 1972 and broader, more varied curricula came to be offered by schools. Not surprisingly, education expanded more rapidly than the public economy as a whole, increasing its share of the Gross National Product over this period from 2.8% to 6.6% (Dennison, 1981).

In the 1960s few people could have predicted the slump into which education was to be unceremoniously plunged in the 1970s. The change was indeed dramatic. In 1972, the White Paper *Education - a framework for expansion* was confidently predicting a continuation of the expansion of the previous decade into the 1980s. Yet within eight years the planned annual increase in real terms of 4% had been converted into a contraction of almost the same order. The reasons for the U-turn were mainly economic. The oil price rises of 1973 had dragged the Labour administration into a major financial crisis from which it sought escape through the assistance of the International

Monetary Fund. The conditions attached to the IMF's loan compelled the introduction of a sustained attempt on the part of central government to restrict public spending. By 1976 expansion had been brought to a halt. With the advent in 1979 of a Conservative Government committed to reductions in public spending as a central component of its policies, the shift to contraction became complete. It is with the education service since the late 1970s that this thesis is concerned.

These are not, however, the sole reasons for contraction. The realisation that there was soon to be a dramatic reduction in the size of the compulsory-school age group fuelled the arguments for reduced spending in the sector. The secondary population peaked at 4.1 million in 1979 and will, it is estimated, stand at 3.0 million by 1991 (Audit Commission, 1986, p.12). Even without an adverse economic and political environment, therefore, education would have entered a phase of contraction. But, whereas in economically more buoyant times it would have been possible to use falling rolls as an opportunity for improvement, in the current situation they have merely provided a convenient excuse for contraction. Demography has facilitated the pursuit of political and economic objectives. That the response to contraction from the public has not been as marked by rigorous protest as one might have expected is due to the third stimulus for contraction: pessimism.

From optimism to pessimism.

Secondary education for all was established during a period of consensus over the means and aims of education: Kogan (1978) identifies the period from 1944-1964 as 'the consensual, expansionist and ameliorist era of British education' (p.x). The 1944 Act embodied what Crosland came to call the 'soft' concept of equality in which it was believed that social justice could be secured through equal opportunity. The collective good was thus seen as at least compatible with individual good and perhaps even a consequence of it. What this position failed to appreciate was the unequal distribution of the ability to take

advantage of equal opportunities: more opportunities merely enhanced the ability of advantaged social groups to utilise the system to their advantage. This was particularly true under the tripartite arrangement: the only defence against inequality was a vague idea of 'equality of prestige'. By the mid-1960s it was abundantly clear that grammar schools had retained their position of superiority over technical schools and, more importantly, over the secondary moderns. Those in the Labour Party who possessed an affection for the grammar schools for the opportunities they had provided to bright working class children (through the scholarship system), found their position increasingly untenable. The Party had steadily - if slowly - moved towards a view of education as an equalising force in society which was in contradiction to the Conservative Party's view of education as a component of the 'Opportunity State' (Kogan, 1975, p.56). The consensus based on 'soft' equality was about to be broken by Labour's adoption of the 'hard'.

Labour's ascent to power in 1964 therefore marked a new phase in education. Expansion was stepped up with the creation of new universities and the first polytechnics. But the encouragement given to LEAs to establish comprehensive schools and the introduction of education priority areas in the wake of the Plowden Report (1967) marked a new direction in educational policy. Henceforth (it was hoped) all children would receive the same education, and the disadvantaged would be granted additional assistance to compensate for their social background.

Ideas concerning the ability of education to ameliorate the position of the poor were clearly of major importance in these developments. Throughout the 1950s and 1960s the dominant view amongst psychologists and educationalists was that those of low educational attainment were essentially victims of their environment. Consequently, good educational environments could enhance educational performance by providing the opportunity for children 'to acquire their intelligence' (Boyle's preface to Newsom Report, 1963). Further elaboration of these arguments led to the conclusion that there was a large pool of potential

talent in the community waiting to be tapped (Robbins Report, 1963). The key was government action. Human capital theories buttressed these sociological arguments for expansion with the economic one that investment in education was crucial for economic development (e.g. Blaug, 1968).

Yet even as expansion continued into the 1970s doubts were setting in as to the ability of education to fulfil the ambitious objectives of affecting individual destinies, healing social division and fueling the furnace of economic development. By the 1970s it was clear that education was not living up to expectations. The influential study of the US system by Jencks *et al* (1972) seemed to show the inability of schools to manipulate life chances in the absence of wider social change. The *Black Papers* (Cox and Dyson, 1971) gave coherence to widespread public concern with a perceived fall in standards, attacking the introduction of 'progressive' primary techniques to the detriment of the traditional 'three Rs'. Work by Byrne, Williamson and Fletcher (1975) purported to show the way the education system itself, far from reducing socioeconomic inequality, was an integral part of the reproduction of that inequality. Education was under attack from all sides of the political spectrum. From the right, criticisms have been aimed at progressive modes of education and Jencks *et al*'s views have been incorporated into both the 'value for money' argument and into arguments against positive discrimination on the basis that schools cannot solve the problems of poor educational attainment amongst the working classes since that is mainly a parental matter. From the left, it has been argued that education performs an ideological function for the capitalist state (Miliband, 1969) and is also integral to the reproduction of labour power (Bowles and Gintis, 1976).

By 1976 public discontent was such that the then Prime Minister, James Callaghan, saw fit to place education on the national political agenda once more, initiating in his famous speech at Ruskin College, Oxford the so-called 'Great Debate'. Callaghan's speech articulated public fears for standards, for

the apparent failure of education to meet the needs of industry and for the lack of parental involvement in schools. More importantly for this study, Callaghan's speech contained within it an implicit critique of the structure of relations between actors within the education service. Changes in this structure since 1944 have been inextricably linked to the changing fortunes of the service. It is to these that I shall now turn.

2.2 Changing patterns of central-local relations in education[1]

In this thesis a key aspect of analysis is the way in which education has been affected by changes in the distribution of power between central and local government. In this section I shall show that in order to understand these changes, a resource dependency model of central-local relations is necessary. Resource dependency and the associated notion of the policy community makes it possible to comprehend central-local relations in education and particularly with respect to the curriculum. It provides the framework to analyse educational variation which is the core of this thesis.

The main period covered by the thesis is from the late 1970s to the mid 1980s. During this period, education was mainly affected by debates over resources, and because of this, it was tied to changes in the relationship between central and local government. These relationships were in turn dictated largely by the agenda of the Thatcher administrations. An explicit educational agenda was a long time in the making and had minimal impact during the period of this thesis, primarily because it was the government's prime concern to reduce public spending overall. Notwithstanding the changes brought about by a number of other comparatively minor Acts, the Thatcher government's ideology has only brought about radical change in education latterly through the 1988 Education Reform Act. Relationships

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1 Relations amongst the actors in education involve three levels of decision-making: central government, LEA and school. Central-local relations in this context is taken to encompass relationships between all three levels.

focused on resources have thus been of central importance to education, and the details of this are central to an understanding of variation. But equally, relationships between actors surrounding the curriculum are crucial to the nature of educational variation. These have been subject to different processes and are less understood. It is to correcting this imbalance that this thesis is in part directed.

Following Ranson (1980), we may note three periods in the history of central-local relations in the post-war period:

(i) early post-war (c.1945-1958): a period of central control in the early years of the establishment of a national system of secondary education;

(ii) mid post-war (c.1958-late 1970s): a period in which local authorities took the lead in directing the development of the service following the introduction of the general grant in 1958, which ended the Minister of Education's close scrutiny of recurrent expenditures;

(iii) late post-war (late 1970s onwards): a period of uncertainty in which central government has sought to reassert itself. This has now culminated in the 1988 Act. This period also involves a redefinition of the function of the LEA and the devolution of more powers to schools, a dual strategy of centralisation and decentralisation which has been termed by Ranson and Walsh (1985) the strategy of 'hierarchies and markets'.

There has clearly been a lack of stability in the relationships between actors in the education service. The main reason for this lies in the fact that the 1944 Education Act failed to define the precise roles of government, local authority and school. The relationship between the Secretary of State and LEAs was laid down in very general terms indeed. Part I Section I of the Act states:

> 'It shall be the duty of the Secretary of State for Education and Science to promote the education of the people of England and Wales and the progressive development of institutions devoted to that purpose, and to secure the effective execution by local authorities under his control and direction of the national policy for providing a varied and comprehensive educational service in every area'.

Education became characterised as a 'national service, locally administered'. But, in the event, there was little in the way of national policy. The curriculum was completely ignored. The DES came to perform a supervisory function of minimal intervention. In the environment of consensus it was unnecessary to lay down precise guidelines, and the DES's main concern was, in any case, for providing sufficient 'roofs over heads' (House of Commons, 1976, p.23). Local authorities were left to provide education more or less as they pleased. And, in turn, they were content to allocate resources to schools and let teachers make decisions about the curriculum and teacher deployment on the basis of their own professional judgement. In the environment of expansion, expansion became an end in itself: there was no coherent strategy. Growth occurred through a process of 'disjointed incrementalism' (Danziger, 1976). In short, a decision-making structure evolved to suit steady expansion in which policy development was as much the result of myriads of decisions at the local institutional level as the result of interest group bargaining in Whitehall.

But such decentralisation could not hope to survive into a period of contraction and pessimism. As the criticisms of the education service began to mount up, blame for the failures of the system began to be apportioned. Since teachers had apparently been allowed such a free reign it was inevitable that their position would be challenged. This it was, principally on the grounds of their lack of accountability (Cox and Dyson, 1971). But the LEAs themselves were not spared the attack. The investigation into the William Tyndale School affair (Auld Report, 1976) reprimanded the ILEA for failing to discharge its

duties in supervising the activities of schools in its charge. A survey of the curriculum by the DES (1979) confirmed suspicions that LEAs generally had little idea what went on in their schools. But the DES itself was not spared criticism. In 1975, OECD (1975) investigators criticised the poor planning capability of the DES. The structures that had come into being after 1944 meant the DES was 'responsible for change but unable to secure policy implementation' (Ranson *et al*, 1986). As a result, the DES embarked on a policy of centralisation in all its fields of activity which carries through to the present. This has not, however, prevented a leakage of power from education (Fowler, 1981) to those bodies which central government feels are liable to bring about more radical change more rapidly, principally the Manpower Services Commission (now the Training Agency - TA). The Thatcher governments have also brought about a strengthening of the role of the Treasury in its pursuit of public spending controls.

Apart from being linked to demands for an increased role for both central government and parents, concern with the decentralised nature of the system has been voiced for financial reasons. During expansion, there was often complete separation of academic from financial accounting functions: the LEAs budgeted, the schools spent. Moreover, it was perfectly feasible to allow schools a free hand to deploy resources. With contraction and falling rolls, however, LEAs have had to make decisions about what to cut and how to distribute resources to ensure the maintenance of an adequate service and especially an adequate curriculum. There has been a thoroughgoing review of allocation procedures which has involved closer monitoring by authorities and also the handing of more budgetary responsibilities to schools.

With important shifts in the social, economic and political environment of education has come a need to redefine the relationships between the actors in the service. In order to understand these fully we need a theoretical framework.

2.3 The Rhodes model of central-local relations

In this thesis a key dimension to the analysis is the relationship between central and local government. This has been traditionally characterised in terms of either an agent of a partnership model (Hartley, 1971). According to the agent model, local authorities had few effective discretionary powers of their own which would allow them to constitute independent centres of decision-making. Rather, their task was simply to carry out the policies which central government departments had specified. Under the partnership model, local and central government were co-equals under Parliament; services could not be provided other than through partnership. As a result, local authorities had not inconsiderable powers to design and implement their own policies. Over time, the argument ran, local government was moving from being a partner to being an agent. This was certainly the view of the Redcliffe-Maud Report (1969). The reasons were two-fold. Firstly, the proportion of local expenditures funded by central grants was increasing and the centre was tightening its controls over capital expenditure. Secondly, central departments had laid down increasingly detailed rules and regulations regarding the provision of services. Whilst both of these were generally true, however, this view of central-local relations raised a number of difficulties.

Firstly, there was a tendency to treat the two tiers of government as monolithic entities. These they are manifestly not. To attempt to encompass all the subtleties of the relationship between Sheffield City Council and the DHSS on the one hand and Cornwall County Council and the DES on the other under the label of either agent of partner was unrealistic.

Secondly, although the two models were posited more as ideal types than descriptions of reality, it is not saying very much to claim that relations between the two levels range from agent to partner. In these circumstances the justification for any particular model has a disconcerting tendency to depend on

anecdote and allegory. Sometimes local government will be an agent, sometimes a partner. It all depends.

Thirdly, whether the agent or partner model was accepted was overly dependent on the analysis of financial relationships, to the exclusion of detailed consideration of policies in particular services.

Attempts to escape from this atheoretical basis of study have led to the proposition that local authorities are political systems in their own right (Stanyer, 1976). This perspective recognises that the increased role of central grants up to the 1970s did not led to a reduction in differences between local authorities because each authority responded in different ways. More generally, whilst central departments have great potential powers of control, it is another matter whether they choose to exercise them. Unfortunately, this approach could not account for compliance by local authorities, nor capture differences in central-local relations between different areas of policy.

Recognising the deficiencies of conventional conceptions of central local relations, Rhodes (1981) saw that there was a need for a theory which could explain a relationship which can range from a high degree of dependence through interdependence to a high degree of discretion (p.28). Rhodes' solution lay in a 'power dependence' model in which relations 'are simultaneously rational, ambiguous and confused'(p.2).

According to power-dependency theory, relationships of power are fundamentally reciprocal. Power is not a fixed quantum to be won or lost at the expense or benefit of another. Power flows from the ability to command resources needed by another party and unobtainable elsewhere. In most situations, both parties will control some resources needed by another. Thus both central and local government have some resources for independent action or exerting influence (see Dunleavy and Rhodes, 1984), but are also limited by their dependence on the other tier for resources outside their control. The nature of these resources

and their distribution between the tiers of government varies between policy areas. Thus when viewed in aggregate across the gamut of different services intergovernmental relations are very complex and constantly shifting. Within policy areas however the ambiguity and confusion is supported by what Rhodes sees as an underlying rationality based on a shared set of interests and an adherence to collective norms. This is the basis of the 'policy community'. Relations *within* these communities are rational, but the links *between* communities are ambiguous and therefore the system as a whole confused.

In formulating this thesis, Rhodes drew heavily on the work of Heclo and Wildavsky (1974). In *The Private Government of Public Money*, Heclo and Wildavsky proposed the existence of a community of interests centred around the Treasury. A common kinship and culture separated those 'inside' the budgetary process from those 'outside', thereby rendering the government of state finance a private affair. The rationale was simple: 'Ultimately British Treasury men (sic) know their desires cannot prevail unless they maintain a community to support them' (p.xv). And community was 'the personal relationships between major political and administrative actors - sometimes in conflict, often in agreement, but always in touch, operating within a shared framework. Community is the cohesive and orienting bond underlying any particular issue' (*ibid*).

Rhodes extended these ideas out of the closed corridors of Whitehall to encircle a much wider range of actors. 'Local authority departments providing a particular service,' he wrote, 'have regular contacts and a shared framework with the corresponding central department or section thereof. In all probability [however] such policy communities will not be limited to the relevant department or government at the various levels of government. They will also be composed of the affected professional associations and other interest groups' (p.115).

Clearly these assertions have major ramifications for the way we look at central-local relations. For not only does the relative strength of local government depend on the policy community being considered, but we need to consider the possibility that a local department may have closer links with the corresponding central department than with other departments within the authority. However, the interests of local departments will not always be restricted to their respective policy communities. Rhodes posits the existence of a 'national community of local government' whose interests are articulated by the local authority associations. This is explored more fully in Rhodes (1986a).

The strength of policy communities will vary from policy area to policy area. Indeed, not all policy areas are correctly characterised as communities. In further elaboration of his work, Rhodes (1988) identifies six types of policy networks which 'create continuity and order in the complex maze of [sub-central government]' (p.8): the policy community is one of these networks. Policy communities are characterised by 'stability of relationships, continuity of a highly restrictive membership, vertical interdependence based on shared service delivery responsibilities and insulation from other networks and invariably from the general public (including Parliament)' (p.78). For Rhodes, the education service is a case in point.

The Rhodes framework clearly has a number of advantages over previous approaches to the study of central-local relations. By making the variation in relations between different policy areas central to his analysis, it provides an important means of understanding the conflicts between departments in central and local government. As is shown below, these conflicts go a long way to account for the key problems facing education at the resource-curriculum nexus. It also facilitates an understanding of the roles of the different actors within communities. For example, it allows for the possibility that 'sub-national actors' may be key national actors and avoids the 'all too easy' adoption of a top-down view of central-local relations (Rhodes,

1986b). As will be demonstrated below, this is central to an understanding of curriculum change.

Since first conceived, the framework has been elaborated into a model of 'inter-governmental relations' (Rhodes, 1986b) and, most recently, 'sub-central government' (Rhodes, 1988). Despite these elaborations, however, a key criticism of Rhodes' approach remains: that by concentrating on relations between actors it downplays policy content when the two are integrally related (Rhodes, 1986b). The key value of the Rhodes' framework to this thesis is as a tool for understanding relationships between actors both within the educational policy community and between this community and others - principally the Treasury and the training policy network. In enabling us to understand these relationships more fully, it provides an essential context for understanding the nature of the policy outcomes which are the result of the interactions of actors and which are the focus of this thesis.

2.4 The Rhodes model applied to education: a framework for understanding resources and the curriculum

The provision of education has traditionally been conceived as the outcome of negotiation between two or three 'partners': the DES, the LEA and, in certain cases, the teachers (Regan, 1977; Fenwick and McBride, 1981). However, as Griffith (1966) noted almost 25 years ago, use of the term 'partnership' allows for a 'pleasant and comforting evasion' of the problems created by two tier government: '...to the extent that the interests of the two groups inevitably conflict, there can be no partnership but only a decision' (pp.18-19). For Kogan (1978) use of the term assumes an equality between the actors which simply does not exist (p.136). Other authors have found that, despite its limitations, 'partnership' is the most convenient way of capturing the nature of relationships. Thus Regan (1977):

'Partnership is a hackneyed term and does not fully convey the flavour of central-local relationships in education. Nevertheless no other term would do as well' (p.35).

Certainly the term resonates with certain aspects of relationships in education and for this reason has proved very robust, forming the basis for analysis in more recent work (see, for example, Ranson and Tomlinson, 1986). However, there is a very real danger that the use of such a pejorative term can become a cause for self-congratulation (or, given recent trends towards centralisation, lament - see, for example, Coulby, 1989), and leave as much unexplained as accounted for. In itself it is of little help, for example, in analysing the shifting pattern of central-local relations already noted, not least because it has been used in ambiguous ways (Thrasher, 1981). For these reasons some authors have been careful to define their use of the term. For McPherson and Raab (1988), partnership 'implies a system in which authority, power and influence are, to some extent, distributed or decentralised' (p.4).

I want to suggest that the central problem for an analysis of actor relationships in education stems from the structure of the service as defined largely by default in the post-war period and from the nature of the education process which inevitably involves mediation of the curriculum by teachers. Following the failure of the 1944 Education Act to lay down clear responsibilities, much of the responsibility for education (including the curriculum) devolved to schools. Whilst negotiations between DES, Local Authority Associations and the teacher unions could lay down broad policies - teacher numbers, school organisation etc. - the details of what was taught and how fell to individual schools, and, depending on the strength of leadership of senior staff, to individual teachers. Studies of policy-making have tended therefore to have adopted one of two possible approaches. On the one hand, the education service can be examined as if it were the outcome of national level negotiations between various interest groups, typically the DES,

the teacher associations and the LAA's, with less important contributions from the Society of Education officers and pressure group activity from bodies such as the National Confederation of Parent Teacher Associations, the National Association of Governors and Managers, and the Confederation for the Advancement of State Education (Fenwick and McBride, 1981; Kogan, 1975). One the other hand, the view can be taken that these negotiations merely provide broad parameters within which the education service has developed largely as a result of local policy formation - involving teachers, Chief Education Officers (CEOs), councillors, governors and parents - interacting with central government (Geen, 1986; Jennings, 1977; Saran, 1973). The former approach takes as its starting point the division of individuals on the basis of functional interest groups; the latter the division of individuals according to their position in the school-LEA-DES hierarchy.

These points have rarely been made explicit. Kogan (1978) stands out as an exception. Commenting on the importance of the interaction between schools and local authorities in moulding educational practice, he points to the problem of deciding how these local interactions become part of the national educational scene. 'The relationship between central and local policies is not linear but episodic and uncertain' (p.129). Because of this it is not possible to be certain how national policy is formed. Those studies which have concentrated on policy-making have focused on easily identifiable changes such as comprehensivisation (cf. Geen, 1986), rather than addressing the more difficult questions raised by, for example, changes in the curriculum (work by Goodson, 1983, is a notable exception). This is not simply a question of 'implementation' in the vein of the work of, for example, Ham and Hill (1984) since policy, especially in the curriculum, has been developed 'from below'. This should not be underestimated: for Kogan (1983), the 'most important changes in British education have been bottom-up...'.

The Rhodes framework provides a means of tackling tensions between the two approaches. The notion of an educational policy community means that rather than seeing the education service as the result of 'horizontal', national negotiation between interest groups, or 'vertical' interactions between levels of administration, we can recognise the totality of the process in which, for example, teachers are both members of a national association and the manipulators of policy at the point of service delivery. Numerous channels exist for the constant negotiation and renegotiation of policy. Educational policies are the result of a 'grinding process' between central government and the institutions which in practice operate the service (Pile, 1974). And many of these 'policies' have been little more than what Heclo and Wildavsky (1974) term 'a series of ongoing understandings' (p.346). For most of the post-war period, indeed, until comparatively recently, much educational 'policy' consisted of accepted procedure and established norm. In this context, the magnitude of recent initiatives by central government can be fully appreciated.

In view of the difficulties associated with the notion of 'partnership' and the pejorative connotations of the term 'partner' it is more appropriate to refer to 'actors in the policy community'. In light of this, who are the actors involved in education provision and what have been their roles in shaping educational resources and the curriculum? In the following sections, rather than describing in detail the main actors, the focus is on the changing patterns of their interrelations with respect to resources and the curriculum. It is useful, however, to list the key actors. At national level, the key actors are:

- the Department of Education and Science and Her Majesty's Inspectorate;
- the teacher unions, of which there are six;
- the local authority associations;
- interest groups such as the Campaign for the Advancement of State Education.

At local level, key actors are:

- education officers, and especially the Chief Education Officer;
- teachers and headteachers;
- governing bodies;
- local parental pressure groups.

2.5 Resources

Debates over resources have been central to the inter-relationships between actors involved in education over the post-war period. Changes in the mechanisms used to allocate resources from central to local government and from LEAs to schools reflect and reinforce the changes in actor relationships. For our purposes the most important changes are those that occurred between the mid 1970s and the mid 1980s. This period has seen both a centralisation within the educational policy community to the DES and, at the same time, a loss of control at national level from the educational policy community to the interests of the Department of the Environment and the Treasury. The practical consequences of struggles over resources at this level between the different communities have largely been left to LEAs - and below them the schools - to sort out. However, in order to understand these developments we need to look at the preceding situation. The next section describes the changes at the centre before moving on to examine changes at local level. In both cases, both the relationships between actors and changes to the allocation process itself are examined.

Changes at the centre up to 1979: the rise of Treasury control over resources.

Ever since a unified system of LEAs was established in 1944, the arrangements for funding the education service have been deeply implicated in the pattern of central-local relations. It has

already been noted that Ranson (1980) regards the abolition of the specific percentage education grant in 1958 and its replacement with a general grant as a significant step towards greater local autonomy in his middle post-war period. The specific grant had certainly made for tighter control since whether it was paid as a whole and whether certain parts of it were paid depended on LEAs conforming to central specifications (see Williams, 1959). Considerable debate on the pros and cons of local autonomy surrounded abolition (see Lees *et al*, 1956). What replaced the grants was one hypothecated grant which was paid according to two sets of needs indicators and in addition a new rate deficiency grant replaced the exchequer equalisation grant which compensated local authorities for low resource base. The 1958 Act involved education in general negotiations over local finance for the first time: ever since, the history of educational finance has been tied to the history of central grants in general.

In 1966, the general and rate deficiency grants (and the special school meals and milk grants) were replaced by one grant: the Rate Support Grant (RSG). The RSG sought to compensate local authorities for a poor resource base and according to 'need' to spend based on historical patterns: it accounted for over 80% of the total Exchequer contribution to local funds. In the early 1970s, some minor adjustments were made to central grants, but of much greater importance were changes to the means of calculating the annual grant settlement. These have become central to relationships in education.

The key change was the introduction of the Public Expenditure Survey Committee in 1969. PESC was a response to the problems identified by the Plowden Report (1961). Plowden had found that public expenditure was handled in a piecemeal way, on an inadequate time scale and was unrelated to available resources. Like its predecessors, RSG was calculated according to expenditure forecasts from each department based on negotiations between officials and local authority representatives. These forecasts were then aggregated and subject to further debate

between the Department of the Environment, the spending departments, and the LAA's. Through PESC which, significantly, was to be chaired by the Treasury, it was hoped that a brake could be put on incremental growth, in which expenditure grew by marginal increments to an unchallenged base. PESC was to become the framework for the forward planning of expenditure (Heclo and Wildavsky, 1974). Henceforth, spending departments were to have to find funds for new programmes from *within* their projected budgets. Total expenditure ceilings became more important. This owed a great deal to the Treasury's predominant position in day-to-day operations. Because of this position the Treasury reinforced its own community of interests by establishing a process of political bargaining for funds in which it was the paymaster (ibid p.347). The introduction of Programme Analysis and Review (PAR) in 1971 further strengthened its position by facilitating the discussion of departmental objectives, the relationships of expenditure to them and the extent to which they were being achieved.

PAR was also important for the DES. Indeed, according to Ranson *et al* (1986) the DES was 'in the forefront ... in Whitehall' in developing PAR as it saw this as a means of increasing its capacity to control policy in the service. Pile (1979, p.59) notes that PAR strengthened the hand of the DES over the LEAs. However, whilst PAR allowed the DES to produce a major 10-year plan covering five policy areas (the famous 1972 White Paper, *A Framework for Expansion*), it remained within the same framework of central-local relations and this led the OECD (1975) to criticise it as still being incrementalist. In the event, the economic slump of 1974 put paid to any ideas of planned growth, and led to a more important series of changes, which strengthened further the hand of the Treasury.

The economic slump which followed the OPEC oil price increases of 1973/4 had a devastating impact on the political and economic environment of the central budgetary process. Forced to seek assistance from the IMF, the Labour government found itself compelled to impose a series of constraints on public

expenditure. The process was not easy. Indeed, throughout 1975/6 the system for controlling and planning public expenditure seemed on the verge of collapse. What emerged from this 'crisis of control' (Wright, 1977) was a system of controlling public expenditure more centralised under the Treasury than anything that had gone before. The Conservative administration which took office in 1979 in turn seized upon these developments to convert what seemed to many to be a temporary expedient into a major plank of its overall strategy, supported by the full weight of party philosophy.

In 1976 cash limits were introduced in the PESC. This was a major turning point (Wright, 1981). As we have seen, PESC had already brought about the introduction of expenditure ceilings. Up to the mid 1970s, however, there had been little attempt to integrate local expenditure estimates with central expenditure planning; in effect, the estimates acted as forecasts which were implemented with little close scrutiny. Bargaining with central departments took place, of course, but negotiations were about increments for several years ahead rather than next year's spending. In 1976 a major attempt was made to change this pattern. Suddenly there was to be no increments for the years immediately ahead. Expenditure was to be limited by a pre-determined total cash sum rather than by an amount determined by the conversion of volume estimates into money terms.

In order to ensure support for its attempts at constraint the Labour government introduced the Consultative Council on Local Government Finance (CCLGF). The CCLGF typified the change in central-local relations from a process of bargaining to one characterised by 'strategies of incorporation' (Rhodes, 1984). Through these strategies, central government sought to win local backing for a series of major policy changes. The approach was essentially a corporatist one of increasing the influence of the local authority associations and local government finance managers in central financial negotiations which would in turn strengthen their ability to control the rest of the local government system in their localities (Dunleavy and Rhodes,

1984). The LAA's had long hoped for a means of influencing the PES, so they welcomed the innovation. But this decision needs to be seen in the context of the Treasury's openly-stated 'threat' that if they did not accept it, then other means would have to be found of imposing restraint; in Rhodes' (1984) trenchant terms: 'Consultation meant effective control - or else'.

The CCLGF established a number of important processes. Through the CCLGF, ministers met the political leaders of the LAA's in regular discussions for the first time. Each spending department has a committee under the CCLGF (for education, this is known as the Expenditure Steering Group/Education) in which its officers and local authority officials negotiate. Most significantly, the CCLGF involved the Treasury in *direct* negotiations with local government for the first time; previously, the DoE had been the sole central department involved in grant negotiations.

The CCLGF was a Treasury initiative and was from the start a vehicle for widening the Treasury's sphere of influence in Whitehall and beyond. It became one of the means whereby the Treasury could challenge the policy communities which had been predominant prior to the financial crisis of the 1970s. In the preceding period, central departments had been able to pursue those interests vested in the expansion of the welfare state. Now, with financial restraint accepted as a necessity by the government, the Treasury increasingly intervened to curtail the activities of spending departments. The CCLGF gave it the opportunity to coordinate the vast number of different relations between local authorities and different departments for the propagation of its own interests as a set of coherent norms. One of these norms involved the 'reclassification' of local expenditure as an integral part of the national public expenditure process (Rhodes, 1984). This was a crucial development because, through it, local expenditure became a legitimate target for Treasury influence.

The CCLGF was also very significant for the educational policy community. For Ranson *et al.*, (1986) the ESGE was a means by which the DES could increase its influence by coopting LEAs whilst respecting their autonomy. Crispin and Marslen-Wilson (1984, pp.88-91) go further and argue that the ESGE points to a break-up of the education policy community because it provides evidence that the DES is more part of the centre than part of education and because relationships amongst the associations are fragile. However, as Rhodes (1988, p.270) points out, the ESGE is but one forum for negotiation and Crispin and Marslen-Wilson place excessive reliance on financial arrangements. Far from causing the demise of the community, the ESGE has been seen by the Treasury and the CCLGF as the educational 'lobby', overemphasising the damage to education of resource reductions (Rhodes, 1986a, p.335). Indeed, the ESGE is of major importance to education since up to half of its work is on matters unrelated in a direct way to the CCLGF (*ibid*); the information and advice it generates is 'one of the important inputs to the tripartite nexus of educational sub-government' (*ibid*). The ESGE 'lies at the heart of centre-local analysis and planning in education' (Ranson *et al.*, 1986).

The Labour government operated a policy of financial restraint rather than absolute cuts. The monetarist approach was seen very much as a temporary expedient. This did not, however, prevent the deepening of a number of trends which were to prepare the ground for a more radical approach to public expenditure adopted by subsequent Conservative administrations. Increasingly, priority has been given to the monetary cost of programmes, rather than to the planning of future levels of real resources. Taxation and borrowing levels are settled before decisions on aggregate levels of public expenditure are made. These levels are set primarily through negotiations between the Treasury, the Prime Minister and the Bank of England. The PESC's working parameters are, therefore, set more by Treasury dictate than by negotiation between different levels of government. Since 1976 there has been increasing emphasis on

the controlling of public expenditure rather that its planning (Wright, 1982).

Changes at the centre under the Thatcher administrations

Whilst it is important to stress that these trends were established before the Conservatives came to power, it is nevertheless true that the advent of a new government in 1979 marked a significant shift in central-local relations. Developments in the budgetary process under the Labour administration were coloured by the *ad hoc* nature of its response to economic crisis. By contrast, the Thatcher government came to office with an explicit commitment to monetarism underpinned by an unshakeable faith in private enterprise. The result was a concerted attempt to cut public expenditure.

The main characteristic of this attempt has been an intensifying search for mechanisms of control rather than influence over local government expenditure (Rhodes, 1984). This search can be seen as operating on two fronts simultaneously. On the one hand, various changes have been instituted in the budgetary process, in the PES in particular. On the other hand, the government has altered the grants system so that it might, in theory, better impose its policies on local authorities.

(i) Changes in the budgetary process

In the budgetary process the Treasury has been committed to a more explicit and comprehensive financial strategy by the government and has been given the means to implement it. The government has eschewed the consultation procedures established by previous administrations, turning the CCLGF into 'a forum where ministers announce hard and fast decisions to unavailing protests by the local government representatives' (Dunleavy and Rhodes, 1984). This has been the inevitable corollary of the PESC's new role as a planner of cuts. The Public Expenditure

White Paper of March 1987 (Cmnd 8175) notes: '... all volume plans are to be regarded as no more than indicative working targets; their attainment is dependent on the availability of finance.' (para 5, p.3). Bargaining in the PESC is now conducted in money terms, rather than in constant prices.

Cash planning has given the Treasury important controls over education expenditure. Education has been affected by the centre's general ability to incorporate its own assumptions regarding inflation rates and public pay rises into the determination of expenditure. The under-estimation of these provides a means of securing volume cuts via the 'back door' (Wright, 1981). More specifically, the government has made assumptions regarding savings on school meals and milk, the removal of surplus places and PTR's which, especially in the early 1980s, local government was unable to meet. For example, the ESGE declared the 1982 Expenditure White Paper's cash plans 'initially impossible to achieve' (*Education*, 16th July 1982, p.52). Objections of this sort led the government to revise its assumptions about staffing and the removal of places in subsequent White Papers, but its general policy of placing responsibility for ensuring its plans were carried out on local authorities remained. The 1983 Public Expenditure White Paper (Cmnd 8789-11, p.47) asserted that savings on meals and milk were essential 'if the planned level of cash for sectors which are of greater importance to the quality of the service is not to be unnecessarily reduced'. It also stated: 'For later years, service levels will depend crucially on the ability of local authorities and others to contain costs generally, including in particular pay settlements and to achieve the planned savings on school meals, through taking surplus places out of use, and by the contraction of institutional expenditure on higher education. If they succeed in this, they should be able to maintain or even improve the levels of provision per pupil in schools, and to meet the demand for 16 year olds to stay on in school or college' (p.46). Henceforth, teacher numbers were to depend on the teacher's pay settlement, and because expenditure was now planned exclusively in cash terms

and total expenditure was pregiven, a high pay settlement would deprive other areas such as books and equipment of expenditure.

This general approach has remained. The introduction of contraction into the public sector raises important questions about the process that has been taken by many to be the defining characteristic of budgeting in government, incrementalism. Incrementalism depends upon an environment of expansion (Greenwood *et al*, 1980). What if there are no increments? Greenwood *et al* suggest that increasing portions of the 'base' shall lose their 'sacrosanct' status and that the budgetary process shall become politicised. In addition, Hood and Wright (1981) suggest that there is a choice between 'decrementalism or quantum cuts'. In other words, there can either be a general reduction in expenditure or specific programmes can be terminated. At the highest government levels the former approach seems to have been adopted since specific cuts involve political decisions that are liable to generate opposition. This, however, merely raises problems further down the administrative hierarchy for the simple reason that at some stage a general reduction in expenditure must be translated into a quantum cut. The 'unscrambling' of complexly interwoven programmes which this entails can be a difficult process (Wright, 1981).

The education sector, like every other government department, has had to face these problems with increasing frequency over the last decade. As the 'temporary' crisis of the mid 1970s became a more permanent downward trend, crucial decisions had to be faced about major parts of the service. Education was, as we have seen (Section 2.1), in a worse position than many other public services. Falling rolls and general pessimism with the service exacerbated its difficulties. But the consequences of this difference as far as resources are concerned have been more of a quantitative rather than a qualitative nature; along with the other services, education has had to rethink its attitudes on what were the 'essential' parts of the service and which could be cut back. The 'disjointed decrementalism' of the 1970s

(Fowler, 1979) has given way to the identification of areas which have borne the brunt of the storm such as adult and nursery education, and the school meals service. These are discretionary areas, on the boundaries of mainstream primary and secondary provision.

Kogan (1981) is eager that we should not underestimate the importance of this change. During expansion, the process of expenditure negotiation began 'deep in the womb of the educational consultative system.' Public spending decisions with their consequences for the RSG and other grants could be seen as the formal outcome of norms negotiated in the educational policy community. In 1979 the attempt to move education spending off the plateau of the 1970s effectively ousted the traditional consultative process. A unilateral decision 'from above' which had more to do with financial than educational priorities altered the bargaining process in significant ways. Negotiations between the DES, the teacher associations and the local authorities came to centre on how best to implement reductions. Old norms condition the way new issues are discussed. A reduction in staffing levels, for example, was rejected in favour of the cutting back of school meals, transport and nursery schools. New 'norms' are coming in to existence from central rather than local initiative. There has been a redefinition of the 'base'.

The changes at the centre have had important ramifications for central-local relations. Most significantly, they have raised a tension between the two levels of government which did not exist before. In a time of restraint, local government is increasingly at the mercy of parameters set by central government. At the same time, the most difficult decisions about what to cut remain at the local level. Local government is thereby placed in the invidious position of simultaneously facing increasing responsibility and increasing dependence. The demise of incrementalism has meant central government has lost an important source of influence over LEAs; in the past the judicious deployment of annual increments through negotiation

allowed the DES to affect the direction of educational change (Williams, 1982). But instead more overtly centralist control mechanisms have come into being. The creation of 'artificial' increments through new specific grants (Educational Support Grants) and through TVEI and CPVE schemes are elements of this new trend. More generally, in a time of contraction the importance of national parameters - both educational and financial - increases. For example, negotiations over teachers' redundancy and early retirement at the national level have had important effects on the flexibility of LEAs in coping with falling rolls. But perhaps the most important changes have been in the grant mechanism.

(ii) Changes in the grants system

When the Conservative government took office in 1979 with the explicit intention of cutting public expenditure, a number of means already existed for influencing the amount of money spent by local authorities. Restrictions already existed on the size of loans local government could take to finance capital spending. As far as current spending was concerned, the government could manipulate a number of elements in the RSG according to its own priorities. For example, central government determined the proportion of total local expenditure which would be relevant for grant purposes. The decision rested on the partly objective and partly political disaggregation of local expenditure into: (i) costs incurred because the local authority was acting essentially as an agent of central government (non-discretionary expenditure) and; (ii) costs incurred as a result of local priorities (discretionary expenditure). In addition, central government had to decide how much of increased expenditure was due to inflation and wage increases and how much of a real increase it was prepared to support.

But these were, in many respects, indirect influences on local government: reducing the grant allocation did not guarantee a fall in expenditure because councils could merely increase their

revenue from the rates. If the Conservatives were to impose their policies, tighter controls were needed. What followed was a series of attempts to force local authorities to spend within guidelines set by the centre. The initial chaos in local finances and central-local relations which these attempts brought about took many years to dissipate and it was only after the Conservative general election victory of 1987 that a truce was called in the battle over local government finance. The recent further reforms involving the community charge and uniform business rates have simply reopened the debate.

From the start the Thatcher administration rejected any notion that it could secure the cuts it required through consultation and cooperation. Although the Labour party had managed to bring the expansion of the public sector to a halt just three or so years before it was already clear that local authorities were not responding to grant change (cf. Boddy and Fudge, 1984). In 1980 a new block grant was introduced which was distributed according to what the government deemed local authorities ought to be spending. The key device was the Grant Related Expenditure Assessment (GREA); it spelled a fundamental change.

Previously grants had been distributed according to a set of criteria designed largely to compensate for a poor resource base and/or high local expenditure need. Although essential for local provision, central grants were seen as facilitating the execution of local decisions. Part of the rationale for this was often couched in terms of the constitutional argument that local government knew best how to satisfy local needs and demands. With the new block grant and GREAs, central government was taking it upon itself to decide what each individual local authority ought to spend. The problem with GREAs for local authorities was that although they purported to represent local expenditure need they were, in fact, calculated to fit a predetermined expenditure total set according to the government's economic and financial priorities. The basis of the allocation was very crude and took no account of the level of spending or priorities accorded to different services

previously. GREAs thus constituted the final break with a system of grant allocation in which local expenditure patterns had largely determined the distribution of central government largesse. More than this, however, in January 1981 the government introduced volume targets for local authorities which bore no relation to GREAs. If local authorities spent above their targets they suffered a reduction in grant on every pound over target ('grant taper') and had to finance any 'overspend' by increasing local rates. With the volume target for 1981 set 5.6% below the 1978/79 volume, a number of authorities not surprisingly overspent.

Ironically, these new measures singularly failed to reduce expenditure. Many authorities merely increased their rates. Unperturbed, the government tried again, introducing in 1982, grant 'holdback' as a supplement to grant 'taper'. Under 'holdback' overspenders were to have a proportion of grant withheld. Also, the government abolished the right of local authorities to levy a supplementary rate in the middle of the year in order to make good any shortfall in grant. Unfortunately for the administration, by this time a number of authorities had, due to successive real reductions in their GREAs, found themselves without any central grants at all. There was only one option left open to the government: to put a limit on the size of local rate increases (rate-capping).

Despite these changes, central government has pledged its commitment to raising educational standards. The government has tried to resolve the tension between these two positions by urging local authorities and 'their other partners in education...to secure the maximum educational value for money within the substantial resources which will continue to be at their disposal; and to ensure that the quality of education offered to all children and students reaches the best standard possible, so that it can serve as the foundation for further educational development and improvement, *not all of which need more resources*' (1982 Expenditure White Paper, Cmnd 8494, my italics).

For its part, the DES has, according to Ranson *et al* (1986) 'used the general GREA mechanism to their advantage where possible', for example in dictating the pace at which surplus places are removed. GREAs have also been used by HMI as indicators of need, a key event in the emergence of a 'new, muscular' DES according to Walker (1983). But in general, it is the Treasury which has dominated the financial relations between central and local government. For example, the Treasury resisted the DES's promulgation in the early 1980s of an education-specific block grant on the grounds that it would encourage spending (Walker, 1983). This would have given the DES considerable control over educational expenditure.

Instead of the specific block grant, the DES secured a series of Education Support Grants (ESGs) designed 'to assist LEAs to redeploy their expenditure at the margin in accordance with objectives of particular national importance' (1984 Public Expenditure White Paper Cmnd 9143). LEAs bid for ESGs and are then allocated resources (or not) according to DES imperatives. In their first year, 1985-86, ESG's accounted for 0.5% of local authority education expenditure, £21M being assigned to support £30M of expenditure (Public Expenditure White Paper, 1985, Cmnd 9428). For 1986-87, the level of ESGs was raised to £28M and the inclusion of grant for mid-day supervision raised the proportion of local authority education expenditure accounted for to 1% (Public Expenditure White Paper, 1986, Cmnd 9702-II). Apart from ESGs, other specific controls have been applied by the DES. The 1986 Education Act introduced direct DES funding of in-service training (INSET) and the 'capped pool' for AFE is a specific grant in all but name. Including these areas meant that some 10% of LEAs' budgets was then hypothecated.

Despite these new controls over local education expenditure, there has scarcely been concerted opposition from LEAs and teachers to these changes. An indication of why this is so comes from an editorial in the *Times Educational Supplement* (24th January, 1986) which noted that specific grants might

'give the "education party" in local government a semblance of the independence they lost when the block grant came in ... they would escape from the debilitating basic principle of block grant that authorities get paid whether they spend anything or not'. Both the National Union of Teachers (NUT) and the Society of Education Officers (SEO) were prepared to support a specific education block grant (Walker, 1983; Petty, 1982) if this was the best means of protecting education's share of local budgets. Despite countless stresses and strains, the education policy community seemed remarkably resilient. As John Stewart (reported in *Education*, 9th July, 1982) cogently pointed out, the SEO had been beguiled by the friendly faces at the DES into forgetting the unfriendly faces in Whitehall.

Despite the DES's efforts, the real locus of control has remained in the Treasury. Apart from failing in its attempt to secure its own block grant, the DES suffered the indignity of seeing 16% of central grant allocated to work-related non-advanced further education (WRNAFE) transferred to the then Manpower Services Commission where the government felt it would be more effectively tailored to labour market needs. It has also seen the TVEI and Compact initiatives given to the MSC (now the Training Agency). But the problems thrown up by these conflicts between policy communities at national level have been left to be resolved by those delivering the service in the locality.

Changes at local level

Just as there has been a centralisation in power between central and local government as a result of debates over resources, so at the local level the dominant feature has been one of centralisation. The twin problems of falling rolls and resource constraint require LEAs to adopt authority-wide solutions. At the same time, headteachers have continued to play a crucial role in shaping the impact of these dual pressures on the curriculum such that there is 'a complex interaction between LEA policies, arrangements and provision of resources on the one

hand and the policies and in-school management decisions of schools on the other'. (Briault and Smith, 1980, volume I, p.233). This has, in turn, brought about changes in the relationships between heads and their staffs but these are not discussed in detail here. Before examining recent developments there is an historical context to the changes of the late 1970s and 1980s which it is important to understand.

Hewton's (1986a) analysis of change in one LEA draws our attention to the 'laissez-faire' and 'planned growth' cultures which succeeded one another in the 1950's, 1960s and 1970s. During the 'laissez-faire' culture, growth was incremental and policy-making, on the whole, 'left to the officers' (p.53). With the advent of corporatism and the penetration of party politics, however, came 'planned growth'. These trends are confirmed by Jennings (1977) but he notes the constraints, even during the 1970s, on resources. In particular, he notes that because of the mandatory nature of the bulk of education expenditure, spending restrictions tended to cut into those areas which were non-essential but which CEO's felt were crucial for progress and the satisfaction of local needs.

With more thoroughgoing contraction, a 'crisis culture' came into being (Hewton, 1986a, pp.73-126) which is now giving way to a 'cuts' culture (pp.127-143). In the 'crisis' culture, 'defensiveness' is a major feature, leading to attempts to reinstate past cuts. But over time, there is adaption and the advent of a 'pragmatic', 'piecemeal and *ad hoc*' approach, moving 'from one temporary solution to the next in order to minimise disruption'. (p.135). But the realisation that the Thatcher administration was unlikely to falter has led to a more complete adaption to the new environment and perhaps even the advent of a 'mature cuts culture' (pp.144-157) in some authorities, involving a radical review of existing policies and not just marginal adjustments. Different authorities will, of course, exhibit different tendencies, related perhaps primarily to political control. For example, many Labour authorities made a stand against central government on principle, leading to

serious confrontation in certain celebrated examples - e.g. Liverpool. But even these authorities have moved away from Hewton's 'defensive' position to a more 'pragmatic' approach with the failure of a Labour administration to win national power in 1987.

These trends have been inextricably bound into centralisation (Greenwood *et al*, 1980) and politicisation (Hunter, 1983). Centralisation has already been dealt with in the previous section. As far as politicisation is concerned, Hunter (1983) summarises the situation well:

'When the necessity for cuts came, there was no political basis for the prioritising of where they should be located. There tended to be an incremental cutting back over the whole budget by officers, with the agreement of councillors - a holding operation to maintain the whole service until better times re-emerged. However ... as the availability of funds became tighter and the room for manoeuvre more restricted, local authorities were forced to identify priorities for cuts on political rather than educational criteria' (pp.82-83).

The loss of power from education has been exacerbated by corporatism, which has undermined the CEO's traditionally powerful position amongst local officers (Jennings, 1984), although, within his or her department, the CEO's degree of control is still likely to be considerable. Bush and Kogan (1982) note a loss of control for the CEO as the web of interactions in local authorities became more complex in the 1970s: power has been centralised to the Chief Executive.

In practical terms, falling rolls and resource constraint have had two main consequences for education officers:

(i) the need to remove surplus school places, involving school closure or wholesale reorganisation;

(ii) the need to protect the curriculum.

The former has been the cause of considerable local acrimony and political activity in many areas (see Bondi, 1988) and has also had ramifications for central-local relations since the Secretary of State's sanction is required for local reorganisation. The need to protect the curriculum has, by its nature, not stimulated local political debate to the same degree, but is no less important for that. Indeed, it is arguably more significant than school closure or reorganisation since it affects the education process more directly. The problem for the curriculum is that, with falling rolls, a *pro rata* reduction in teaching staff cannot be carried out without adversely affecting either the number of subjects taught, the contact ratio, or class size (see Briault and Smith, 1980; Dennison, 1981; Walsh *et al*, 1984). Because of this, it is necessary to lower PTRs in order to prevent the erosion of curriculum standards. In the past, teachers have been allocated to schools on the basis of PTRs derived largely from historical circumstances, with some additional staff allocated according to officer discretion for schools with special requirements, such as split sites, small intakes or large numbers of pupils with additional educational needs. Simkins (1984) terms this 'basic' and 'extra-basic' provision. With the onset of contraction, many LEAs found themselves unable to protect their schools' curricula because they had no idea what subjects they provided at an aggregate level which might assist them in resource allocation (DES, 1979). Some simply tried to adopt existing allocation processes, but the increased reliance on officer discretion and the provision of more and more 'extra-basic' staff undermines confidence in the ability of the system to allocate resources fairly (Simkins, 1984). This led to the development of what are widely known as curriculum-based staffing (CBS) models.

It has been suggested that CBS models might more accurately be termed organisation-based staffing (OBS) models (Simkins, 1984), since they are often based on assumptions regarding the number of option groups, class size and contact ratio rather than

explicitly on the curriculum. These assumptions are used to generate individual school PTRs. The Audit Commission (1986) has termed these activity-led staffing models. In other cases, however, authorities have identified a core curriculum to be protected, expressed either as subjects or the broader, more flexible 'areas of experience' (EMIE, 1982). This approach permits the closer matching of staff expertise to subjects rather than simply staff numbers to organisation.

Despite their advantages, HMI (DES/HMI, 1985a, para. 25) notes that by 1985 only 18 LEAs out of the 96 in England had agreed secondary school curricula for staffing purposes, and only 10 had actually implemented them (para. 28). Of the case studies in this thesis, only Leicestershire had implemented a model at the time of the empirical work, and then only in 1985/6 with subsequent modifications. The others allocated staff for curriculum protection on an *ad hoc* basis. In 1986, the DES (1986) revealed that whilst five sixths of LEAs were drawing or had drawn up curriculum policy statements, a third of LEAs 'did not describe action to tackle the staffing consequences of curricular change' (para. 17).

The reasons why individual LEAs have failed to address this issue are complex but a key one is the problem of changing past distributions. Wholesale reform means there must be winners and losers; it is often easier for LEAs to do nothing except adapt existing systems. This strategy is particularly attractive where adoption of new standards of provision is costly; the DES (1986) has noted that this was a hindrance to the introduction of CBS models in some authorities (para. 17). Also important are fears in schools that these changes mean centralisation and prescription of the curriculum (EMIE, 1982; Simkins, 1984). Indeed, it is hard to see how the regular collection of curriculum information and the development of CBS formulae can fail to strengthen officers in their negotiations with headteachers. Apart from the general resistance this is likely to engender in teachers on the grounds that it is a curb on their professional autonomy, the redeployment of staff, which

must be an integral part of any CBS model, is likely to generate much resistance (Forbat, 1985).

Within schools themselves, there have also been important changes for the allocation of resources. Unfortunately, this area is generally under-researched (Gray, 1983, pp.14-17), with studies tending to be normative or theoretical rather than empirical (see, for instance, Knight, 1983; Simkins and Lancaster, 1987). However, it is clear that, just as LEAs have been pressurised into the adoption of more equitable and rational allocation techniques, so too have schools. The incrementalism of the period of post-war expansion has given way to the adoption of quantitative, formula-based methods (Davies and Ellison, 1987). Simkins and Lancaster (1987) have summarised the reasons behind this development:

> 'With resources becoming relatively more scarce and increasing demands for accountability, choices will become more stark and the opportunity costs of mistaken decisions relatively greater. In these circumstances a budgetary system which makes no real attempt to impose a modicum of economic rationality on the resource allocation process is likely to become a liability' (p.57).

In times of rapid change, the continuation of a process which adds increments to existing allocations is likely to lead to curriculum distortions (Crompton, 1981, quoted in *ibid.*, p.71). The spread of more rational mechanisms has been given an additional fillip with the development of local financial management.

The 1980s have thus witnessed a major change in the role of the LEAs in many authorities. Whilst negotiations at national level have set the context of resource constraint, it is at local level that the relationships between resources and the curriculum are worked out. The LEA has become, of necessity, increasingly involved in this relationship, where once it was

more the preserve of actors in the school. But the curriculum has a context of its own, and it is to this that I now turn.

2.6 The Curriculum

The study of central-local relations has been dominated by a consideration of financial relationships. In education, this has been accompanied by a focus on statements of the formal relationships between the centres of decision-making. This has meant that there has been considerable neglect of one of the most important areas of education: the curriculum. The trend towards centralisation in educational policy-making since the mid-1970s has gone some way to rectify this. The emergence of an explicit on-going debate on educational standards in the 1970s stimulated national discussion of the curriculum in terms of its adaptation to the needs of industry and has broadened to culminate in the National Curriculum. This has prompted research on the recent changed role of the DES. But analysis of the manner in which curriculum change was related to central-local relations in the period up to the mid-1970s remains scarce indeed. Since the curriculum of the mid-1980s may be said to represent the culmination of developments since the war (without wanting to push this assertion to the point of teleology) an understanding of the changing nature of central-local relations with respect to the curriculum is essential. Until the 1988 Act, the pattern of control and the resulting curriculum patterns were still largely those laid down in the two decades after the war, despite trends towards centralisation. The conception of the education service as a policy community is particularly useful for the analysis of these relationships.

We have already seen how the 1944 Education Act established a structure of relationships amongst the main actors in education by which responsibility for the curriculum devolved by default to schools. In Ranson's (1980) 'middle-post-war' period the DES was, as a result, 'not so much...a policy-maker as a promoter and catalyst of policies around which there (was) a growing consensus'. Much educational policy came from below, witness

the development of comprehensive education in Leicestershire, for example. For Lawton (1982) the period from 1944 to 1960 was 'the golden age of teacher control of the curriculum'. 1950/51 saw the replacement of the group examination school certificate with single subject GCE 'O' levels, freeing schools from the constraint of having to provide a collection of core subjects. For Broadfoot (1980) 'educational provision post-1944 reveals a system still dominated by the nineteenth century legacy of the struggles of non-conformists and Anglicans alike for control over the emerging educational system - a struggle which gave rise to an "anarchic" ideology of teacher autonomy and governmental interference as a monstrous entity to be resisted at all costs'. An 'ideology of professionalism' (*ibid*) developed to support and justify teachers' pre-eminent position.

This was an important development. As Laffin (1986) points out, '... in many policy areas the existence of a well-organised profession has been a more important factor in the development of policy than the division of powers between central and local government'. In the absence of a formal division of responsibilities for the curriculum, this was clearly true of education. Responsibility for the curriculum fell to teachers. Despite this knowledge, an understanding of how curriculum change occurred, how policy evolved from below, rose to the centre and was disseminated, remains sketchy. Thus, for example, Lawton (1980) notes an 'ambiguity' (p.7) in the triangle of central government, local government and teachers insofar as 'teachers' can refer to their associations or to the individual teacher interpreting the curriculum to pupils in the classroom. This prompts him to comment in the footnote accompanying this observation that the slogan 'teacher control of the curriculum' is 'almost entirely meaningless. Does it mean professional control (by the Schools Council or NUT) or control by headteachers or by assistant teachers?' (Footnote 9, p.141). This is the problem discussed in Section 2.4, and, as I argued there, it is the concept of the policy community which can help us to recognise that both of these elements are central to an understanding of change in education.

It is important not to exaggerate the extent of teacher autonomy. Broadfoot (1985) has shown that it is wrong to equate the *strength* of control with its *location*. Thus, control of education in England has traditionally been 'highly decentralised but nevertheless exerting powerful constraints on practice' (*ibid*). Chief amongst these constraints for the curriculum has been lack of resources and the examination system, the latter of which has led to a skewing of the goals of education towards university entrance requirements, with all the consequences that has for less able and non-academic pupils. But these constraints did not provide a clear structure for development. Without a framework within which to develop a 'dangerous vacuum existed: the typical grammar school curriculum changed very little; modern school curricula generally lacked structure and purpose, struggling to get away from the elementary tradition but not to ape the grammar schools; where comprehensive school curricula developed they tended to be uncomfortable mixtures of the two' (Lawton, 1982, p.13).

Teacher autonomy meant that far from the curriculum being developed as a whole in coherent way, guided by explicit shared professional goals, it was left to advance piecemeal, influenced in an uncoordinated way by HMI and local inspectors, subject associations, national statutory bodies and standing Advisory Councils, occasional government committee reports and the educational press (Broadfoot, 1980). Curriculum development occurred through the process of 'aggregation rather than revaluation of changing circumstances' (DES/HMI, 1979, p.43), responding amongst other things to the raising of the school leaving age twice and to a variety of curriculum development projects in different subjects (DES/HMI, 1980). This was a period of curriculum 'drift' (Hoyle, 1969).

The 1950s and 1960s saw responsibility for the overall curriculum in terms of content and for evaluation in the hands of the school, and responsibility for pedagogy (teacher-pupil

relations and teaching methods) in the hands of individual teachers (Lawton, 1983, p.125). The establishment in 1964 of the teacher-dominated Schools Council for Curriculum and Examinations (SCCE) has been seen as the institutionalisation of teacher autonomy (Broadfoot, 1980). As Banks (1969) shows, the Schools Council, though a national body, encouraged a decentralised, bottom-up, schools-based approach to curriculum change and he also notes that, although LEA inspectors could play a key role, the proliferation of projects and other issues such as reorganisaion meant that their role was diminishing. Teacher control of the Schools Council meant that the issue of whole curriculum planning was ducked, largely because the teacher unions opposed anything which smacked of centralisation (Lawton, 1989, p.2).

But these were also the beginnings of the rumblings of centralisation. For example, Lawton (1989) shows that the constitution of the SCCE was the outcome of an attempted centralisation, headed off by the combined power of LEAs and teachers; they had 'won the battle but not the war' (p.36). Pressures for centralisation continued. Concern over standards led to the establishment of the Assessment of Performance Unit (APU) in 1974, devised by DES and HMI in concert to take a more active role in the curriculum. In 1976 the Tenth Report of the House of Commons Expenditure Committee criticised the DES for confusing resource allocation with educational planning (House of Commons, 1976) and the OECD (1975) accused the DES of poor planning capability. Callaghan's Ruskin College speech of 1976 ushered in the so-called 'Great Debate' on standards. The memorandum from the DES to the Prime Minister (the 'Yellow Book') which formed part of Callaghan's brief for the speech criticised the Schools Council for 'having barely begun to tackle the problems of the curriculum as a whole' and for having been dominated by the interests of the teacher unions (quoted in Salter and Tapper, 1981, p.116). As part of the solution to education's ills, it proposed a 'core curriculum' (*ibid*, p.202).

In 1978 financial control of the Schools Council was placed in the hands of the DES and LEAs and in 1984 the Secretary of State replaced the Council with the Secondary Examinations Council (SEC) and the Schools Curriculum Development Committee(SCDC), all of whose members were to be his appointees. In the meantime the debate on the curriculum continued, mainly through the publication of studies and proposals by both HMI (DES/HMI, 1977, 1980, 1985b) and the DES (DES, 1980a, 1981a, 1981b, 1983a, 1984a). It is not proposed to discuss these in detail; further discussion of the curriculum is given at the start of Chapter 8. Suffice it to say at this juncture that the debate finally culminated in the adoption of the National Curriculum, which began its progressive implementation in autumn 1989.

The DES clearly moved towards securing more control over the curriculum during the 1970s and 1980s. As has already been demonstrated, this was closely linked to its having responsibility for changes but no means to carry them out. Salter and Tapper (1981; 1985) propose that 'the process of educational change in Britain is increasingly controlled by a centralised bureaucratic dynamic' (1985, p.4). As McPherson and Raab (1988) point out, this thesis rests on the assertion that bureaucrats pursue their own interests (p.19). This certainly resonates with criticism from elsewhere (for example, Chitty, 1988) that the National Curriculum represents a bureaucratic concern for efficiency, output and testing. But Salter and Tapper show little consideration of the wider political environment, especially the advent of the Thatcher governments, which have not displayed a tendency to side with departmental tradition. As Lawton (1986) points out, there are three elements to central government, the politicians, the bureaucrats (civil servants) and the professionals (HMI). All have different ideologies and are more liable to disagree than agree. But, I suggest, in key areas, the DES, already trying to centralise policy, has been considerably assisted by a series of Conservative governments bent on pursuing a policy of 'hierarchies and markets' (Ranson and Walsh, 1985).

It must also be said, however, that these same governments have not been impressed by the DES's inability to get its own way. We have already noted the DES's loss of control over WRNAFE and the funding of TVEI and, most recently, Compacts through the MSC. TVEI has arguably been the most important single curriculum initiative since the war, designed to increase the vocational relevance of the whole secondary curriculum, not simply traditional craft/technical subjects. Originally piloted in selected LEAs in 1983/4, it has since been extended to cover all schools. For the DES not to have been directly involved in this programme is highly indicative of its continued inability to affect the curriculum as rapidly as the Thatcher governments wished.

With centralisation to the DES, what has happened to the role of the LEA? To begin with, it is clear that at the start of the 1980s 'far too little (was known) about the functioning of LEAs in relation to school curricula' (Lawton, 1980, p.vii). However, as successive DES surveys showed (DES, 1979, 1986), the LEAs had little idea themselves what their schools were teaching save in a piecemeal way: the inescapable conclusion was, of course, that LEAs had, in general, little role in the curriculum, expect perhaps for the stimulation of initiatives in certain areas. Neither did some LEAs want to have influence: the DES (1986) found that a sixth of LEAs would not adopt curriculum policies since they felt this was the preserve of teachers (p.4). More generally, Dennison (1984) doubted whether many LEAs had 'either the facilities, or the will, to design, implement and monitor the detail of curriculum management' (p.146). With centralisation to the DES, however, has come centralisation within the LEAs, augmenting a trend already apparent because of falling rolls and resource constraint (see preceding section). The 1986 Education Act requires LEAs to maintain curriculum policies and the 1988 Act to collect curriculum data in order to ensure the implementation of the National Curriculum. But LEAs have been reluctant to prescribe the curriculum in detail. The DES (1986) found that over 50% described it in terms of the broad 'areas of experience' while

only 20% used the more specific subject approach (p.11). The extent to which schools were encouraged or coerced into conforming to these 'models' varied considerably.

The full effects of the government's education polices are only now beginning to be felt. There is little evidence that the centralism of the DES had any major impact on the curriculum prior to the 1988 Act, and, indeed, the most important development, TVEI, had been directed through the Training Agency. The curriculum of the first half of the 1980s largely reflects the pattern of developments established in the post-war period, along with the consequences of falling rolls and resource constraint. As Maclure (1988) points out, the 'administrators' approach' to changing the education system through 'incremental stages...survived well into the era initiated by Mrs Thatcher's election victory in 1979' (p.158). It is only comparatively latterly - beyond the dates of this thesis - that explicit educational policies have emerged.

Teacher autonomy has remained considerable. As Lawton (1982) pointed out in the early 1980s 'far too many teachers work in complete isolation from their colleagues ... few schools have an adequate machinery for discussing the curriculum as a whole and making decisions about it' (p.18). Planning the curriculum as a whole has rarely been taken on by schools, and only recently by LEAs, and then mainly because of the stimulus of constrained resources. Schools may have had control over the curriculum, but it has seldom been developed in an holistic way. Problems of scarce resources, especially of staff with the correct mix of expertise, and problems of micro-politics and territoriality (Ball, 1987) have been major constraints on action.

Curriculum change has occurred only slowly and piecemeal. In 1979, HMI found 'little evidence of a clear rationale of policies and practices' in the curriculum (DES/HMI, 1979, p.39). The main avenue for change has arguably been the 'subject community' (Goodson, 1983; Wiegand and Rayner, 1989) rather than the policy community as a whole, although this provides the

broader context. Many teachers have subject loyalties that transcend the school and are reinforced by national subject organisations (Weston, 1979, p.63) and local subject advisers, with an important role being played by HMI in the transmission of curriculum ideas, given the ideology of professionalism which they share with teachers (see Lawton, 1986). But the 1980s have seen signs of change to this pattern. In 1988 HMI (DES/HMI, 1988) noted that '(by) and large...since...1979...schools have got much better at making their curricular aims and objectives explicit' (p.5). Many schools had 'reappraised their curricula, either singly or in association with other schools in LEA initiatives' (p.58).

2.7 Conclusions

This chapter has highlighted the need to understand the structure of relationships between the actors in education provision. The patterns of variation observable in the first half of the 1980s reflect the distribution of power established in the post-war period and the changes that were being brought about in that distribution. Patterns of educational variation reflect a complex interplay between the general distribution of power of central and local government and the nature of relations in the educational policy community. The distribution of resources, and the structure of curricula which results from their deployment, is the result of decisions at three levels - central government, the local authority and the school - and involves two different sets of actors. But decisions about resources and the curriculum are not taken in isolation of each other at each level but are the outcome of constant negotiation and renegotiation. Resources, unit costs and the curriculum are closely interwoven. An understanding of their variation requires analysis of the patterns of provision which flow from decisions at each of the levels of decision-making. This is the major objective of this thesis and is developed further in the next chapter.

CHAPTER 3: GEOGRAPHICAL VARIATIONS IN EDUCATION PROVISION

3.1 Introduction

Geographical variation is one of the key policy outcomes of the structuring of relationships between actors in education. This chapter assesses previous research in this area and develops from this the approach adopted in the empirical sections of the thesis.

Variations in education provision occur at two levels: between LEAs; and, within LEAs, between schools. These variations are conventionally thought of in terms of variations in levels of resourcing and can be substantial. They have stimulated attempts to examine both their causes and their consequences. Unfortunately, the few studies in this area do not form a coherent corpus of work; they are an eclectic collection characterised by a variety of concepts, differences in perspective and sometimes mutually contradictory findings.

In this chapter I review these studies. First of all I deal with research which examines variations between LEAs, and the lessons which can be derived from it. Secondly, I review and assess studies of variation at the school level. From these assessments, I draw out those lessons which underpin the structure of the thesis and which is described in Chapter 4.

3.2 LEA-level variations

At the LEA level attempts have been made to account for observed differences in educational expenditure. Early work by Davies (1968) demonstrated the extent of the connection between a series of socio-economic background factors and expenditure. Boaden (1971), in his focus on political variables, found that Labour-controlled LEAs on average spent more per capita than Conservative ones after controlling for social class and the

size of the school age population. Foster, Jackman and Osborn (1975) demonstrated that variations between local authorities had decreased up to 1972/3, and that this variation was due to local discretion only to a small extent. Dawson (1976), however, argued that about 60% of the variation in expenditure per secondary pupil could be accounted for by special needs provision and local policy choice. Howick and Hassani (1979, 1980) were more tentative, and did not attempt to explain observed spending patterns. They did find, however, 'a clear correspondence ... between unfavourable conditions and high expenditure' (*ibid*, 1980) in outer London and in the metropolitan districts, whilst in the English shire counties there was no such relationship. In addition, only in London was there 'a significant relationship between political affiliation and secondary expenditure' (*ibid*).

Jackman and Papadachi (1981) developed a more thoroughgoing discussion using more complex regression analysis and concluded that 'just over half of the existing variation in expenditure in both primary and secondary education can be attributed to cost factors, and hence does not imply differences in standards of provision. However, preference and financial factors, which we would associate with differences in standards, do appear to account for a significant part of the variation (about one-third for primary and one-quarter for secondary, the remainder of the variation being accounted for by the interaction between the two sets of factors)'.

More recently, Jesson *et al* (1985) have suggested that 60% of the variation in LEA expenditure is due to 'variations in the composition and demography of the populations which each LEA serves'. They also found that expenditure was not related to socio-economic background in a linear fashion, but was highest in LEAs where the proportion of the population in low socio-economic groups was high and also in LEAs where the proportion in high socio-economic groups was high. This reflects the greater special needs of low socio-economic groups and the

greater staying-on rates and smaller examination classes of high socio-economic groups.

The considerable and increasing variations in provision between LEAs has been a concern for HMI during the 1980s. Their 1986 report on the effects of LEA expenditure on provision (DES/HMI, 1986, p.9) notes that disparities in provision have widened as a result of local policy decisions, increases in the financial contributions of parents and others and the selective implementation of central government initiatives such as TVEI and those funded through ESG's. Its 1987 report (DES/HMI, 1987a) expresses concern at the 'extent and haphazard nature of much of the variation' (p.6). But significantly, HMI have moved beyond the simple analysis of expenditure and have found that 'unsatisfactory standards of provision are more often related to ineffective deployment of people and resources than to shortages of the resources themselves' (*ibid*, p.7).

Apart from these attempts to account for observed differences in provision, attempts have been made to examine the links between these variations and educational attainment. As far back as 1968, Davies (1968) notes that provision variables were comparatively unimportant in accounting for differences in attainment alongside the socio-economic characteristics of local authorities (p.272). A few years later, however, a group of workers led by David Byrne attempted to establish precisely the opposite. Their findings run counter to the received wisdom that provision in terms of expenditure and pupil:teacher ratios (PTRs) has little effect on attainment. Because they contradict a number of recent studies (DES, 1983b, 1984b; Lord 1984) their work is worthy of more detailed attention. Moreover, they represent one of the few attempts to link both the causes and consequences of variation together (the other is Byrne (1974) which is discussed below).

In order to understand the work of David Byrne and his research team, it is important to realise that, unlike the other studies in this field, they began from a developed theoretical position.

Their aim was to restate the importance of class as a determinant of educational attainment. They criticised the commonly accepted 'culture of poverty' thesis for emphasising the importance of class differences in 'educability' and effectively blaming the individual for his or her lack of educational 'success'. Class, they argued, is a relational concept and educational attainment a product of social structures as much as individual characteristics. They thus sought an explanation for poor working class achievement in what they termed the 'socio-spatial system' of provision. Through the system of education provision, dominant classes assured their own educational success through different levels of provision. In two papers (Byrne and Williamson 1972, 1973) and a subsequent book (Byrne *et al*, 1975) they seek to demonstrate that for a group of northern LEAs and then for all English LEAs, variations in provision (including PTRs, school type, per pupil expenditures, and the proportion of teachers who are graduates) have an important effect on attainment (in terms of staying on rates and rates of entry to higher education) and that these variations are related to political variables.

These findings and their methodology have come in for important criticism. Pyle (1976) and Hutchinson (1975) both note inconsistencies in their work. Hutchinson, for example, notes that at one point they deny the importance of socio-cultural factors as 'mere ideologically functional myths', but then argue that resources are 'just as' important as these factors. Methodologically, Byrne *et al* fall into the ecological fallacy because the high level of aggregation of the LEA data inflates the correlation between provision and attainment. These are also serious problems because the variables used in the analysis differ in their analytical statuses: resource variables are 'global' properties applying to a whole LEA; the attainment variables are 'analytical' properties produced by averaging the characteristics of individuals. The precise nature of the statistical distortions these produce are not known but it is clear that when Byrne and Williamson (1972) argue that a high proportion of pupils stayed on in LEAs of high social class and

that this was due to high levels of attainment they were committing an ecological fallacy: they could not know from aggregate data who was staying on.

These difficulties led Pyle to conclude that 'their own evidence fails to support the theories and conclusions which they advance.' A fundamental problem is that their 'view of the connection between elitist/egalitarian education policy and the social class/political structure of the LEA is too simple.' 'Progressive' LEAs were just as likely to be Conservative as Labour controlled. The problems connected with the LEA level of their data has led Eggleston (1977) to conclude: 'In view of the extreme difficulty that arises from attempts to relate specific rather than general ecological factors to educational attainments, the conclusions of Byrne Williamson and Fletcher seem to rest at least to some extent on a generalised act of faith' (p.56).

Many of the problems associated with the work of Byrne *et al* have not been overcome: this applies especially to the aggregation issue. Nonetheless this has not prevented further attempts to examine the resource-attainment issue at this level of analysis. These attempts stem from an attempt to demonstrate the supremacy of the old tripartite system over comprehensive schools (Marks *et al*, 1983, 1985) and from a concern for economy, efficiency and effectiveness (DES, 1983b, 1984b; Lord, 1984).

Marks *et al* purport to show that tripartite schools fare better than comprehensive schools in terms of attainment. However, their reading off of *school* background from *LEA* data seriously flaws their argument. The two DES Statistical Bulletins, mistakenly entitled 'School Standards and Spending' (they are analyses of *LEA* expenditure and averages of school attainment) present regression analyses of the relationships between attainment, socio-economic variables and expenditures for all 96 English LEAs. Bulletin 16/83 found that expenditure per secondary pupil had little role in the determination of

examination results at LEA level. By contrast, measures of the social background of pupils were 'significantly associated' with average attainment levels.

This was a gross model to use. Aware of its inadequacies, less than twelve months later the DES produced Bulletin 13/84 which presented the results of a more refined model. Whilst the measures of pupil performance and social background remained essentially unchanged, the measures of inputs were expanded. Whereas before total per secondary pupil expenditure had been used, this was now disaggregated into its teaching and non-teaching components. In addition, eight variables representing different aspects of the structure of schooling in the LEAs were included.

On the whole, the conclusions were the same as before but significantly in a number of instances 'higher attainment was positively associated with teaching expenditure', although its contribution to 'explaining' the variation in attainment was always small. The greatest improvement was probably in the more careful wording of the Bulletin, witness: '... the social background, and to a much lesser extent the school-based and financial factors, provide a statistically significant explanation of the variations between local authorities in the level of exam success of school leavers.'

Around the same time as these studies appeared, Lord (1984) was carrying out a similar set of analyses. Lord concluded that '... high spending is no guarantee of a superior education, (and) modest expenditure will (not) necessarily lead to an inferior one' (p.75). This was true even controlling for variations in the character of LEA populations. From an analysis of 6 clusters of LEAs grouped according to 6 socio-economic variables, Lord found that: 'Some authorities are spending considerably more than others with apparently similar populations and yet obtain inferior results in every way.' (p.30).

A reanalysis of the DES data by Gray and Jesson (1987) has presented a 'league table' of LEAs which indicates the degree to which each LEA is above or below the level predicted in their regression model, allowing for differences in background. The different approach to context produces different results to the DES.

3.3 Lessons from the LEA studies

The importance of these studies for the thesis lies in the issues they raise regarding both the nature of variations in education provision and the appropriate methods to use in their analysis.

The first set of studies forms a loose collection of work on the *causes* of variation whose results are inconclusive. Although background variables concerning social, economic and political factors are clearly important their relative importance is difficult to judge. Similarly, whilst there is local discretion in the level of education expenditure, the magnitude of its effect is difficult to assess.

The problem for these studies is that, in the absence of a more theoretical framework on which to hang an analysis, the task becomes one of simply feeding variables into one or more regression equations to see what results are produced. The lack of a satisfactory framework and the choice of this particular statistical technique then become mutually reinforcing. Moreover, the search for variables to fit into the regression equations encourages an obsessive concern for expenditure as if this were the only measure of provision. The demands of the model and the level at which the analysis is carried out (the LEA) severely constrains the types of data which can be incorporated and which are available. Education expenditure is affected by a whole host of factors never included in these models: the historical experiences of LEAs; the legacy of buildings, organisations and traditions; population density;

outside grants; cultural factors; urban/rural factors; levels of parental support; structure of the teaching force (South, 1986).

More fundamentally, these studies draw attention away from other factors such as the curriculum which are at least an equal and probably a more important source of variation. This misrepresentation stems from the tendency of early studies to treat education as just another service and from the associated failure to consider the nature of the policy process in education. Education is not just another service: it is much less standardised and presents enormous problems of measurement. And crucially it is not just about expenditure: it is about *what is taught* and *how*. Failure to take this into account stems in part from the approach which abstracts a set of variables from the complex of inter-governmental relations surrounding provision.

The studies which have endeavoured to analyse the *consequences* of differential provision run into a series of related problems and these have been articulated more forcefully than those just outlined because of the tendentious nature of their results. It is not intended to enter the debate on school effectiveness. The literature is complex. But a number of criticisms of work at the LEA level are highly pertinent to the study.

Firstly, in his critique of DES Bulletin 16/83, Goldstein (1984a) points out that the DES are guilty of a mis-specification of their model: the absence of a simple relationship between attainment and expenditure does not mean a more complex relationship does not exist. Though an elementary point, it needs to be reiterated that regression equations are designed primarily to test the strength of linear relationships. But I suggest that it is reasonable to suppose that the relationship between provision and attainment may well be such that major additions to provision which is at a very low level may have an important impact on attainment, whilst above a certain level the marginal effect of extra resources tails off. Thus when, for example, Mwamwenda and Mwamwenda (1987) assert

that their findings in Botswana contradict the view that resources in general do not affect attainment, they are falling into the trap of believing their results can be extrapolated linearly since this is what their technique would lead them to believe. But Botswana may be at the lower end of provision where increasing resources do affect attainment. In Britain it might take a large increase in resources to make an appreciable difference. In short, variation is formed by complex factors and leads to complex consequences that cannot be captured in simple regression models.

Secondly, as Goldstein (1984b) points out, the lack of a relationship at LEA level 'does not rule out the possibility of a substantial relationship existing, for example, at the level of the school, nor at the level of the individual pupil. The problem is, once again, the level of data aggregation. As Eggleston (1977) has argued: 'Whilst a typology of local authorities may be a suggestive starting point for analysis, it cannot indicate with sufficient precision the details of the actual resources that reach the individual school and the individual child and the effectiveness with which they are used' (p.37). It is to school level variations that I now wish to turn.

3.4 School-level variations

If there is little enough research into variation between LEAs, there is even less research into variations between schools. This derives in part from the traditional concern of political scientists with explaining variations in local government expenditure but also from the difficulties (some technical, others highly political) of obtaining information on school-by-school differences. This is unfortunate, since, as Hough (1981) has shown, '... averages over the whole of the secondary school system of each LEA ... conceal much wider variations between individual schools' (p.110). Studies at this level fall into three groups:

(i) those concerned with describing and accounting for variations in provision

(ii) those which examine the link between these variations and attainment

(iii) school effect studies.

Though clearly not mutually exclusive, these studies nevertheless have different perspectives and approaches.

(i) One of the few studies to analyse variations in provision in detail in one LEA is that by Tunley *et al* (1979). Tunley *et al* analysed the changing patterns of provision in Newham between 1973/4 and 1976/7 in the context of changing central-local government relations. They concluded that it was possible for both the allocation of resources and the allocation of children to schools to operate to the disadvantage of more deprived pupils and that these trends could exacerbate over time. These conclusions, however, are based on an assessment of correlation coefficients which are small and whose movement over such a short space of time tends to be erratic rather than consistently in one direction. Moreover, as will be shown later in this thesis, Newham is not an authority of great socio-economic contrasts and the differences between secondary school catchments are small. The technique by which Tunley *et al* construct their measure of school background from data on linked primary schools tends to accentuate the differences.

The other main study to look at between school variation is that by Hough (1981). Unlike Tunley *et al*, Hough eschews analysis of the allocation process. For him expenditure patterns are the result of demand and supply and, on this basis, 'expenditure variations within LEAs ... relate either primarily or solely to variations in costs' (p.18) since to 'believe...that demand has a significant influence on the level or pattern of spending in any one school or LEA area implies considerable confidence in the efficiency of the democratic process or in the willingness

of local education to respond to demand from either pupils or parents' (p.17). Hough found significantly higher per pupil expenditures in grammar and technical school over secondary moderns, in upper schools over high schools, in comprehensive 11 to 16 over middle schools and in comprehensive 11 to 18 (even after weighting for the higher costs of sixth form provision) over comprehensive 11 to 16 schools. In each of these cases, Hough argued, the reasons for the disparity were 'so obvious as to require no further comment'. (p.129). In other words, cost factors such as the greater cost of resourcing the curriculum for older age groups and differential subject costs are the main cause of school-by-school variations. Hough also found, however, that '... within any one group of broadly comparable schools within any one LEA in any one year, average cost per pupil usually differs greatly from one school to another; in a number of cases (by) twice or three times as much ....' (p.140). These variations were not accounted for.

The problem for Hough is that by dismissing the possibility of policy choice being an influence on inter-school variation, he cuts himself off from a possible explanation. Thus, in one of his LEAs, per pupil expenditures in comprehensive schools overtook grammar schools and forged ahead (p.129). This may well have been a result of polcy choice. Hough is not alone in his approach. Knight (1983) finds 'the bunching of unit costs...in similar schools' (p. 50), similar meaning similar in terms of size and 'stage of development'; 'discrepant' results are easily explicable 'given a reasonable knowledge of the schools in one's own education authority' (*ibid*). But Knight goes on to argue that the operation of non-cost factors may be important. For example, history and inertia are identified by Knight as being two of the most powerful forces affecting the structure of school costs. Neither does he exclude the operation of political forces, 'less...the debate at elections and more...local pressures between elections. A strong councillor can affect cost-structures considerably. So can trade unions in relation to wage settlements, manning levels and other cost items. There are other less obvious demand forces -

the influential officer or department, influential governors or heads, PTA and former pupil lobbies' (p.73). Not surprisingly, Knight's 'overriding impression is of historical diversity and arbitrary irregularity - the unacceptable face of local autonomy' (p. 45).

Finally, mention must be made of the studies undertaken by HMI and the DES which have focused on the curriculum. In two national surveys of samples of secondary schools in England undertaken during 1975-78 and 1982-1986, HMI (DES/HMI, 1979 and 1988) outline average curriculum structures and give some indication of the degree of variation in different subject areas. For years 1 to 3 HMI found that most pupils for most of the time followed 'substantially the same programme of subjects' (DES/HMI, 1979, p.19) after which point a 'large and nearly always complex system of options' (p.14) came into operation. These results were still apparent in the 1980s, and the 1988 report notes the 'considerable variation between schools in the number of subjects offered' (DES/HMI, 1988, p.4). But variation is not explored systematically between LEAs and schools. Similarly, the two national staffing surveys (DES, 1980b, 1987) indicate average curriculum profiles for England but do not indicate the nature of variations from this norm.

(ii) A number of researchers have attempted to link inter-school variation to variation in attainment. Eileen Byrne (1974) analysed the allocation of resources in three LEAs over the period 1945-1965 and found that a 'combination of basic inequality of resources in the 1940s and of subsequent discriminal educational planning of "rational" building, financial and staffing resources, created a cycle of deprivation which was reinforced over the years' (p.304). This cycle was most acute for 'secondary modern pupils in small schools in the poorer authorities and notably in the rural areas' (*ibid*). Most importantly, there was a 'consistent and disturbing' (*ibid*) relationship between poor provision and under-achievement. A school leaver's opportunities thus depended on:

- his/her sex;
- whether he/she attended a grammar or non-grammar school;
- whether he/she attended an urban or rural school;
- whether he/she attended a large of small school (p.286).

In a subsequent paper, Byrne (1975) attributes the 'cycle of deprivation' to the '... implicit acceptance of inherited unexamined social and educational assumptions ...'. As a result, '... proportionately more, better and different resources were generally held [by officers and teachers] to be *automatically* necessary for respectively, able and less able pupils; urban and rural pupils; older and younger pupils; and boys and girls ... a less able girl in a rural school had a triple chance of deprivation' (her emphasis).

Williamson and Byrne (1977) sought to confirm that these processes could take place through their study of education in Sunderland during its transition from a tripartite to a comprehensive system during the late 1960s and early 1970s. Williamson and Byrne set out to examine the 'political character of decision-making in education' in terms of class relationships in order to 'generate a new set of questions about the social structure of educational attainment.' This was part of the longer project outlined in the previous section. Williamson and Byrne (1977) claim their study 'lend(s) further weight to the general and well-known association between educational attainment and social class but ... in a way which implicates the structure of schooling itself as a decisive explanatory variable.' A close reading of their work reveals that this claim is very hard to sustain. Indeed, the strength of Williamson and Byrne's own claims seems to vacillate. At one point they soberly argue for 'some slight evidence of a spatial correspondence between the catchment area of a school and its quality which works to the disadvantage of working class children,' whilst elsewhere they claim this correspondence is 'too strong to be dismissed.' Their central problem here is that, as they state, they are quite unable to say 'just how far levels of provision make a difference' since they have no

adequate measure of socio-economic background. The key factor at work which leads them to their conclusions is the fact that Sunderland's secondary schools were smaller than its grammar schools and therefore unable to provide as wide a range of courses. No explanation is offered as to why this is so. Moreover, Williamson and Byrne are plainly selective in their interpretation of their correlations. Although factors such as PTRs are 'not significantly correlated with anything', this is casually dismissed on the grounds that 'correlation studies of this kind' inevitably 'contradict some conventional wisdom.' It is hard not to conclude that they fail to prove their case; it would seem to be based on the same act of faith as their LEA level study.

Using similar methods to Williamson and Byrne - product moment correlations - King (1974) produces quite different results. This time allowing for socio-economic background, King demonstrates the absence of any relationship between resources and attainment at school level. Unfortunately King's results are based on a sample of just 16 schools, so care has to be taken in their interpretation. More satisfactorily from this point of view is Hough's (1985) paper which examines resource-attainment relationships for 30 schools in one LEA over a three year period, though this suffers from the disadvantage of being able to use only one measure of provision: total recurrent expenditure per pupil. Hough found that 'no meaningful conclusions can be drawn regarding linkage between expenditure per pupil and external exam success at the level of individual schools.' Over the three years, 'the regression results are confusing in the extreme': in 1979 the coefficients are positive, in 1981 negative.

(iii) The two groups of studies just described lie largely in the field of political science. A different set of researchers have been concerned to analyse the effectiveness or otherwise of schools themselves, abstracted from their political context. These studies are large, technically complex and have generated considerable controversy and it is not intended to discuss them

in detail. However, they do raise some key issues for the question of educational variation and it is these which shall be concentrated upon.

Current debate in this area stems from Jencks *et al*'s (1972) major study of a sample of US schoolchildren. This analysis purported to demonstrate the inability of schools to correct inequalities rooted in the under society. Jencks *et al* concluded that 'additional school expenditures are unlikely to increase achievements' and that 'equalizing the quality of high schools would reduce cognitive inequality by one per cent or less' (p.109). Despite their specific US grounding, the conclusions seemed to be taken as an indictment of schools everywhere. In Britain, they led to Rutter *et al*'s (1979) now famous *Fifteen Thousand Hours*. This study examined the effect of no less than 46 school 'process' variables on four outcome measures involving a longitudial study of 1487 pupils in 12 secondary schools. Though their results are complicated, Rutter *et al* demonstrated that schools could affect outcomes. Their study represented a major step forward insofar as it moved away from the use of exam results to look at other outcomes such as attendance and away from a reliance on school provision variables to look at processes. They found that process was more important in affecting outcomes than simple provision inputs, although, as they admitted, their study was 'not designed to focus specifically on factors of this kind' (p.105).

Rutter *et al*'s work has attracted major criticisms (e.g. Acton, 1980; Goldstein, 1980; Heath and Clifford, 1980; Reynolds *et al*, 1980). Goldstein (1980) finds evidence of 'a less than fully competent technical expertise', whilst Reynolds *et al* (1980) accuse the authors of having 'buried their own understanding of the school-society relation beneath an untidy heap of regressions and correlations'. Nonetheless, Rutter *et al* has stimulated much new interest (see Reynolds, 1985) and further studies along similar lines. Mortimore *et al* (1988) and Smith and Tomlinson (1989) both use longitudinal studies of changes in pupil attainment on entering and leaving school, the former for

junior, the latter for secondary schools. The studies are carefully considered and the conclusions laudably nuanced. Both find important school effects.

3.5 Lessons from the school-level studies

It is clear from the above studies that it has proved difficult to account for variations in provision between schools and to trace their consequences. Though significant variations have been identified, an important part of that variation remains unaccounted for. Byrne (1974; 1975) and Williamson and Byrne (1977) attribute the variation to discriminatory policies on the part of officers and politicians but it is significant that their studies both relate to periods when tripartite systems were either in operation or in the process of being replaced. In these circumstances, it is not surprising if structured variations could be identified since they were, in large measure, endemic; nor is it surprising that they could be associated with attainment. More fundamentally, this is not necessarily the way educational inequality manifests itself.

Although Bondi (1988) has shown the possibility of bias in school closure, I want to argue that in day-to-day operations political processes are much less likely to operate. Political debates have tended to centre on questions of organisation, not least comprehensivisation, rather than resource allocation, and still less the curriculum (see Chapter 2). Rich (1979) has shown that 'local elites have little reason to be disappointed at seeing a roughly equal distribution of limited resources. Such a distribution poses no threat to the advantage they enjoy in the private sector'. In education, it is the private possession of both physical and cultural resources which confers advantage. Such inequality as there is may, at most, be 'unstructured' (Lineberry, 1977). In this context local officers can make allocations of resources on the 'squeaky wheel principle'.

Tunley *et al* (1979) and Hough (1981) attribute variation to cost differences and to the unintended consequences of resource allocation processes. There seems to be, however, insufficient consideration given to the nature of different types of expenditure. Thus building costs and teaching costs are all treated in the same way, with little consideration given to the reasons which might be behind their variation, and irrespective of their importance to the education process.

As far as the effect of provision variation on attainment is concerned, the weight of opinion would seem to be in favour of a more complex relationship than simple regression analyses can model. The school effect studies have demonstrated the importance of looking at the complex field of school processes. Although these studies have cast doubt on the importance of basic resource inputs to schools, other types of studies suggest that resources are an important factor. For example, subjective analysis of individual classes and children by HMI has led to the following conclusion:

> 'Though the relationship between quality of work and levels of resources is acknowledged to be complex and direct causal links impossible to make...there is a statistically significant association between satisfactory or better levels of appropriate resources and work of sound quality and between unsatisfactory levels of resources and poor quality work.' (DES/HMI, 1986, p.6).

This admirably demonstrates the point that whilst the school effect studies show the importance of this level of analysis, other types of study, based on detailed judgements and observations rather than large-scale statistical modelling are also necessary.

Despite a growing body of research, little is known about who actually makes use of which school resources and the results they achieve. 'To get nearer to this', writes Reid (1986, p.230), 'we should need much more sophisticated studies,

especially investigations into the resources received by different types of pupils within schools. At present we are more informed by assumptions than knowledge. It may be, for example, that the deployment of staff, facilities and curriculum means that resources/costs per secondary pupil decline with ability down to but not including, the remedial level, and follow the status hierarchy of the curriculum, which in turn reflects social class, sex and ethnic group differences; but this has yet to be explored on any scale'. As Goldstein (1984b) argues, a hierarchical research design is needed which moves from a sample of LEAs, to a sample of schools, to a sample of classes and ultimately a sample of pupils. Such a design allows the identification of those characteristics at each level of the education system which affect the opportunities available to pupils.

3.6 Conclusions

This chapter has reviewed the main previous studies of variation in education resources and curricula *between* and *within* LEAs. The discussion highlights the gaps that exist in previous work and in particular shows the need:

(a) to develop a framework based on the relationships between actors in the service which takes into account the three levels at which decisions are made regarding the allocation of resources (central government, LEA and school). This framework has already been detailed in Chapter 2.

(b) to analyse in detail how resources are distributed between LEAs and the patterns which are produced which draws on this framework and is not tied to a predetermined statistical approach.

(c) to analyse the deployment of resources within LEAs and the nature of variations in school costs.

(d) to take into account the importance of school processes.

These conclusions indicate that successful assessment of variation must incorporate the analysis of variations in the deployment of resources in *schools*. The most important manifestation of this is through the deployment of teaching staff in the curriculum. The discussion of this chapter has, therefore, led to the basis for the empirical chapters that follow in highlighting the essential link of educational variations to resources through curriculum decisions.

This chapter has shown that the curriculum has never formed the core of an analysis of educational variation. At LEA level, the data have simply not existed until very recently. However, even if it had been available, it would have been difficult to incorporate into the traditional mode of analysis (statistical regression). Moreover, the central concern of studies of central-local relations with the financial aspects of these relationships reinforces the tendency to be concerned with variations in spending (i.e. an input), making it unlikely that the curriculum (a measure of *process*) would have been the centre of attention. At school level, there have been no analyses of the nature of curriculum variation within LEAs. The study of the curriculum as a whole has, indeed, hardly occurred at all (see Chapter 8). Yet the curriculum offers the potential to explore variation beyond simple variations in expenditures, to move towards an appreciation of the subtleties of educational differences connected to the educational *process*. The analysis of the curriculum completes the hierarchical structure of the analysis since it is the outcome of the deployment of resources *within schools*.

CHAPTER 4: METHODOLOGY

4.1 Implications of Chapters 2 and 3

The review of the changing context for education presented in the foregoing chapters has argued that a major, and neglected, focus of previous work has been the examination of two key policy outcomes: (1) resources and unit costs; and (2) the curriculum. Resources have been conceptualized as essentially a cascade from central government through LEAs to schools. At each of these three levels decisions are made regarding the distribution of resources. The 1980s have been a time of major change in these distributions.

The following chapters of this thesis address these issues by examining the impact of changes to the central block grant system on the distribution of resources between different types of LEA. This elucidates the nature and consequences of the changing context within which different LEAs have been working. To examine the nature of resource allocation within LEAs, it also presents an analysis of the distribution of the most important educational resource - teaching staff - and, for one LEA, an analysis of the distribution of unit costs amongst schools.

The discussion of the curriculum has highlighted the large element of local discretion at LEA level, but primarily at school level, which has existed since the 1944 Education Act. This discretion has given rise to variations in the curriculum between LEAs and between schools within LEAs but the nature of these differences has never been empirically established.

These chapters have provided the motivation for the thesis. In this chapter I present the methodology that underpins the empirical work.

4.2 Operationalisation

Because the resource-cost-curriculum process involves an intricate cascade between the three levels of government, LEA and school, successful analysis can only be undertaken by detailed discussion of each level. Clearly complete coverage of all three levels is not possible within the scope of a thesis. Instead, a case study approach is adopted. This is based on using four contrasted LEAs which are each examined within the context of changing government policy. Within each LEA the secondary schools are examined in detail. The case study approach chosen does *not* use a detailed description of each LEA in terms of the questions which have been identified above. Instead, the focus is upon what the different types of LEAs tell us about the central features of variation in resources and the curriculum. They provide a means of unlocking the complex interactions between the two over space and time. The LEAs selected are:

- Cambridgeshire;
- Leicestershire;
- Newham;
- Sheffield.

These were chosen to represent different types of socio-economic and political situations which are discussed in Section 4.4.

A number of data sources are used:

(a) for the analysis of resource change the national expenditure data produced for each LEA by the Chartered Instituted of Public Finance and Accountancy (CIPFA) has been used. This provides the basis for the assessment of the varied fiscal pressures under which different LEAs have been operating and for an evaluation of changes in expenditure in real terms using unpublished deflators constructed by Lincolnshire County Council for use in the annual calculation of RSG.

(b) informal unstructured interviews with senior officers provided important background information on the education service in each of the LEAs. In the case of Cambridgeshire, close collaboration with the authority was possible because of the nature of the collaborative studentship (CASS) award from the ESRC under which this research was carried out. This formal relationship also made access to other information much easier than in other authorities and this is reflected in the fact that the database for Cambridgeshire is more extensive.

(c) in order to obtain important contextual information on resources, management and the curriculum, a postal questionnaire survey of all secondary schools was carried out with the cooperation of three of the LEAs (Cambridgeshire, Sheffield and Newham). In the fourth LEA (Leicestershire), it was not possible to obtain the cooperation of the LEA for a full survey. Instead a series of semi-structured interviews were carried out with deputy headteachers in six schools. Unfortunately, less extensive information was gathered through this method and the discussion derived from this is of necessity not as complete as that for the other LEAs. But many of the insights generated from these interviews assist our understanding of processes in all the LEAs in the sample.

(d) detailed analyses of individual school unit costs was possible in Cambridgeshire. Problems of both political sensitivity and data availability prevented the same information from being obtained in the other three LEAs.

(e) data on the curriculum were derived from returns made by secondary schools to their respective LEAs in 1986/7. This provided information on the number of time periods provided for each subject and the number of groups receiving each subject. In none of the LEAs had these data been subject to systematic analyses of the type carried out here. The curriculum data were available for virtually every school in each authority. Non-returns and incorrectly completed returns produced the following response rates:

- Cambridgeshire: 98% (41 out of 42)
- Leicestershire: 93% (74 out of 80)
- Newham: 94% (15 out of 16)
- Sheffield: 94% (34 out of 36)

Whilst all LEAs were able to provide data for 1986/7, only two (Cambridgeshire and Sheffield) had been collecting the data for long enough to permit an analysis of how the curriculum had changed over time. Cambridgeshire had started collecting curriculum data in 1982/83, so this provides a comparative earlier year in this instance. Sheffield, however, began in the mid-1970s; 1979/80 was taken as the point for temporal comparison.

Further details on the form of the data and how they are used are provided at the appropriate points in each chapter. Table 4.1, however, summarises the availability of data by LEA.

4.3 Structure of the analysis in the thesis

The remainder of the thesis is structured as follows. The remainder of this chapter places the four LEAs in context, showing how they fit into the national picture of resources, socio-economic background and education policy using secondary material, and presenting descriptions of their socio-economic and political backgrounds and educational context. From here the thesis moves on in Chapter 5 to present the results of the original survey of schools in three of the LEAs and of the interviews in the fourth. This establishes the context of changes in the management of resources and the curriculum.

Chapter 6 examines how different types of authority and the four LEAs have been affected by the changed financial environment and how variations in their policies regarding educational expenditure and the management of change have affected provision. Chapter 7 moves the analysis of resources to the school level. It describes the nature of variation in the

Table 4.1
Case study data availability

	Author's contextual survey	LEA level expenditure data	School staffing data	School background data	School unit costs	Curriculum data: 1986/7	Curriculum data: earlier year
Cambridgeshire	✓	✓	✓	✓	✓	✓	1982/3
Leicestershire	—	✓	✓	✓	—	✓	—
Newham	✓	✓	✓	✓	—	✓	—
Sheffield	✓	✓	✓	✓	—	✓	1979/80

distribution of teaching staff amongst secondary schools in the case study areas and examines the relationship of the large variations observed to school background, size and other local factors. It also analyses for one LEA (Cambridgeshire) the distribution of a complete set of educational costs and explores the relationships between the large variations which are discussed and factors which might be hypothesised to affect them.

Chapters 8 and 9 move the discussion forward to examine the curriculum. Chapter 8 analyses the nature of variations in the curriculum. It draws out the differences in priority accorded to different parts of the curriculum in terms of the staffing committed to different groups of subjects and shows how these priorities change between year groups. It also shows how the curriculum varies between LEAs and, for two LEAs, over time. In Chapter 9 the focus moves again to the schools within the LEAs. The LEAs have very different approaches to education and to how schools are resourced, and there are substantial variations between schools in curriculum structure. This chapter looks at the extent to which the curriculum is related to school background and resources, drawing upon the results of Chapter 7. Chapter 10 draws the results of the different chapters together and considers their implications for current developments.

4.4 Case studies in the national context

The case study LEAs were chosen for their contrasting backgrounds. Cambridgeshire and Leicestershire are both shire counties but illustrate different urban structures. Cambridgeshire contains Peterborough new town and the booming but small economy of Cambridge, whilst Leicestershire represents an economy dominated by its free-standing urban centre which exhibits many of the problems associated with larger cities. This leads to sharply drawn urban-rural contrasts. Politically the two authorities were both Conservative until the 1980s, when swings away from the Tories signalled the advent of a Conservative-Alliance coalition in Cambridgeshire and a hung

council in Leicestershire. Sheffield represents a large Labour urban authority. Newham is illustrative of some of the unique difficulties faced by London authorities and has had Labour councils since its inception in 1965.

The key contrasts between the authorities are usefully drawn out by a cluster analysis carried out by Lord (1984) of six variables used by the DES in its calculation of additional educational need for grant purposes. Table 4.2 shows that the selected LEAs fall across the range of the variables. Newham emerges as the most disadvantaged authority, whilst Sheffield scores an average mark on all the variables. Leicestershire's above average scale on Variable 1 is indicative of Leicester's large ethnic minority population and its average score on all six variables, compared to Cambridgeshire's below average score, indicative of its different urban structure.

4.5 Case study backgrounds

Cambridgeshire

Cambridgeshire has, until very recently, been a predominantly rural economy. Until 1974 the main urban focus was Cambridge, essentially a market town. Unlike most market towns, however, the economy of Cambridge has been buoyed up by its university, integral to its development since the Middle Ages. In 1974 the boundary commission pushed out the county's borders to encompass Huntingdonshire in the west and Peterborough in the north. With its new town status, Peterborough has transformed the economy of the north of the county but has also brought with it new social and educational needs not least as a result of the nature of its London overspill population, including its large ethnic minority component. Meanwhile the 1980s have seen a boom for the Cambridge economy, benefiting from improved road and rail connections to London and the establishment of its science park. These changes have together accentuated the social and economic contrasts in the county, but they have also meant that falling rolls have scarcely been a problem compared to other areas and,

Table 4.2
Relative positions of the case studies on national socio-economic indicators.

		VARIABLE 1		
		Above average	*Average*	*Below average*
ALL VARIABLES	*Above average*	Newham		
	Average	Leics.	Sheffield	
	Below average			Cambs.

Key:

Variable 1: % of children born outside UK or belonging to non-white ethnic groups

Variable 2: % of children living in households whose head is semi- or unskilled manual worker or farm worker

Variable 3: % of children living in households lacking exclusive use of one or more standard amenities, or living in households at a density of >1.5 persons per room

Variable 4: % of children in one-parent families

Variable 5: % of children in families with four or more children

Variable 6: % of children receiving free school meals

Source: Lord (1984)

with this pre-occupation removed, there has been a room for educational development not found elsewhere.

Politically, Cambridgeshire has been dominated by the Conservatives for most of the post-war period. However, this has not meant a doctrinaire Conservatism for the authority. Rather, the approach has been a pragmatic traditional shire Tory approach which stresses good service provision; interviews in the authority revealed that Cambridgeshire has been run by what one officer termed a 'managerial party'. In the 1980s electoral shifts threatened the Tory hegemony with a massive swing to the Alliance in 1985 leaving no one party with an overall majority. The emphasis on sound management remained.

In common with most other authorities there has been a lack of member intervention in education in the post-war period. Key decisions were left to professional educators which meant there was no curriculum policy as such and this has continued into the 1980s with the shifts in political control having little impact on the key aspects of education provision. The lack of political intervention has given free rein to what is nationally the most important aspect of education in Cambridgeshire: the village college concept. Conceived by the then local Secretary of Education, Henry Morris, in the 1920s, village colleges (previously secondary schools) were designed to provide a focus for life in the villages of Cambridgeshire by providing classes for adults and acting as community centres. The idea prefigured the educational concepts later to be adopted for inner city areas as community schools (cf Plowden Report, 1967) and has spawned its own movement (see Rée, 1984, pp.141-144). Generally considered a success, the community school or college designation is still being extended to those areas which only came within Cambridgeshire's ambit in 1974. The county became comprehensive upon reorganisation in 1974.

The progressive traditions of Cambridgeshire have found a different outlet in the 1980s. The county has been one of the first authorities to pilot local financial management (LFM) for

schools (see Downes, 1988). Beginning in 1982, the county gave a set of pilot secondary schools responsibility for the majority of their budgets. This has since been extended to all schools in advance of national legislation compelling all authorities to do so (Education Reform Act, 1988). Whilst the full impact of these developments is yet to be felt, the experience of the county provides important early indicators of the radical changes in school and LEA management entailed in LFM.

Leicestershire

Leicestershire

> Is a fine pleasant inland county...abounds with corn and good pasture and is remarkable for beans and peas for Horses, which thrive there best of any county in England; it is also eminent for large Sheep, which produce Abundance of Wool and the largest in the kingdom'. George Fisher (1782, p.272) *Young Man's Best Companion.*

This idyllic picture of Leicestershire underwent something of a transformation with the industrial revolution when the local economy came to be dominated by Leicester. Built on a diverse range of industries, not least textiles, the city now numbers a population of over 280,000, and is host to a significant ethnic minority community which comprises nearly one quarter of the population. Despite, or perhaps because of the pre-eminence of Leicester as an economic centre, a unified county authority is a very recent phenomenon: the shire has staunchly maintained the independence of its rural traditions against the economic dominance of the city. Because of this, the county entered the post-war period with responsibility for education split between the shire and the borough of Leicester and this continued until reorganisation in 1974. This had very important consequences for the structure of education provision in the county for the two authorities had very different approaches to the service. Because of its importance to later discussion in this thesis, it is necessary to outline the history of education in the county in some detail.

The key to the difference between the city and the county lay in the nature of the political debates surrounding schooling which emerged in the city and the county with comprehensivisation (Rimmington, 1984). Whilst the Tory-controlled shire moved ahead with a progressive and radical new approach to comprehensive education, the city ossified, caught by the swings of the electoral pendulum and by senior old-guard Labour councillors who sided with the Conservatives in supporting the tripartite system. The key to change lay with Leicestershire's CEO, Stewart Mason, who rid the county of selection through what has been described as 'real political genius' (*ibid* p.9) in order that the arts might flourish in the less competitive atmosphere of the comprehensives. Mason's genius lay in his scheme for reorganisation which managed to usher in a comprehensivisation devoid of party political overtones. What started as the Leicestershire Experiment in 1957, and became the Leicestershire Plan in 1959, involved the conversion of the secondary moderns to 'High Schools' serving 11 to 13 year olds and the grammars to 'Upper Schools' serving 14 to 18 year olds (Mason, 1957). By 1969 all schools had been reorganised on this pattern. The system has a number of advantages on the conventional structure, including the removal of the overwhelming influence of examinations on the lower secondary years, the chance for pupils to make a fresh start on transfer, and the ability to offer a wide range of courses, especially at 16+, without the need for huge intakes (see Fairbairn, 1980).

Despite these advantages, the city continued to maintain its independence even after reorganisation in 1974. When its schools were finally reorganised after years of contention, most schools became 11-16s, with the grammar and technical schools being converted to sixth form colleges, which defused the opposition of the tripartite lobby. Consequently, Leicestershire now embraces two systems of schools:

- in the city and in Rutland, which the county was also given jurisdiction over in 1974, 11-16 and 11-18 schools and colleges provide secondary education

- in the county there is the system of Highs and Uppers.

In addition to Leicestershire's pioneering approach to secondary education, the county has also embraced the community education idea. Rée (1984) notes that, before coming to Leicestershire, Mason was an HMI in Cambridgeshire and a 'friend and admirer' (p.142) of Henry Morris. Leicestershire inaugurated its first community college in 1954 and in the early 1970s began to develop the primary schools along similar lines. Together with Coventry and Cambridgeshire, Leicestershire is considered by Rée (1984, p.142) to be the leader in the field of community education.

Leicestershire has a holistic approach to schooling which recognises the links between organisation and the curriculum. The tradition of development of the visual and performing arts established under Mason continues, and the authority has played a leading role in new initiatives. For example, it was one of the first authorities involved in TVEI. The reorganisation of education under Mason was considered by his successor, Andrew Fairbairn, to be but the first step in developing a 'curriculum and pastoral structure to match the wider and deeper expectations' generated by the abolition of selection (Fairbairn, 1980, p.2). The award-winning Countesthorpe College represents an innovative approach to the integration of building design, mode of organisation and the curriculum. This principle is governing the development of provision throughout the county. The county has also had to respond to the large ethnic minority community which has grown in Leicester since the war. This has placed new demands on education to respond to the specific needs of this important disadvantaged group.

Politically, the 1974 reorganisation and the misfortunes of the Labour government of 1974-79 ensured a huge Tory majority on the council by the 1980s. However, there was a major swing away from the Conservatives in May 1981, leaving the council hung and the Liberals, with just five seats, holding the balance of

power. The new Alliance party made further gains in 1985, consolidating its position as holder of the key to control. These changes had important repercussions for the resourcing of education which are described in Chapter 6 and stands in contrast to Cambridgeshire.

Newham

Newham, located in East London, is one of the most deprived local authorities in Britain. Although usually classed as an Outer London Borough, it has many of the characteristics of deprived Inner London Boroughs and inner cities as a whole. It has a large ethnic minority population and for a number of schools ethnic groups comprise the majority of the pupils. It is a very small borough, comprising only 16 secondary schools, and its deprivation, unlike that of some other London boroughs, is unrelieved by any area of significant wealth. The gentrification which has taken place in parts of London has largely passed the borough by. The 1980s have seen an accentuation of its inner city problems. The local economy was dependent on the Royal Docks to the south and the closure of these in the early 1980s led to a sharp rise in unemployment. Growth in employment in the City and Docklands, just a few miles to the west, has so far failed to involve the local population; it is only recently that plans to redevelop the docks have offered the prospect of economic and social improvement but this will bear fruit only in the 1990's. The vicious circle of deprivation and low expectations on the part of parents, pupils and teachers continues to ensure that Newham has one of the lowest rates of educational attainment in the country.

Newham has been a Labour authority since its constitution from East and West Ham in 1965. The 1986 council elections placed the authority in the unique position of having no non-Labour members at all. In common with many other Labour authorities, Newham adopted a confrontational stance with respect to the first two Thatcher administrations. It resisted central attempts to curtail its expenditure and refused to engineer a

reduction in teaching staff in line with falling pupil numbers. It also refused to countenance involvement in new central government initiatives which could have been of benefit to its schools. With the Conservative election victory of 1987, however, a mood of 'new realism' has befallen most Labour authorities and Newham has been able to take part in both TVEI (though very belatedly) and Compact.

Because of the lack of formal political opposition on its council, Newham has avoided the controversies associated with educational policy which have befallen authorities such as Brent and Haringey but has instead been prone to factional politics and ward interests. These have had serious detrimental consequences for the management of education in the borough. A recent report commissioned by the council to examine the causes of low educational achievement in Newham (London Borough of Newham, 1989) found the management of the service 'beset with difficulties for a number of years': officers had been subject to 'unreasonable demands by members' who had failed 'to provide adequate resources to implement policies, ... to back officers in the defence of unpopular policies' and who had even engaged in 'public denunciation of officers' (p.185). Officers, for their part, had been guilty of 'poor management, indecisiveness and lack of vision' (*ibid*). The report concluded that Newham had suffered from 'substantial mismanagement' (*ibid*).

In this context it is scarcely surprising if the authority has had difficulties coming to grips with the considerable educational problems facing it. It still faces the typical inner city problems of ageing school building stock and an out-moded form of school organisation (six of its 16 secondary schools are single sex and there are three Church schools). The Labour Party committed itself to a number of initiatives in its manifesto, *Labour in Newham 1986-90*, including community education, anti-racism and anti-sexism, equal opportunities and special needs and integration. But the authority has lacked the management capability to ensure their successful implementation in a coherent framework (London Borough of Newham, 1989, p.217)

and, despite the fact that the manifest advantages to be gained from community education have been known for many years, only one school has been designated a community college. The planned reorganisation of post-16 education in the borough is only now going to take place in 1992 despite many years of consultation: as a result, post-16 provision still occurs in all schools and through consortia arrangements, at a major cost to the LEA and a major disbenefit to pupils.

Sheffield

Sheffield is an urban authority of contrasts. It contains wards with some of the most and some of the least educated populations in the country. But it is primarily a white, working class authority. The proportion of the population from ethnic minority backgrounds is less than the national average, whilst the proportion of households whose head is semi- or unskilled is higher than the national average. Throughout the 1980s approximately two-thirds of council seats have been Labour. During the first half of the 1980s, the authority suffered from Conservative policies with respect to local government and from the sudden collapse of the economic base provided by its special steels industry. The combined effects of these, along with the development of a radical left wing in the Labour party, led to Sheffield becoming a champion of 'local socialism'. For a number of years it was in the vanguard of attempts by local Labour councils to mitigate, in their view, the worst effects of Thatcherism and provide an alternative economic vision. This led to a high public profile for the council nationally and ultimately to its being rate-capped. The 'new realism' which has set in since the 1987 Conservative general election has meant the superceding of old 'alternative' policies by notions of partnership with local business to rejuvenate the city's economy. The authority is now in the vanguard of the development of education-business partnerships.

Sheffield has a tradition of innovative approaches to education provision. It became comprehensive in 1969. At that time it

was decided to adopt the progressive policy of organising the primary sector into first and middle schools, with transfer to secondaries at the age of 12. Unfortunately, due to the financial cost of remodelling old schools and building new ones, spread of the scheme has been held back and over two-thirds of secondary schools still have intakes at age 11. At the post-16 level, the LEA has recently introduced a tertiary system, though following the Secretary of State's upholding of objections from parents of pupils at schools in its wealthier suburbs, the authority has had to retain some sixth forms in this area. Prior to this, all but one secondary school had been grouped into consortia linked to FE colleges in order to provide a wider range of post-16 courses than would otherwise have been possible.

Being an authority of contrasts, Sheffield LEA has been aware of the greater difficulties experienced by some of its more deprived pupils. In an attempt to counteract these, it has, for a number of years, allocated additional resources (staff and capitation) to schools in the most disadvangaged areas of the city.

Most recently, Sheffield has turned its attention to the curriculum. An HMI report (DES/HMI, 1987b) notes that until recently 'there were few LEA curricular guidelines' in Sheffield but that in response to DES Circular 6/81 'draft policy statements...were produced for most curricular areas ...and...discussed with schools' (p.5). This is a pattern typical of most authorities. However, Sheffield has since moved further ahead, producing a curriculum policy statement in which schools are encouraged to review regularly aspects of the curriculum and to review the entire curriculum at least once every seven years (City of Sheffield, undated). Perhaps more significantly, the authority has developed its own innovatory Schools Curriculum Initiative. This builds on its tradition of encouraging schools to develop their own curricula by seeking to establish structures for the involvement of the whole community in curriculum development. This is being closely interwoven

with other developments such as TVEI and the education-business partnership into a strategy whose full ramifications have yet to become clear. Interviews with officers have revealed that Sheffield's approach is now to establish policies which are at once consonant with national requirements and which satisfy local needs. It has developed a wide-ranging approach and a vision to educational policy which is placing it in the forefront of new developments. Key to this has been the city's CEO, Bill Walton, who has emerged as an important figure in the shaping of national policy.

CHAPTER 5: THE CONTEXTUAL SURVEYS OF THE MANAGEMENT OF RESOURCES AND THE CURRICULUM

5.1 Survey design

In order to obtain much more detailed information on the management of resources and the curriculum than it was possible to obtain from interviews with LEA officers and from secondary sources, a postal questionnaire survey was drawn up to be completed by the headteachers of secondary schools. It was hoped that it would be possible to carry out the survey in all four LEAs. However, in order to raise the response rate it was decided to work through the LEAs in the four areas, rather than sending a survey out independently. This encountered the problem that officers in Leicestershire were reluctant to place additional burdens upon their headteachers. Consequently, the survey was replaced in Leicestershire by a series of interviews with deputy headteachers in a sample of schools and this is dealt with separately below (Section 5.5). In Cambridgeshire and Sheffield the survey was despatched through the LEA central office with covering letters from senior officers. In Newham, despatch and covering letters were supplied by the author with the support of the LEA. All the data collation and analysis in all the LEAs was conducted by the author.

The survey was drafted in the latter part of 1987 and carried out in the period January-March 1988. An essential part of the drafting process was piloting of the survey with senior officers in the three LEAs taking part; this allowed officers to express their opinions on the suitability of the questions and the overall structure of the survey. This iterative process led to the final survey shown in Appendix 1.

The survey was designed to obtain information on resources and resource allocation/decision-making procedures over the period 1979/80 to 1986/87. A balance was sought between the need to keep the survey as simple to complete as possible (hence the

use, wherever possible, of tick boxes) and the need for what was quite detailed information. As with any postal questionnaire, some parts of the questionnaire proved more difficult to complete than others and were therefore less successful in respect of response rate. Information on decision-making processes is particularly difficult to obtain through the tick box format of a questionnaire of this sort. However, the intention was to produce a broad overview of the nature of changes in resource allocation, not detailed descriptions, and the survey was perfectly adequate for this purpose. In the case of Leicestershire, more detailed exploration of decision-making was possible and the information obtained has implications for all the authorities.

It was decided to survey individual institutions as this would provide information on the context of change at the level at which the crucial decisions on resources and the curriculum are taken; only schools could provide the information to the level of detail required. Many of the key questions required heads to make qualitative judgements of recent changes and thus much of the most important information obtained is perceptual. There are obvious problems associated with subjective against objective data, but in this instance subjective assessment was the only means of obtaining the required information. In any case, subjective data has an established history of usage in education, not least, of course, by HMI, and senior staff's perceptions of change are as much a part of the context of developments as more objective data. The data is presented below as summaries across schools in their respective LEAs. The patterns which are revealed represent the sum of a myriad of individual perceptions by senior school staff and for this reason definable trends are all the more significant. The response rates for the survey were as follows (actual numbers in parenthesis):

- Cambridgeshire 45% (19)
- Sheffield 72% (26)
- Newham 56% (9)

Because of the low absolute number of replies received in Newham care clearly has to be exercised in interpreting results. In the sections which follow it is necessary to treat the data for Newham in a slightly different manner to that for Cambridgeshire and Sheffield. This does not, however, prevent comparisons being made between the three authorities.

The results of the survey provide essential contextual information in two key areas:

- changes in resources
- resource allocation processes

Two broad types of resource were covered by the survey: the physical infrastructure; and books, equipment and materials.

5.2 Changes in physical infrastructure

Heads were asked to assess the state of repair of 12 elements of their building stock in 1979/80 and in 1986/87. The five-class scale adopted allowed respondents to pick out those components s/he felt were above or below average. Although heads were asked to make assessments for 1979/80, allowance was made for the fact that they might not have been at their schools long enough to make such an assessment and as early year as possible was accepted. In the following analyses, the focus is upon the general changes in resources up to and including 1986/87, without taking account of the date from which the early assessments were made (although these are indicated at the relevant points in the tables).

Table 5.1 shows the changes in the state of repair of the twelve elements of the building stock in the three areas. 'Deterioration' and 'improvement' is this case refer to all observations, so that a change from 'very good' to 'good' is regarded as a deterioration even though provision remains above average. Similarly, a change from 'very poor' to 'poor' is

Table 5.1
Changes in the physical fabric, by LEA, 1979-1986
(Actual numbers in parenthesis)

CAMBRIDGESHIRE

	% of heads noting deterioration	% of heads noting improvement	n
External repairs	14 (2)	43 (6)	14
Internal decoration	23 (3)	62 (8)	13
Furniture	0 (0)	43 (6)	14
Hall	7 (1)	23 (3)	13
Toilets	14 (2)	21 (3)	14
Classrooms	7 (1)	23 (3)	13
Workshops/crafts rooms	0 (0)	35 (5)	14
Laboratories	7 (1)	29 (4)	14
Home economics rooms	0 (0)	57 (8)	14
Art studios	0 (0)	21 (3)	14
Gyms	0 (0)	21 (3)	14
Changing rooms	7 (1)	21 (3)	14

No. of assessments from years after 1979/80: 0

SHEFFIELD

	% of heads noting deterioration	% of heads noting improvement	n
External repairs	38 (10)	35 (9)	26
Internal decoration	62 (16)	35 (9)	26
Furniture	50 (13)	38 (10)	26
Hall	29 (7)	13 (3)	24
Toilets	46 (12)	23 (6)	26
Classrooms	48 (12)	20 (5)	25
Workshops/crafts rooms	23 (6)	19 (5)	26
Laboratories	29 (7)	21 (5)	24
Home economics rooms	35 (9)	15 (4)	26
Art studios	31 (8)	15 (4)	26
Gyms	50 (13)	12 (3)	26
Changing rooms	42 (11)	15 (4)	26

No. of assessments from years after 1979/80: 4

NEWHAM

	Number of heads:			
	Worse	Same	Better	n
External repairs	1	6	1	8
Internal decoration	1	5	2	8
Furniture	2	5	1	8
Hall	3	3	1	7
Toilets	0	8	0	8
Classrooms	1	6	1	8
Workshops/crafts rooms	1	5	1	7
Laboratories	2	5	1	8
Home economics rooms	1	5	0	6
Art studios	1	6	1	8
Gyms	2	5	1	8
Changing rooms	2	5	1	8

No. of assessments from years after 1979/80: 2

treated as a improvement. Tables 5.2 and 5.3 shed more light on the data. Table 5.2 indicates the proportions of schools in the samples in each LEA with above and below average states of repair in the two assessment years. Table 5.3 indicates the extremes for these data in Cambridgeshire and Sheffield; Newham is excluded because of the small sample size.

In **Cambridgeshire** the proportion of heads noting improvement outstrips the proportion noting a deterioration for each element of the building stock, and for 7 of the 12 elements the most notable feature is the large number of heads noting no change either way (Table 5.1). Home economics rooms and internal decoration show an improvement in over half of the sample schools. These optimistic trends are reinforced in Tables 5.2 and 5.3 where all types of infrastructure show a fall in the percentage of schools with below average states of repair and an accompanying rise in the proportion above. By 1986/87 no more than 37% of sample heads regarded provision in any area as below average and for 9 of the elements the figure was well under one quarter. Moreover, one half or more of all heads regarded the state of repair as above average in no less than five categories.

In **Sheffield** the situation is markedly different to that in Cambridgeshire. Table 5.1 indicates that for every element of the building stock the number of heads registering an improvement is less than the number noting a deterioration. Eight of the elements show an increase in the proportion of schools in which the state of repair is below average, whilst none show a rise in the proportion in which repair is above average (Table 5.2).

For the reasons already noted, it is more difficult to be categorical about the changes in **Newham**. However, the general pattern is one of no significant change either way in any building stock component with the possible exception of halls. Table 5.2 reveals a very mixed pattern. Because of the small numbers involved, it is not possible to draw firm conclusions.

Table 5.2
Changes in the numbers of schools with above and below average states of repair by component of building stock and by LEA, 1979-86

CAMBRIDGESHIRE

Percentage of schools with below average state of repair (actual numbers in parenthesis)

Component	1979	n	1986	n
External repairs	36 (5)	14	11 (2)	19
Internal decoration	43 (6)	14	11 (2)	18
Furniture	36 (5)	14	16 (3)	19
Hall	15 (2)	13	6 (1)	17
Toilets	29 (4)	14	26 (5)	19
Classrooms	14 (2)	14	18 (3)	17
Workshops/craftrooms	21 (3)	14	11 (2)	19
Laboratories	50 (7)	14	26 (5)	19
Home economics rooms	21 (3)	14	5 (1)	19
Art studios	21 (3)	14	0 (0)	19
Gyms	36 (5)	14	21 (4)	19
Changing rooms	57 (8)	14	37 (7)	19

No. of assessments from years after 1979/80: 0

Percentage of schools with above average state of repair (actual numbers in parenthesis)

Component	1979	n	1986	n
External repairs	36 (5)	14	47 (9)	19
Internal decoration	21 (3)	14	50 (9)	18
Furniture	21 (3)	14	32 (6)	19
Hall	46 (6)	13	53 (9)	17
Toilets	14 (2)	14	26 (5)	19
Classrooms	21 (3)	14	53 (9)	17
Workshops/craftrooms	21 (3)	14	42 (8)	19
Laboratories	29 (4)	14	42 (8)	19
Home economics rooms	29 (4)	14	58 (11)	19
Art studios	36 (5)	14	42 (8)	19
Gyms	43 (6)	14	68 (13)	19
Changing rooms	21 (3)	14	32 (6)	19

No. of assessments from years after 1979/80: 0

Table 5.2 contd.

SHEFFIELD

Percentage of schools with below average state of repair (actual numbers in parenthesis)

Component	1979	n	1986	n
External repairs	31 (8)	26	35 (9)	26
Internal decoration	27 (7)	26	50 (13)	26
Furniture	31 (8)	26	35 (9)	26
Hall	21 (5)	24	29 (7)	24
Toilets	27 (7)	26	38 (10)	26
Classrooms	16 (4)	25	32 (8)	25
Workshops/craftrooms	15 (4)	26	4 (1)	26
Laboratories	21 (5)	24	12 (3)	25
Home economics rooms	12 (3)	26	12 (3)	26
Art studios	12 (3)	26	4 (1)	26
Gyms	23 (6)	26	38 (10)	26
Changing rooms	35 (9)	26	54 (14)	26

No. of assessments from years after 1979/80: 4

Percentage of schools with above average state of repair (actual numbers in parenthesis)

Component	1979	n	1986	n
External repairs	35 (9)	26	38 (10)	26
Internal decoration	38 (10)	26	31 (8)	26
Furniture	38 (10)	26	12 (3)	26
Hall	46 (11)	24	38 (9)	24
Toilets	23 (6)	26	15 (4)	26
Classrooms	44 (11)	25	28 (7)	25
Workshops/craftrooms	46 (12)	26	42 (11)	26
Laboratories	42 (10)	24	28 (7)	25
Home economics rooms	65 (17)	26	42 (11)	26
Art studios	54 (14)	26	46 (12)	26
Gyms	50 (13)	26	31 (8)	26
Changing rooms	31 (8)	26	23 (6)	26

No. of assessments from years after 1979/80: 4

Table 5.2 contd.

NEWHAM

Number of schools with below average state of repair

Component	1979	n	1986	n
External repairs	2	8	3	9
Internal decoration	0	8	1	9
Furniture	1	8	3	9
Hall	0	7	2	8
Toilets	3	8	4	9
Classrooms	0	8	1	9
Workshops/craftrooms	0	8	1	8
Laboratories	3	8	4	9
Home economics rooms	2	6	2	7
Art studios	0	8	1	9
Gyms	1	8	0	9
Changing rooms	3	8	4	9

No. of assessments from years after 1979/80: 2

Number of schools with above average state of repair

Component	1979	n	1986	n
External repairs	4	8	3	9
Internal decoration	5	8	5	9
Furniture	4	8	3	9
Hall	4	7	3	8
Toilets	2	8	2	9
Classrooms	4	8	4	9
Workshops/craftrooms	2	8	3	8
Laboratories	3	8	2	9
Home economics rooms	2	6	1	7
Art studios	2	8	2	9
Gyms	4	8	3	9
Changing rooms	2	8	2	9

No. of assessments from years after 1979/80: 2

Table 5.3
Changes in the number of schools with 'worse than poor' and 'better than good' states of repair by building stock component and by LEA, 1979-1986

CAMBRIDGESHIRE

	Worse than poor		Better than good	
	1979	1986	1979	1986
External repairs	1	0	2	2
Internal decoration	1	0	2	2
Furniture	4	1	1	2
Hall	0	0	1	2
Toilets	1	1	1	2
Classrooms	0	0	1	2
Workshops/craftrooms	2	1	1	4
Laboratories	1	1	1	3
Home economics	0	0	1	4
Art studios	0	0	2	3
Gyms	1	0	1	4
Changing rooms	3	3	1	3

No. of assessments from years after 1979/80: 0

SHEFFIELD

	Worse than poor		Better than good	
	1979	1986	1979	1986
External repairs	3	4	1	1
Internal decoration	2	4	1	1
Furniture	2	0	1	0
Hall	0	1	4	1
Toilets	0	2	1	0
Classrooms	0	1	1	0
Workshops/craftrooms	0	0	3	3
Laboratories	1	0	1	0
Home economics	1	1	3	3
Art studios	0	0	4	2
Gyms	0	3	2	4
Changing rooms	1	5	2	2

No. of assessments from years after 1979/80: 4

5.3 Changes in books, equipment and materials

In order to gain insight into the context of changes in resources used directly in the learning process, it was decided that the questionnaire ought to focus on a specific aspect of books, equipment and materials. Consequently, heads were asked to assess the adequacy of the quantities of (i) appropriate books and (ii) appropriate equipment and materials in 1986/87 in 10 areas of the curriculum. These areas parallel the subject groupings used later in the thesis (see Chapter 8) but are not directly equivalent as it was simply not possible to ensure that these areas were interpreted in the same way in different schools. This would have required an exhaustive list of the subjects in each area which would have made the question unworkable. However, piloting had confirmed that there is general agreement as to the meaning of the areas used, so only general guidance was provided as to the types of subject in each area. The results provide a general context of curriculum change which is explored more fully in the main empirical sections of the thesis which deal with the curriculum (Chapters 8 and 9).

A three point scale was adopted which was designed to allow heads to select those broad subject areas in which they perceived their schools to be particularly advantaged or disadvantaged. It also asked them to state if there had been an improvement, a worsening or no change in these aspects of provision between 1979/80 and 1986/7 (or, if this was not possible, from as early as possible, as above). In general, this latter question drew out the differences between subject areas and the LEAs more successfully than the former, which suffered from the problem of central tendency. In addition, the variation between the individual components of the whole curriculum is more significant than the variation between the individual elements of the physical infrastructure.

The trend to improvement apparent in the physical fabric of the secondary schools of **Cambridgeshire** continues in books, equipment and materials (Table 5.4). In book provision, only Humanities shows a higher proportion of schools with poorer provision in 1986/87 than earlier; four subject areas show improvement in more than half the sample schools. However, despite this trend towards amelioration the proportion of schools regarding their book provision as below average exceeds that above average in no less than six subject areas (Table 5.5). In equipment and materials, it is only in English that the number of schools registering deterioration exceeds the number noting improvement (Table 5.6). In terms of standards in 1986/7 most schools regarded their provision as average (Table 5.7).

In **Sheffield** book provision appears to have suffered more than equipment and materials. Book provision has worsened in more schools than it has improved in every subject area except mathematics and computing (Table 5.8) and was regarded as below rather than above average in at least three times as many schools in every subject area (Table 5.9). Equipment and materials have worsened in more schools than they have improved in only two subject areas but in five subject areas the number worsening equals the number improving, evidence of a polarisation (Table 5.10). In seven areas, the number of schools with below average provision exceeds the number above average (Table 5.11).

The results for **Newham** are more conclusive than those for physical infrastructure. In both books and equipment and materials the trend has clearly been either 'no change' or a deterioration (Tables 5.12 and 5.14). In 1986/87 the standard of provision was hardly ever judged to have been above average in any subject area in both books and equipment and materials (Tables 5.13 and 5.15).

In addition to the questions just analysed, the survey also asked respondents to indicate for the ten subject areas whether

Table 5.4
Changes in the standard of book provision in Cambridgeshire, 1979/80-1986/7, by subject area
(actual number in parenthesis)

Subject area	% 'worsened'	% 'improved'	n
English	20 (3)	53 (8)	15
Maths	20 (3)	53 (8)	15
Humanities	33 (5)	27 (4)	15
RE	20 (3)	40 (6)	15
Languages	27 (4)	60 (9)	15
Sciences	33 (5)	53 (8)	15
Physical & Leisure	N/A	N/A	N/A
OSC	20 (3)	33 (5)	15
EPSC	20 (3)	47 (7)	15
Aesthetic	13 (2)	33 (5)	15

No. of assessments from years after 1979/80: 1

Table 5.5
Standard of book provision in Cambridgeshire, 1986/7, by subject area
(actual number in parenthesis)

Subject area	% below average	% above average	n
English	24 (4)	29 (5)	17
Maths	12 (2)	29 (5)	17
Humanities	18 (3)	35 (6)	17
RE	29 (5)	24 (4)	17
Languages	12 (2)	35 (6)	17
Sciences	29 (5)	12 (2)	17
Physical & Leisure	N/A	N/A	N/A
OSC	29 (5)	24 (4)	17
EPSC	18 (3)	0 (0)	17
Aesthetic	35 (6)	6 (1)	17

Table 5.6
Changes in the standard of equipment and materials provision in Cambridgeshire, 1979/80-1986/7, by subject area (actual number in parenthesis)

Subject area	% 'worsened'	% 'improved'	n
English	27 (4)	20 (3)	15
Maths	13 (2)	47 (7)	15
Humanities	13 (2)	33 (5)	15
RE	13 (2)	40 (6)	15
Languages	13 (2)	40 (6)	15
Sciences	29 (4)	43 (6)	14
Physical & Leisure	7 (1)	47 (7)	15
OSC	7 (1)	53 (8)	15
EPSC	0 (0)	47 (7)	15
Aesthetic	7 (1)	53 (8)	15

No. of assessments from years after 1979/80: 1

Table 5.7
Standard of equipment and materials provision in Cambridgeshire, 1986/7, by subject area (actual number in parenthesis)

Subject area	% below average	% above average	n
English	18 (3)	12 (2)	17
Maths	12 (2)	24 (4)	17
Humanities	24 (4)	18 (3)	17
RE	12 (2)	18 (3)	17
Languages	18 (3)	29 (5)	17
Sciences	29 (5)	12 (2)	17
Physical & Leisure	24 (4)	24 (4)	17
OSC	18 (3)	29 (5)	17
EPSC	0 (0)	18 (3)	17
Aesthetic	24 (4)	24 (4)	17

Table 5.8
Changes in the standard of book provision in Sheffield, 1979/80-1986/7, by subject area
(actual number in parenthesis)

Subject area	% 'worsened'	% 'improved'	n
English	44 (11)	24 (6)	25
Maths	44 (11)	52 (13)	25
Humanities	60 (15)	20 (5)	25
RE	48 (11)	13 (3)	23
Languages	52 (13)	16 (4)	25
Sciences	52 (13)	20 (5)	25
Physical & Leisure	N/A	N/A	N/A
OSC	55 (12)	18 (4)	22
EPSC	39 (9)	35 (8)	23
Aesthetic	40 (10)	28 (7)	25

No. of assessments from years after 1979/80: 2

Table 5.9
Standard of book provision in Sheffield, 1986/7, by subject area
(actual number in parenthesis)

Subject area	% below average	% above average	n
English	32 (8)	4 (1)	25
Maths	40 (10)	12 (3)	25
Humanities	40 (10)	8 (2)	25
RE	58 (14)	0 (0)	24
Languages	28 (7)	8 (2)	25
Sciences	52 (13)	8 (2)	25
Physical & Leisure	N/A	N/A	N/A
OSC	33 (7)	10 (2)	21
EPSC	35 (8)	9 (2)	23
Aesthetic	48 (12)	12 (3)	25

Table 5.10
Changes in the standard of equipment and materials provision in Sheffield, 1979/80-1986/7, by subject area
(actual number in parenthesis)

Subject area	% 'worsened'	% 'improved'	n
English	23 (5)	32 (7)	22
Maths	39 (9)	52 (12)	23
Humanities	35 (8)	39 (9)	23
RE	38 (8)	10 (2)	21
Languages	32 (7)	32 (7)	22
Sciences	63 (15)	25 (6)	24
Physical & Leisure	35 (8)	35 (8)	23
OSC	39 (9)	39 (9)	23
EPSC	32 (7)	32 (7)	22
Aesthetic	35 (8)	35 (8)	23

No. of assessments from years after 1979/80: 2

Table 5.11
Standard of equipment and materials provision in Sheffield, 1986/7, by subject area
(actual number in parenthesis)

Subject area	% below average	% above average	n
English	17 (4)	9 (2)	23
Maths	29 (7)	29 (7)	24
Humanities	33 (8)	17 (4)	24
RE	41 (9)	0 (0)	22
Languages	13 (3)	17 (4)	23
Sciences	29 (7)	25 (6)	24
Physical & Leisure	27 (6)	27 (6)	22
OSC	30 (7)	17 (4)	23
EPSC	32 (7)	14 (3)	22
Aesthetic	29 (7)	17 (4)	24

Table 5.12
Changes in the standard of book provision in Newham, 1979/80-1986/7, by subject area

Subject area	Number 'worsened'	Number 'no change'	Number 'improved'
English	3	2	0
Maths	2	2	2
Humanities	2	3	0
RE	2	2	1
Languages	1	3	1
Sciences	3	2	0
Physical & Leisure	N/A	N/A	N/A
OSC	1	4	0
EPSC	1	4	0
Aesthetic	1	4	0

No. of assessments from years after 1979/80: 2

Table 5.13
Standard of book provision in Newham, 1986/7, by subject area

Subject area	Number below average	Number average	Number above average
English	1	5	1
Maths	3	4	1
Humanities	2	4	1
RE	2	2	2
Languages	2	4	1
Sciences	4	2	1
Physical & Leisure	N/A	N/A	N/A
OSC	4	1	1
EPSC	3	3	1
Aesthetic	4	2	1

Table 5.14
Changes in the standard of equipment and materials provision in Newham, 1979/80-1986/7, by subject area

Subject area	Number 'worsened'	Number 'no change'	Number 'improved'
English	2	3	1
Maths	3	2	1
Humanities	3	3	0
RE	2	3	1
Languages	3	1	2
Sciences	4	2	0
Physical & Leisure	3	2	0
OSC	4	2	0
EPSC	2	4	0
Aesthetic	3	3	0

No. of assessments from years after 1979/80: 2

Table 5.15
Standard of equipment and materials provision in Newham, 1986/7, by subject area

Subject area	Number below average	Number average	Number above average
English	1	4	2
Maths	5	1	2
Humanities	2	4	1
RE	1	4	1
Languages	3	3	1
Sciences	5	1	1
Physical & Leisure	5	0	1
OSC	4	2	1
EPSC	3	3	1
Aesthetic	5	0	1

each area's share of capitation had increased or decreased between 1979/80 and 1986/87. This data indicates the changing priorities in the different LEAs, and, combined with the information on books, equipment and materials, leads to important conclusions regarding the condition of provision in different parts of the curriculum. It needs to be pointed out that although some subject areas have received an increased share of capitation, this has not necessarily been achieved at the expense of others in the sense that there is a deterioration in the quality or quantity of resources available. Changes in capitation may merely represent changing patterns of demand expressed through the numbers of pupils on different courses. But equally, shifts in capitation can reflect differential cost changes or explicit curriculum choices both of which may mean that the experience of pupils on particular courses can be adversely affected given a capitation which is static or decreasing in real terms. During a time of change, failure to consider past distributions can also lead to inequalities (Crompton, 1981, quoted in Simkins and Lancaster, 1987, pp.70-71). The relationships between changing capitation and resources are therefore complex and warrant examination. The survey provides key insights into the nature of these relationships.

Table 5.16 shows the results of the capitation analysis for **Cambridgeshire**. Though the number of responses to this part of the survey was unfortunately small, there is a clear shift of resources into Languages, Sciences, Occupational Skills and Crafts (OSC) and Education for Personal and Social Competence (EPSC). Resources have shifted out of Physical and Leisure and Aesthetic subjects and the Humanities. Maths subjects exhibit a polarisation. These results can be compared with the results on resource 'quality' in the same sets of schools (Tables 5.17 and 5.18). In Languages, OSC and EPSC the increased share of capitation has supported improvement in resource 'quality' in one or both of the two resource types, depending on the resource nature of the subject. However, in the Sciences there is clear evidence that an increased share of capitation has not brought

Table 5.16
Changes in shares of total capitation in Cambridgeshire, 1979/80-1986/7, by subject area

Subject area	Number of schools			
	Decrease	No Change	Increase	n
English	3	5	3	11
Maths	4	1	6	11
Humanities	5	4	2	11
RE	2	3	3	8
Languages	2	1	8	11
Science	2	0	7	9
Physical & Leisure	6	5	0	11
OSC	1	3	7	11
EPSC	3	2	6	11
Aesthetic	5	4	1	10

No of assessments from years after 1979/80: 0

Table 5.17
Changes in the standard of book provision in Cambridgeshire, 1979/80-1986/7, by subject area, for comparison with capitation data

Subject area	Number 'worsened'	Number 'improved'	n
English	3	5	11
Maths	3	5	11
Humanities	4	2	11
RE	2	5	8
Languages	3	8	11
Sciences	4	4	9
Physical & Leisure	N/A	N/A	N/A
OSC	3	2	11
EPSC	3	5	11
Aesthetic	2	3	10

No of assessments from years after 1979/80: 0

Table 5.18
Changes in the standard of equipment and materials provision in Cambridgeshire, 1979/80-1986/7, by subject area, for comparison with capitation data

Subject area	Number 'worsened'	Number 'improved'	n
English	4	3	11
Maths	2	6	11
Humanities	2	4	11
RE	1	4	8
Languages	2	5	11
Sciences	3	3	9
Physical & Leisure	0	6	11
OSC	1	5	11
EPSC	0	5	11
Aesthetic	1	5	10

No of assessments from years after 1979/80: 0

about a commensurate increase in the perceived adequacy of appropriate resources. By contrast, in Physical and Leisure subjects, a fall in capitation share has been accompanied by a perception of improvement.

Tables 5.19 and 5.20 show the capitation data for **Sheffield** for comparison with provision data on books and equipment and materials respectively. The subject areas exhibiting the most cases of an increased share of capitation are Maths and the Sciences, and, in the analysis of equipment and materials, Physical and Leisure subjects and EPSC. Comparing these results with the data on books (Table 5.21) and equipment and materials (Table 5.22) shows that in none of the instances of increased capitation share is there a commensurate number of cases of improvement. In the case of Sciences, once again, there are far more cases of provision deterioration than improvement despite their being far more instances of increased share of capitation.

Table 5.23 exhibits the results for **Newham**. The number of respondents is very small. Nevertheless, there are indications of a shift of resources into Maths, Sciences, OSC and EPSC, and away from the Humanities, and Physical and Leisure subjects. Unfortunately, because of missing data, comparing these results with the provision results is not meaningful due to very small sample size

5.4 Processes of resource allocation

Chapter 2 described the changes which have come about in the processes of resource allocation within both LEAs and schools. These changes are unlikely to have proceded at the same pace and to the same degree in different areas. In order to obtain an indication of how the case study LEAs have been affected by these developments, the survey sought information on how capitation was distributed within secondary schools. Drawing on the work of Simkins (1986), two aspects of the allocation process were examined: information collection; and allocation criteria. Information collection can be either (i) informal,

Table 5.19
Changes in shares of total capitation in Sheffield, 1979/80-1986/7, by subject area, for comparison with data on book provision

Subject area	Number of schools			
	Decrease	No Change	Increase	n
English	6	8	6	20
Maths	3	2	15	20
Humanities	5	5	8	18
RE	4	9	5	18
Languages	8	6	6	20
Science	6	1	13	20
Physical & Leisure	N/A	N/A	N/A	N/A
OSC	6	4	6	16
EPSC	8	1	9	18
Aesthetic	5	6	8	19

No. of assessments from years after 1979/80: 3

Table 5.20
Changes in shares of total capitation in Sheffield, 1979/80-1986/7, by subject area, for comparison with data on equipment provision

Subject area	Number of schools			
	Decrease	No Change	Increase	n
English	6	7	5	18
Maths	3	2	14	19
Humanities	5	5	7	17
RE	4	9	4	17
Languages	8	5	5	18
Science	6	1	13	20
Physical & Leisure	6	3	10	19
OSC	7	4	7	18
EPSC	7	1	10	18
Aesthetic	5	6	7	18

No. of assessments from years after 1979/80: 3

Table 5.21
Changes in the standard of book provision in Sheffield, 1979/80-1986/7, by subject area, for comparison with capitation data

Subject area	Number 'worsened'	Number 'improved'	n
English	10	4	20
Maths	9	10	20
Humanities	11	3	18
RE	9	2	18
Languages	11	2	20
Sciences	11	2	20
Physical & Leisure	N/A	N/A	N/A
Occupational Crafts	10	3	16
EPSC	7	5	18
Aesthetic	7	5	19

No of assessments from years after 1979/80: 3

Table 5.22
Changes in the standard of equipment and materials provision in Sheffield, 1979/80-1986/7, by subject area, for comparison with capitation data.

Subject area	Number 'worsened'	Number 'improved'	n
English	5	6	18
Maths	8	9	19
Humanities	6	7	17
RE	7	1	17
Languages	7	4	18
Sciences	14	4	20
Physical & Leisure	7	7	19
Occupational Crafts	8	6	18
EPSC	7	5	18
Aesthetic	6	6	18

No of assessments from years after 1979/80: 3

Table 5.23
Changes in shares of total capitation in Newham, 1979/80-1986/7, by subject area

	Number of schools		
Subject area	Decrease	No Change	Increase
English	1	2	1
Maths	1	1	3
Humanities	4	0	1
RE	2	2	0
Languages	1	2	2
Science	0	0	5
Physical & Leisure	3	1	0
OSC	1	0	3
EPSC	0	2	3
Aesthetic	1	2	2

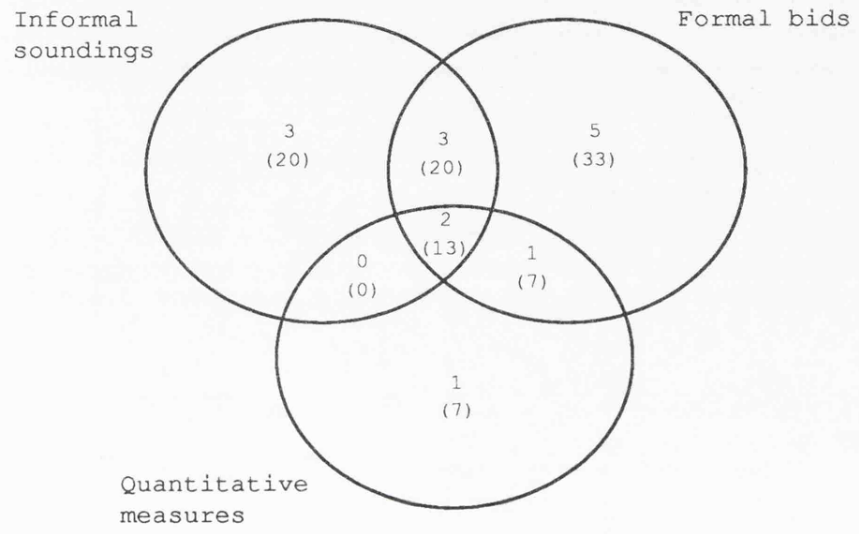
No. of assessments from years after 1979/80: 3

based on regular contact with staff; (ii) based on formal 'bids'; (iii) quantitative. The allocation criteria can be either: (i) based on qualitative assessment; (ii) based on a formula; (iii) based on percentage additions to historical patterns. Clearly, within these two dimensions, the categories are not mutually exclusive. For this reason the results of the survey are displayed as Venn diagrams, which show the numbers of schools in each category (Figures 5.1 to 5.6).

All three areas show significant shifts away from informal techniques of information collection and incremental allocation criteria towards more formal and rational processes. However, there are important differences between the LEAs. Schools in **Newham** were clearly lagging behind those in the other two areas at the start of the 1980s. All the schools in the sample used informal soundings alone or in part to gather information and all but one used some form of incremental criterion (though the fact that one used a formula allocation criteria alone does not square fully with the data on information collection). Additional comments from the survey returns indicate that in three schools, the allocation of capitation was, until comparatively recently, the head's domain. The rationale for any given distribution was, in one case, 'unknown', and, in two others, 'whim'. Change had come to these schools only once the head concerned had left. By 1986/87, resource allocation processes had moved in line with the other areas. **Sheffield** and **Cambridgeshire** have closely paralleled one another in changes over time. The most important difference between the areas lies in the fact that nearly half of the schools in the Cambridgeshire sample used only a formal bids method of collecting information in 1986/87 compared to less than one quarter in the other LEA, where there is a greater tendency for more than one approach to be used. These differences are not carried over to the same degree to the actual allocation criteria, but qualitative assessment alone remains more important in Cambridgeshire than in the other two LEAs. Associated with these differences, nearly 70% of schools in the Sheffield sample used quantitative measures alone or in part in

Figure 5.1
Changes in resource allocation procedures in Cambridgeshire, 1979/80 to 1986/7: information collection (percentages in parenthesis)

1979/80



No. of assessments from years after 1979/80: 1

1986/7

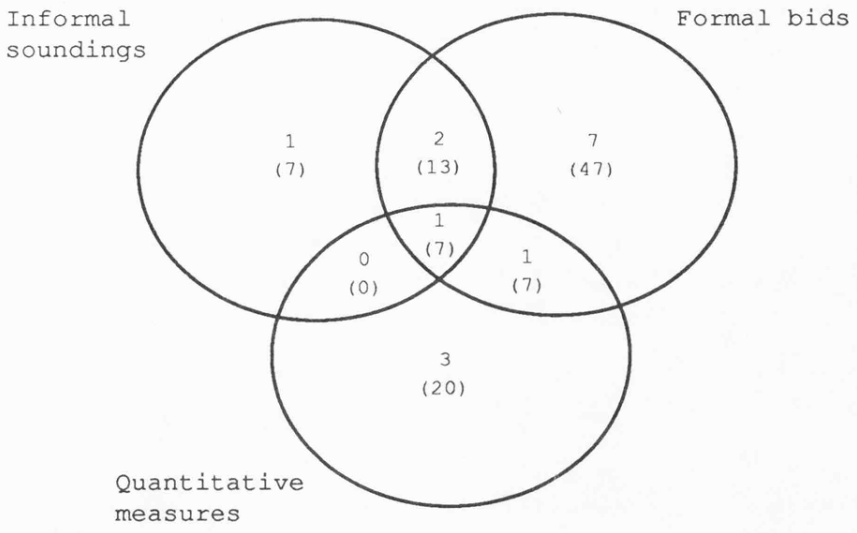
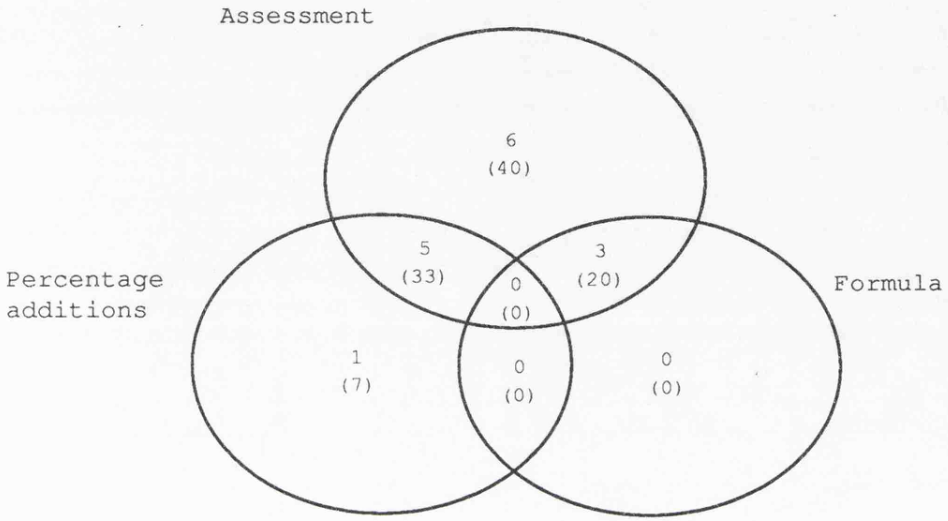


Figure 5.2
Changes in resource allocation procedures in Cambridgeshire, 1979/80 to 1986/7: allocation criteria
(percentages in parenthesis)

1979/80



No. of assessments from years after 1979/80: 1

1986/7

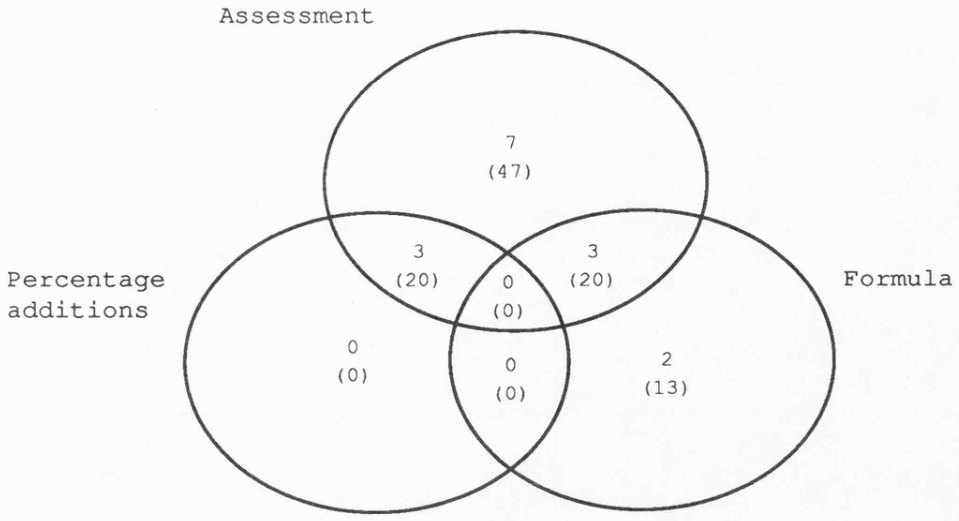
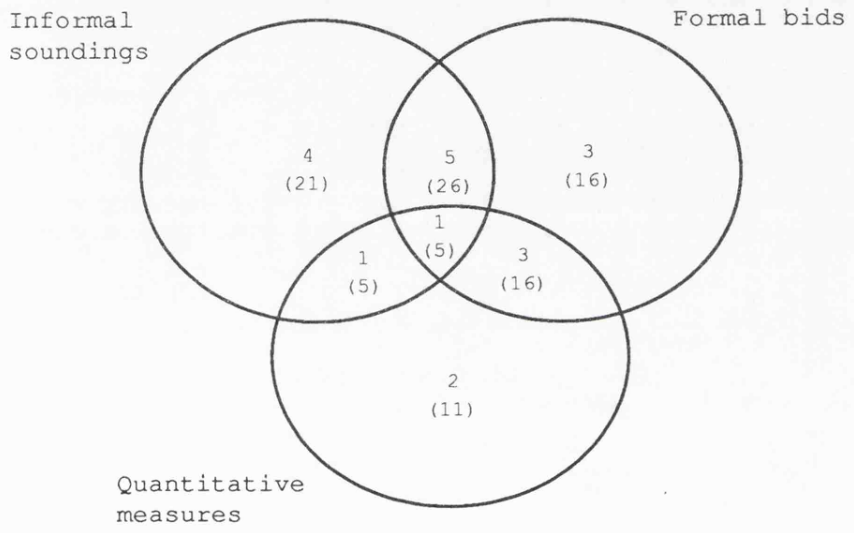


Figure 5.3
Changes in resource allocation procedures in Sheffield, 1979/80 to 1986/7: information collection
(percentages in parenthesis)

1979/80



No. of assessments from years after 1979/80: 3

1986/7

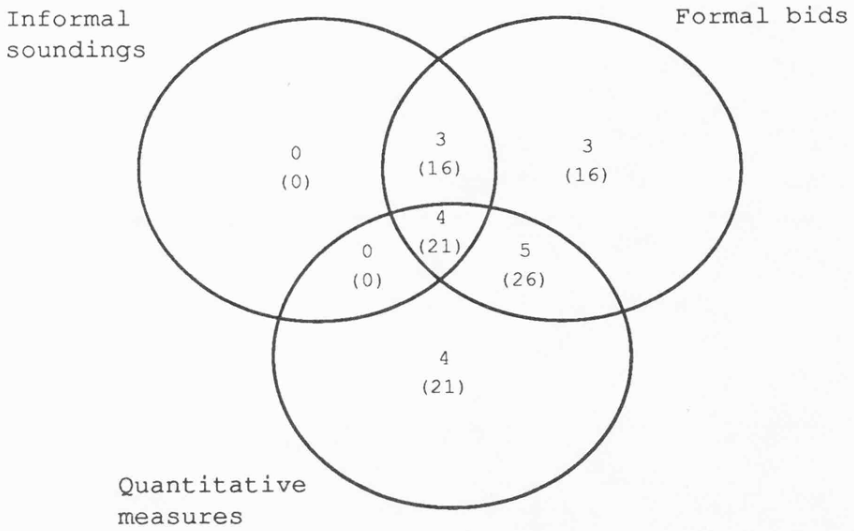
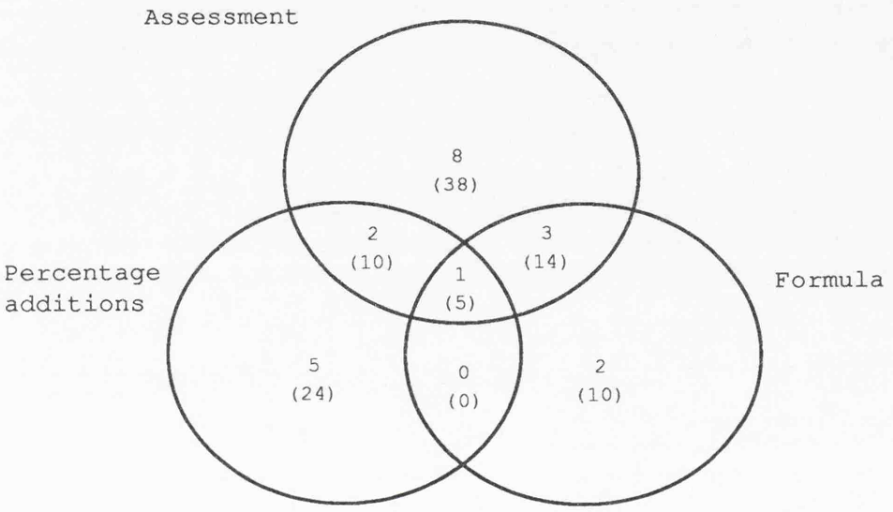


Figure 5.4
Changes in resource allocation procedures in Sheffield, 1979/80 to 1986/7: allocation criteria
(percentages in parenthesis)

1979/80



No. of assessments from years after 1979/80: 3

1986/7

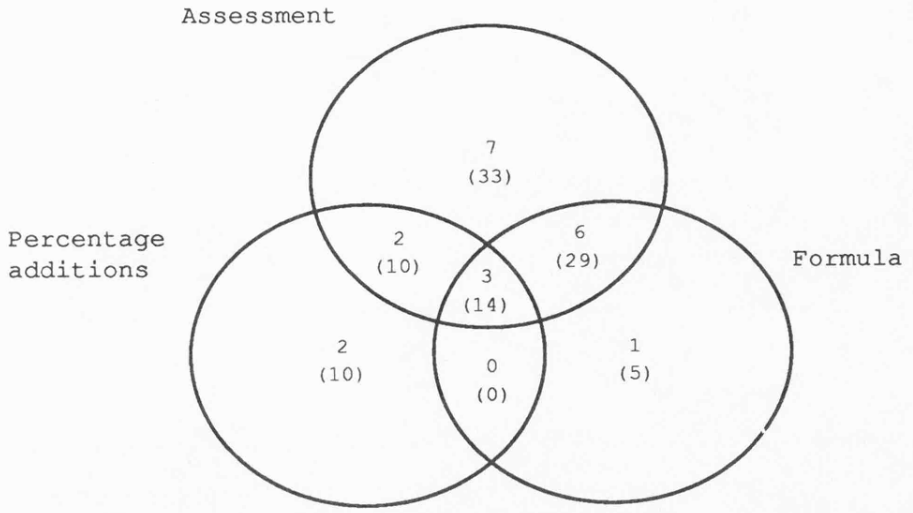
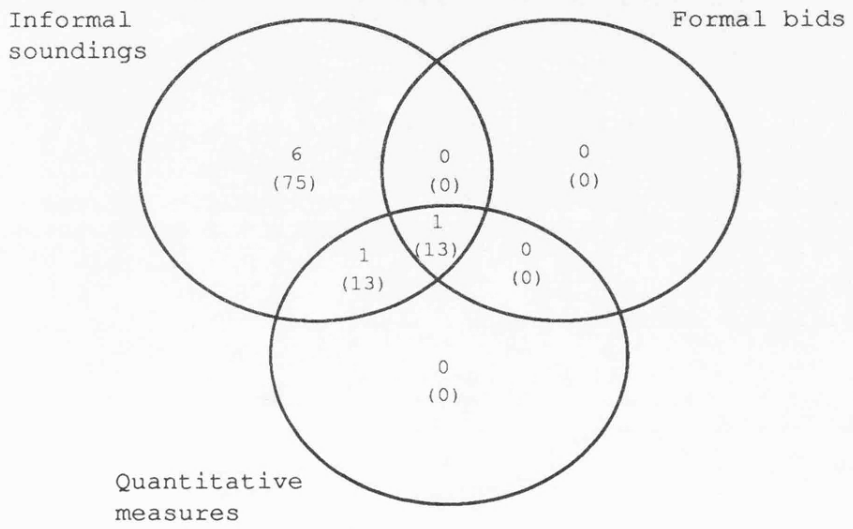


Figure 5.5
Changes in resource allocation procedures in Newham, 1979/80 to 1986/7: information collection
(percentages in parenthesis)

1979/80



No. of assessments from years after 1979/80: 1

1986/7

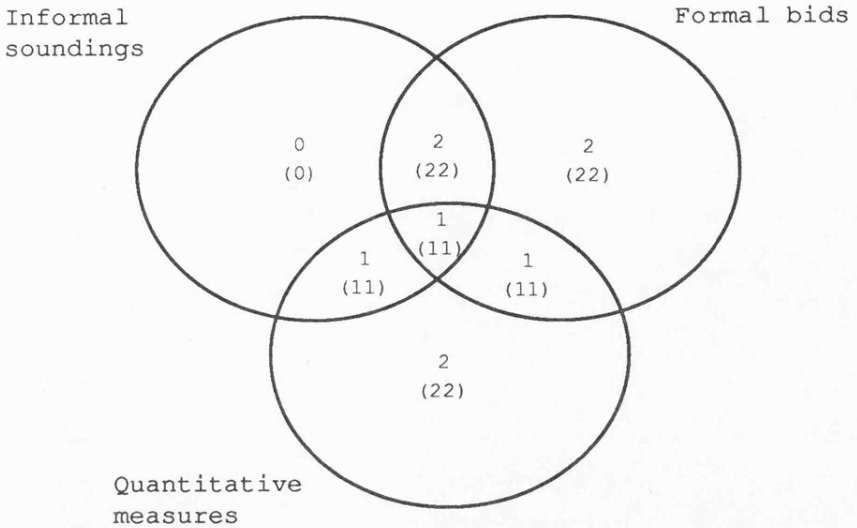
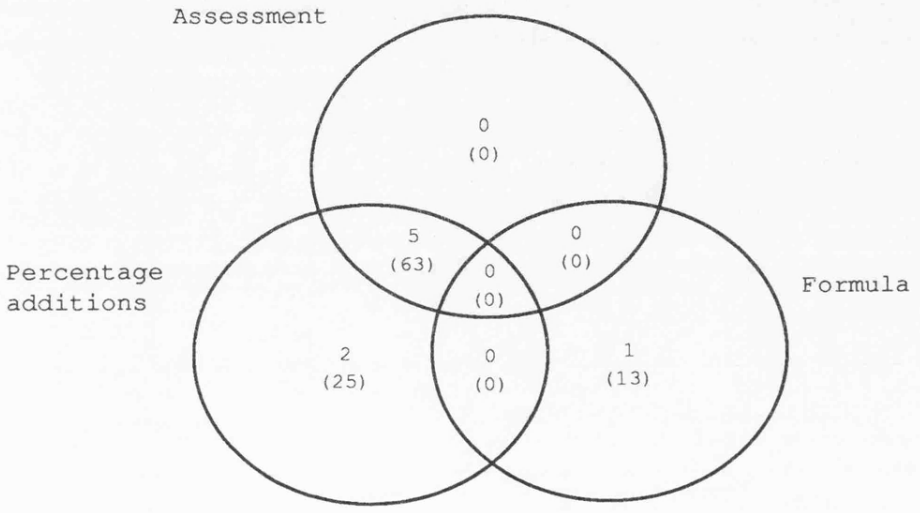


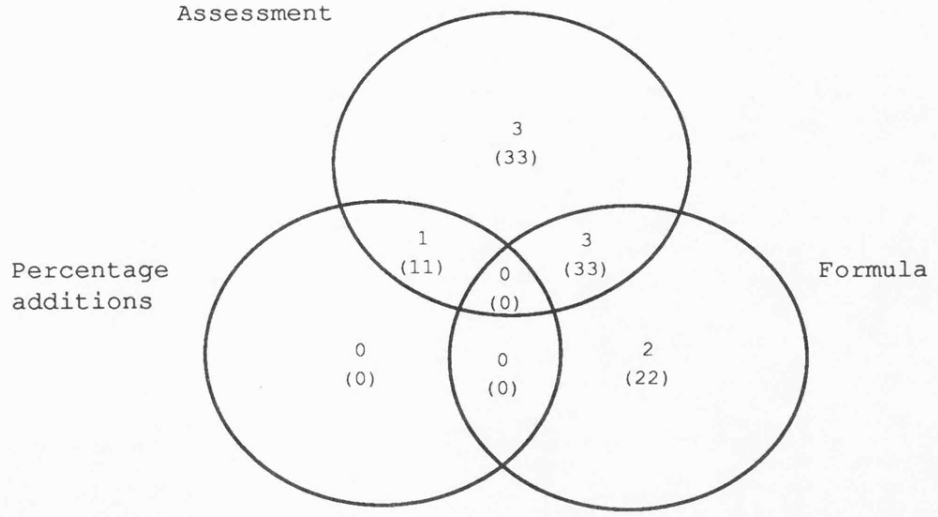
Figure 5.6
Changes in resource allocation procedures in Newham, 1979/80 to 1986/7: allocation criteria
(percentages in parenthesis)

1979/80



No. of assessments from years after 1979/80: 1

1986/7



1986/7, compared to 34% in Cambridgeshire. However, 34% of Sheffield's sample schools use percentage additions in some form in the final allocation (two schools use it alone) against 20% in Cambridgeshire who use it, all with some form of assessment. This points to something of a polarisation in Sheffield, with some schools retaining traditional approaches but with more having moved further towards quantitative formula-based methods than schools in Cambridgeshire.

5.5 Leicestershire

The case study interviews

As noted above, it was not possible to carry out the postal questionnaire survey in Leicestershire. Instead, it was decided to conduct a set of semi-structured interviews with senior staff in a sample of schools. The interviews covered the same issues addressed in the postal survey but they presented an opportunity to explore in more detail themes common to schools in all authorities. Because of this, and because of intrinsic differences in the types of data which can be obtained from the two approaches, the information collected is of a different nature to that collected in the other authorities. Although creating some difficulties, this approach has the advantage that it makes it possible to draw conclusions specific to schools in the county but also to comment more generally on the nature of resources and resource allocation processes in all schools.

The deputy headteachers or vice-principals of six Leicestershire secondary schools were interviewed between March and May 1988. The six schools were chosen on the basis that they gave a fair representation of, firstly, the different types and sizes of school in the county and, secondly, included schools from different socio-economic areas. The expert advice of officers and advisers in the authority was the main source of information used for the selection of schools, but Table 5.24 gives an indication of the relative positions of each school using school type, numbers on roll, and numbers of additional staff allocated

Table 5.24
Leicestershire sample school characteristics, 1986/7.

School	Type	Number on roll (autumn 1986)	Extra staff for social deprivation	Extra Section 11 staff
A	11-18	907	1.5	0.0
B	11-18	856	1.0	2.0
C	Upper	1366	0.0	3.0
D	11-16	588	1.0	2.0
E	11-16	524	1.5	3.0
F	11-16	922	2.0	3.5

Source: Leicestershire County Council

for reasons of social deprivation and proportion of ethnic minority pupils (Section 11 allocations). For reasons of confidentially the schools have been anonymised. It had been hoped to include a further upper school, which is also a community college and which is located in a comparatively prosperous catchment, but this was not possible due to lack of cooperation. High schools were not included in the interview survey because it was felt more appropriate to concentrate on the upper schools since these more closely resemble the more conventional secondary schools found in other parts of the authority and in the other case study areas.

Changes in resources

Interviewees were invited to comment on the level and quality of resources in their schools and how these had changed over time. It was clear that resources were, as the vice-principal of school C put it, a 'longstanding problem'. The deputy head of school E located the start of poor resourcing in the early 1970s and, along with C, had not noted any significant deterioration during the 1980s. There was a general resignation amongst all the interviewees to a low level of resourcing which clearly predated the advent of the first Thatcher government. Scarce resources meant that very needy subject areas took first priority in the allocation of capitation and that any additional resources were spread thinly. But this could lead to difficult judgements about relative need; as deputy E commented: 'Every department will say it's under-resourced'. For some interviewees, the issue was a general under-funding across the curriculum and no subject areas were especially problematic. But other schools did have particular difficulties. Three of the schools singled out the sciences: in one school the PTA had had to fund the purchase of textbooks; in another the key concern was the depreciation of equipment. Individual interviewees also expressed concern about design, music, drama, maths and modern languages. In school B a special section which gave extra guidance to both special needs and unusually bright pupils was under threat because it was not part of the

mainstream curriculum. In these circumstances, senior staff have sought additional funds wherever possible. The main sources have been TVEI and GCSE. The extra resources coming through these sources have been considerable. For example, school F received £33,000 from TVEI and £7,000 from GCSE funds in 1987/88. TVEI monies have been especially important in facilitating new local developments since they can be spent at the discretion of the school on both materials and staff, the only accountability being a financial one, within agreed broad aims, to the Training Agency. Though targeted at vocational and technical areas, the interviews revealed that TVEI resources have been drawn on to support the whole curriculum. In school E, every faculty had tried to move into the use of information technology to take advantage of the new funds. In this school, TVEI had been part of the curriculum since 1984/85: in most schools in the county the impact of TVEI has been felt mainly after the period covered by the thesis. Other funds have come on an *ad hoc* basis through specific projects in individual schools.

In this environment of generally scarce resources, curriculum development has taken place on an *ad hoc* basis, where funds have been available. Whether specific subject areas have been able to develop has depended on individual staff, on whether monies have been available and even on accident. The interviews showed that schools found it difficult to adapt to changing pupil intakes and demand for courses where these required additional resources over and above the 'normal' allocation. In some cases these were very long-standing problems. For example, school D was deficient in resources for the less able and less academic due to the fact that it had once been a girl's grammar school, even though it had become comprehensive as long ago as 1976. It had a new metalwork shop only because the 'mobile' have been razed to the ground in an arson attack! Aside from the problem of inadequate physical facilities, it had not been possible to alter the staffing in terms of teachers' subjects. The *ad hoc* nature of teacher loss in a time of falling rolls has been a

problem in all the sample schools, affecting where curriculum change has been able to take place.

The allocation of resources

The deputy heads/vice principals were asked to give details of how capitation was distributed amongst subject areas in their schools. The responses show that the whole gamut of procedures were then in operation (Table 5.25). Some schools had clearly moved further and sooner in the direction of more rational techniques than others. School F, for example, had operated its system of formula funding and bids for over a decade. In contrast, schools D and E (both small and located in the same poor, working class district of Leicester) still suffered from out-moded forms of allocation. School D has recently suffered from a decline into mis-management (see Ramsdale, 1987). The previous head had dispensed capitation according to a 'secret system'; heads of department were not told what their allocation was and had to ask for funds on an *ad hoc* basis. This system began to break down as the school took in more pupils following local school closure, and resulted in the head taking early retirement. A new, more rational system was in the process of being introduced. School E was poised for change also. The existing head ran a system which satisfied himself but 'few others' (deputy head). Allocations tended to be historical and unrelated to new needs, so that new subject areas had to fight for resources which were very difficult to get because they had to be at someone else's expense. Hence the system was inequitable. The head 'kept a book in his pocket' (*ibid*) in order to keep a check on spending: no-one other than the head knew the actual distribution. However, the head's retirement was imminent when the interviews were carried out and a new system was expected.

The association of centralised, autocratic methods of allocation with particular headteachers is a recurring theme of the interviews. Only once these heads physically leave can a new approach be initiated. In school B, for example, change had

Table 5.25
Methods of resource allocation in sample schools in Leicestershire.

School	Resource allocation procedures
A	Formula allocation to faculties; central fund for cross-curricular purposes.
B	Bids from faculty heads in response to curriculum 'construct' (model) produced by senior management team.
C	Allocation of half of total capitation according to formula; other half allocated to administration, central resources, cross-curricular activities and to bids prioritised by capitation committee.
D	In state of transition from a 'club system' in which head allocated resources individually to departments.
E	Part of capitation goes to central resources, cross-curricular activities; remainder is given a suggested distribution by the head who then oversees negotiations between faculties.
F	Formula plus 'special projects fund' controlled by the senior management team for which departments bid.

Source: Original interview survey.

been initiated with the arrival of the then current head in 1980. Prior to that year, there had been no formal process at all. Staff approached the head for resources as and when needed and capitation was dispersed on a 'first come, first served, who-smiled-sweetly-the-best' principle (deputy head). A bids system now operated. In school C, the present formula had been preceded by a bids system, but this had led to excessive in-fighting. Before that the head had operated a 'mysterious' system in which decisions 'emerged', 'like the Tory party' (vice-principal).

In three of the six schools some form of formula was in use at the time of interview. How the formula was devised and by whom varied however. This also applied to the allocation of those funds kept separate from the main allocation. In schools A and F it was the senior management team in liaison to varying degrees with heads of faculties or departments who controlled the process. In school C, however, there was a capitation committee. Although on the face of it more 'democratic', the committee's composition was, in fact, ad hoc and influenced by historical factors.

As well as examining capitation allocation at the level of the school as a whole, it was possible through interview to examine the further allocation of these resources. Once allocated to faculties or departments, capitation was left to the heads of these sub-units to be allocated to subjects or courses. This was universally left to the individuals concerned. Where formulae were used at the upper level, pupil weightings and numbers sometimes provided a guide to further allocation but individual needs were also accommodated. Not surprisingly, the style of faculties/departments in these circumstances depends on the 'disposition' (vice-principal, school A) of the heads concerned.

5.6 Conclusions

The surveys and interviews allow important conclusions to be drawn regarding the differences between the case study areas in terms of resources and the curriculum. The developments of the first half of the 1980s have clearly affected schools in different areas in different ways. The results also allow conclusions to be drawn regarding the curriculum and resources in general.

Schools in **Cambridgeshire** present a very optimistic picture of resource change compared to the other areas. For both the physical infrastructure and books, equipment and materials the overwhelming impression is of improvement or, at worst, no change. In **Leicestershire**, the interviews revealed an acceptance of a low level of funding that had characterised education since well before the 1980s and which had not noticeably deteriorated since 1979. Improvements were possible only on an *ad hoc* basis. In the cases of **Sheffield** and **Newham**, the picture is more clearly one of deterioration. In Sheffield, none of the elements of the building stock exhibit a clear tendency to improvement. Book provision has clearly borne the brunt of changes in capitation, with equipment and materials holding up in some areas but also showing a tendency towards polarisation between schools. In Newham, the physical infrastructure has in general been maintained, although without showing improvement, whilst in the area of books, equipment and materials the picture is one of at best stability and, at worst, deterioration.

The data on changes in the distribution of capitation are revealing of striking similarities as well as differences between the areas. Given the major contrasts between the areas described in the previous Chapter, and given that the results are based on the assessments of individual teachers in schools, common shifts in resources indicate the strength of trends in curriculum development which over-ride local differences. The Sciences and Education for Personal and Social Competence (EPSC)

have gained an increased share of capitation in the three LEAs surveyed, whilst Maths studies have gained in two and seen a polarisation in the third. Occupational Skills and Crafts (OSC) has also shown a gain in two. The subject area which has experienced a fall in share is the Humanities (in two LEAs). Physical and Leisure subjects have experienced a fall in two LEAs, but a gain in Sheffield, indicating a local influence.

The links of these changes to resource quality vary between areas. In Cambridgeshire, increased share of capitation has supported improvements in three subject areas, but in Sheffield and Newham an increased share has failed to prevent deterioration. In the case of the Sciences, in all three LEAs, an increased share of capitation has not been sufficient to bring about improvement and in Leicestershire half the sample schools singled out Sciences as an area of concern. This is a classic example of the expansion of resources failing to keep pace with the need for curriculum development.

By 1986/87, the three authorities surveyed seem to have reached similar points with respect to the process of resource allocation. Newham lagged behind the other authorities at the end of the 1970s and the start of the 1980s but has since made up the ground. Leicestershire has undergone a similar process of change; and the results indicate more generally the central role of individual head teachers in dictating the pace and nature of change. Perhaps surprising is the position of Cambridgeshire. Given its pioneering role in the development of local financial management (LFM), it might have been expected that changed management practices would have been more widely spread from earlier on than in other authorities. But the findings for Sheffield suggest that the pressures for change flowing from other sources, not least constrained resources, have been just as important, and more universally felt, leading to similar trends in very different areas. The results for Cambridgeshire may illustrate the failure of changed practices to spread widely beyond those schools involved in piloting LFM and the continuing strength of the traditional autonomy of

schools. The results for Sheffield confirm that it is an authority of great internal variation; some schools have made more radical changes to their resource allocation processes than those in Cambridgeshire, but others have maintained traditional practices.

CHAPTER 6: AN ANALYSIS OF THE CHANGING DISTRIBUTION OF RESOURCES BETWEEN LOCAL EDUCATION AUTHORITIES

6.1 Introduction

In Chapter 2 I reviewed the changes which have taken place in the post-war era in relations between central and local government. Chapter 3 demonstrated the need to examine - in the context of these changes - the patterns of variation in educational provision. In this chapter I want to draw these two themes together in an analysis of the consequences that changes in central-local relations have had for the resources available to the education service. I shall show that, despite, or perhaps because of, the increasingly centralised controls placed upon local expenditure by the Thatcher administration, there has been a growing divergence of experience between individual authorities. This is well illustrated through the four case-study authorities. I shall then move on to show how different authorities have managed the contraction of secondary education in this changed and highly varied context.

The chapter begins with an examination of the new system of central block grant introduced by the first Thatcher government and its evolution over time. Drawing together information from a number of sources, the nature of the new constraints placed on local authority spending is examined through both types of authority for the whole of England and for the case studies. The impact of these constraints on total local authority expenditure is then explored through an original analysis of national data from CIPFA.

Having set this context, the focus moves to specifically educational resources. The educational component of the new grant system is described, drawing attention to the differences between central government's calculation of educational 'need' to spend and actual expenditure. This provides the setting for the presentation of the findings of an original analysis of both education expenditure and a volume measure of provision (Pupil-

Teacher Ratios - PTRs). Using previously unpublished deflators, changes in secondary educational expenditure in real terms are explored in detail, relating these to changes to block grant and to differences in the management of the contraction of education with falling school enrolments.

6.2 Changes to central grants.

The Thatcher government came to power committed to reducing public spending. As far as local government was concerned the central administration believed that high levels of expenditure had been encouraged by high levels of central support which had weakened the accountability of local councillors to their local electorate. Strengthening the link between the rate payer and local services would, it was believed, act as a spur to keep local spending in check (DoE, 1986, p.5). It was not enough, however, merely to impose across-the-board reductions in central grants. Some authorities had been identified as 'unnecessarily' high spenders and needed commensurately tougher constraints. But this could not be achieved through the existing arrangements.

The existing RSG system had, the government argued, encouraged certain authorities to maintain high levels of expenditure since the needs element of the grant was based on past spending patterns whilst the resources element provided the same marginal rate of grant support regardless of an authority's 'extravagance'. By acting together, a group of authorities could actually increase its share of grant by increasing its expenditure (Gibson and Watt, 1986, pp.4-5). The 1970s had thus seen a shift of grant towards certain authorities (Table 6.1). The new Conservative administration's solution was to introduce a new system of grants in which central government sought to measure each authority's need to spend and then penalise, through grant reductions (taper), expenditure above that level. Needs and resources were thereby unified.

Table 6.1
Shares of needs and resources elements of RSG by class of authority, 1974/5 - 1979/80.

	1974/5	1975/6	1976/7	1978/9	1979/80
Non-metropolitan areas	57.3	56.1	54.8	53.7	53.4
Metropolitan areas	29.4	29.0	30.1	29.6	29.6
London	13.3	14.9	15.1	16.7	17.0
	100	100	100	100	100

Source: Gibson and Watt (1986, p. 4, Table 2.2)

In addition to these attempts to curtail recurrent expenditure, central government also imposed restrictions on *capital spending*. Until 1980, local authorities had been told the value of building work they were allowed to start each year by central government. Under the 1980 Local Government, Planning and Land Act, however, central government took upon itself the power to determine the total amount of capital to be spent in a year. LEAs submit proposals for 'major' building schemes (in 1981/82, those costing more than £120,000) to the DES for approval. The DES then builds up authority allocations from sectoral allowances. The DES no longer has a reserve fund to provide for supplementary allocations during the course of the year and local authorities have to find additional capital expenditure from other services.

Through these new controls, central government has been able to keep a tight rein on capital spending. Between 1978 and 1985 capital spending in education fell 25% in real terms, declining especially sharply between 1980 and 1982 and thereafter steadily, but very slowly, increasing (Radical Statistics Education Group, 1987). Allocations to individual authorities tend to fluctuate considerably from year to year, partly for the simple reason that capital requirements vary considerably over time. Because of this, and also because tracing the impact of capital controls is impossible without detailed information not available to the author, the effect of central constraints on individual authorities is not explored below. Suffice it to say that central controls on major capital projects are direct and on the whole inescapable, and all authorities have been affected by reductions in the aggregate allocation.

The centre's policies with respect to current expenditure have been only partly successful. The share of local expenditure supported by central grants has certainly fallen: in 1976/7, R.S.G., supplementary and specific grants accounted for 63% of local spending; by 1985/6 the figure stood at 47% (DoE, 1986, p.81). But local expenditure has continued to form an ever-increasing proportion of GDP, and between 1979 and 1985 the

volume of local expenditure rose by an average 0.5% each year (*ibid*, p.4). Every year central government has had to revise its spending plans for local government upwards.

Aware that its policies were failing from the start, the government was forced to resort to more and more severe penalties. In 1981 targets were introduced for expenditure, imposing a new set of limitations and grant burdens which became progressively more important that the original grant taper. Finally, in 1985/6 the centre took upon itself the ultimate power of sanction against overspending authorities, namely the ability to limit the size of selected authorities' rate bills through rate-capping legislation.

The burden of these new pressures was not equally borne. The factors and weightings adopted under the new system had the immediate effect of redistributing grant away from urban authorities and towards shire counties. As Table 6.2 shows, the government's measures of need were much closer to actual levels of Shire County spending than to those of either the Metropolitan Districts or Outer London Boroughs. Consequently, the squeeze upon urban authorities was commensurately greater. Within this general pattern, individual authorities fared better or worse depending on their particular circumstances. This is brought out well from the case studies. As can be seen from Table 6.3, up until 1985/6, Sheffield's GRE was less than that of the two shire counties. Faced with a situation in which its per capita expenditure was above its class average (Table 6.4), but its GRE was below (Table 6.3), Sheffield suffered a major loss of grant when the new arrangements became operative. Figure 6.1 shows these changes in central support. They would, of course, have been welcomed by authorities such as Cambridgeshire and Leicestershire which had actually seen a contraction in central support in the late 1970s whilst higher spenders such as Newham and Sheffield had maintained their high level of support. But, of course, any advantage which might accrue from this increase in the *proportion* of support was largely negated by accompanying regulations which attempted to

Table 6.2
Percentage expenditure variation from Grant-Related Expenditure Assessment by type of authority and case study, 1981/2.

	Percentage variation
Outer London Boroughs	14.2
Metropolitan Districts	9.7
English Shire Counties	1.2
Cambridgeshire	0.3
Leicestershire	-3.0
Newham	25.5
Sheffield	29.3

Source: CIPFA, *Finance and General Rating Statistics*, 1981/2.

Table 6.3
Total Grant-Related Expenditure Assessment (£ per head of population) by type of authority and case study, 1981/2-1987/8.

	1981	1982	1983	1984	1985	1986	1987
Outer London Boroughs	323	352	362	366	384	469	488
Metropolitan Districts	306	331	343	352	371	449	467
English Shire Counties	292	316	325	340	362	382	399
Cambridgeshire	292	314	326	343	368	384	397
Leicestershire	308	332	339	356	382	404	422
Newham	414	467	512	508	544	674	726
Sheffield	291	307	318	331	345	416	439

Source: Association of County Councils, *Block Grant Indicators,* relevant years.

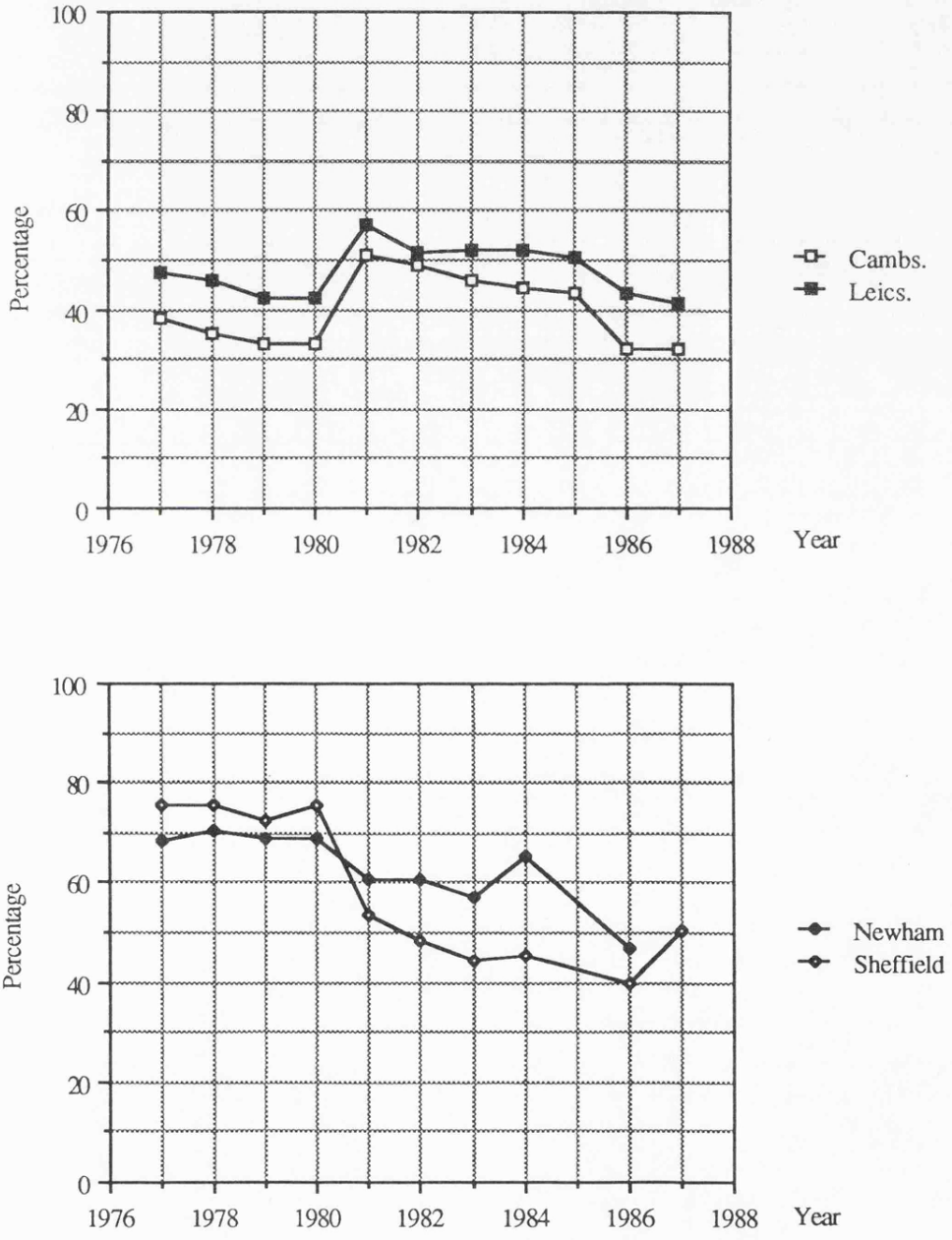
Table 6.4
Total Current Expenditure (£ per head of population) by type of authority and case study, 1981/2-1987/8.

	1981	1982	1983	1984	1985	1986	1987
Outer London Boroughs	314	343	368	387	370	424	*
Metropolitan Districts	308	339	366	387	354	417	463
English Shire Counties	282	310	328	340	330	352	389
Cambridgeshire	268	298	316	328	314	341	375
Leicestershire	284	327	353	368	368	401	429
Newham	396	466	516	574	*	635	*
Sheffield	338	378	409	439	*	493	514

* = No data

Source: CIPFA, *Finance and General Rating Statistics,* relevant years.

Figure 6.1 Changes in percentage of local expenditure supported by central grants, 1977-1987, by case study



Source: CIPFA, *Finance and General Statistics*, relevant years

reduce the *absolute* total of local expenditure and which tied the amount of grant received to that expenditure. Moreover, the initial redistribution in favour of the Shire Counties has not been maintained. Indeed, grant was actually shifted back towards urban areas after 1981/2 (Table 6.5). The reason for this apparent contradiction of government policy lies in the system of targets the government introduced retrospectively in 1982/3 and enforced until 1985/6, along with certain changes to the way GREs were calculated.

In 1981/2 central government had set the aggregate total of GREs equal to its total for local government spending so that a given volume of 'overspending' would have to be matched by the same volume of 'underspending'. This planned expenditure level was, however, wholly unrealistic, being only 1% above 1980/1 budgets when inflation was at 10% per annum (Gibson and Watt 1987), and there was a real danger that underspending authorities would push their expenditure up to GRE. Faced with an overwhelming desire to secure cuts in the aggregate level of local government expenditure from whatever type of authority, a system of targets and penalties was grafted onto the nascent block grant system. These targets were based on previous expenditure levels and had the effect of penalising authorities regardless of GRE. Since it was the Shire Counties which had relatively low existing expenditures, no fewer than 16 out of the 17 which found themselves spending below their GREs in 1981/2 were, in fact, above target! (*ibid*, p.9).

In the next few years further changes were made to the system. In 1982/3 the government agreed to make GRE the effective target for authorities spending below GRE to see the new arrangements in. But 'overspending' continued, and the government decided to announce targets several months before the RSG settlement and to increase penalties. For the first time in 1983/4 a deliberate gap was opened up between the sum total of targets and GREs. Unfortunately for the Shire Counties this gap proceeded to widen over the coming years as controls tightened and their targets increased (Table 6.6) (*ibid*, p.17).

Table 6.5
Percentage distribution of block grant after penalties amongst classes of authority, 1981/2-1987/8.

	1981	1982	1983	1984	1985	1986	1987
London boroughs	15.7	17.0	16.2	16.0	14.9	17.5	17.8
Metropolitan districts*	29.8	29.6	30.5	30.8	32.2	31.6	31.9
Non-metropolitan districts and counties	54.4	53.3	53.4	53.2	52.8	50.9	50.3

Notes: * and metropolitan counties before 1986

Source: Association of County Councils, *Rate Support Grant (England)*, Table 25, 1985/6 edition; and Table 17, 1987/8 edition.

Table 6.6
Percentage expenditure variation from Grant-Related Expenditure Assessment and targets, 1983/4 to 1985/6.

	1983/4		1984/5		1985/6	
	% From GRE	% From target	% From GRE	% From target	% From GRE	% From target
Outer London Boroughs	8.7	2.1	8.8	1.4	7.7	2.4
Metropolitan Districts	5.8	1.6	5.1	1.5	N/A	N/A
English Shire Counties	1.0	1.6	-2.0	1.4	N/A	N/A
Cambridgeshire	-1.0	2.0	-3.5	2.0	-6.8	0.0
Leicestershire	-1.1	0.0	-4.3	-0.1	-6.9	-0.1
Newham	15.3	5.9	12.0	-0.0	15.4	6.4
Sheffield	26.5	6.9	21.1	4.5	N/A	N/A

Source: CIPFA, *Finance and General Statistics*, relevant years.

The upshot of these developments was a growing disparity between the distribution of block grant amongst different classes of authority (Table 6.5) and the distribution of GRE (Table 6.7), on which the former was originally supposed to be based. This gap was due to the intervening effects of targets. Ironically, the divergence meant that block grant was being shifted back towards high-spending authorities, though this was not so true of London. A further fillip was given to this trend in 1986/7 when changes were made to the calculations of GRE to allow for the abolition of the GLC and the Metropolitan Counties. The significance of these comes out clearly from Table 6.3. The changes proved especially beneficial for London's share of block grant (Table 6.5). The fact that 1986/7 was a local election year in most cities did not go unnoticed, and Conservative Shires were particularly aggrieved that they had not been rewarded for keeping to Government spending limits (Times Educational Supplement, 1985).

Targets were abandoned ar the end of 1985/6. They had failed to constrain 'overspending', with the percentage overspend by English authorities falling from 8.37% in 1981/2 to only 5.15% in 1984/5 (Gibson and Watt, 1987). In particular, high-spending Labour-controlled authorities had failed to respond as required to the budgetary pressures on them; and, some had reached the point where the pressure had ceased altogether in the sense that, like the ILEA, they received no grant at all. This merely added to the squeeze on remaining authorities, of which the Shires were justifiably particularly aggrieved. The only course left open to the government was to limit the amount of rate levied by authorities. In 1985/6 18 authorities were 'rate-capped', including Sheffield. In 1984/5 these 18 had accounted for approximately 75% of the £748 million budgeted overspend against targets (Association of County Councils, 1986, p.47). Though Sheffield escaped capping in 1986/7, it fell foul of central government's regulations again for its 1987/8 budget. Newham was also capped for the first time in 1987/8.

Table 6.7
Percentage distribution of Grant-Related Expenditure Assessment amongst classes of authority, 1981/2-1987/8.

	1981	1982	1983	1984	1985	1986	1987
London boroughs	18.7	19.2	19.0	18.7	18.6	18.9	19.0
Metropolitan districts*	25.1	25.0	25.0	25.0	25.3	25.5	25.5
Non-metropolitan districts and counties	56.2	55.8	56.0	56.3	56.1	55.6	55.5

Notes: * and metropolitan counties before 1986

Source: Association of County Councils, *Rate Support Grant (England)*, Table 22, p. 39, 1985/6 edition; and Table 14, p. 30,1987/8 edition.

Although the government's attempts to limit local spending proved unsuccessful in a number of respects this is not to deny that they had no effect. Authorities facing loss of grant increased rates and indulged in 'creative accountancy' techniques which involve shifting money from current to capital accounts in order to reduce the apparent, but not the real, expenditure. Celebrated examples of this complicated process include Camden's mortgaging of parking meters. But such resistance to central control has simply stored up trouble, with a number of authorities running into financial difficulties latterly.

6.3 Impact on total local authority expenditure

Outside of the dramatic examples just cited, tracing the impact of these changes on actual expenditure is difficult. There is no simple relationship between central grants and local spending. The enormous complexity of the new block grant system and the great uncertainties which surrounded central policy towards local government make it even harder to find the links. Some attempts have nevertheless been made to explore the effects of the new system. In what is a complex piece of work, Gibson and Watt (1986) have attempted to 'explain' year-on-year changes in local authority budgets in terms of changes to the block grant system. Using a statistical model, GRE and target were found to have 'some limited role in influencing the expenditure of some groups of authorities, but usually a smaller role than fiscal pressure ' (para. 4.13) (fiscal pressure being the rate poundage change required to maintain a given volume of expenditure). Dividing authorities by political control, Gibson and Watt also found that non-Labour authorities reacted more to GRE than Labour ones. Interestingly, it was the hung councils which seemed most inclined to budget strategically. Labour authorities reacted mainly to fiscal pressure.

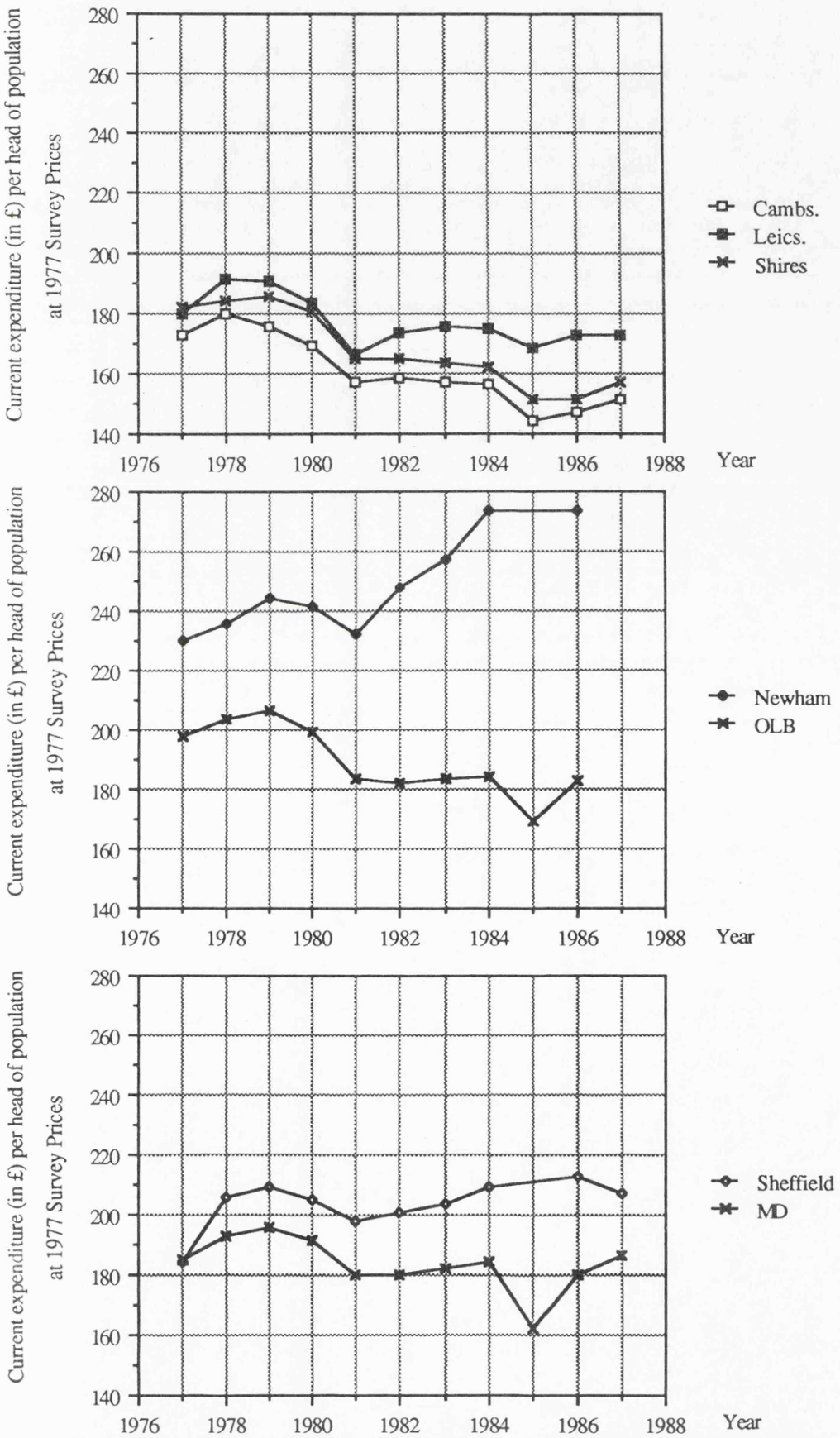
How have local authority expenditures reacted to these changing conditions? In order to analyse expenditure change over time it is necessary to convert annual data to 'real terms' figures to

allow for the effects of inflation, rises in wage costs etc. This is done using deflators. Care needs to be taken in their use since clearly they reflect the assumptions built into their construction. This can be particularly important in the case of highly disaggregated expenditure in individual service areas, as we shall see below with respect to education. The deflators used here are taken from Table J of the Association of County Council's *Rate Support Grant, 1987/88* publication (see Appendix 2). The data used are current expenditure per capita on all services, repriced to 1977 Survey Prices.

Figure 6.2 shows that after an initial expansion of provision in the late 1970s, all classes of authority have reduced their level of expenditure in real terms. By 1987/8 both the Outer London Boroughs and the Shires stood around 10% below their 1977/8 level, whilst the Metropolitan Boroughs had actually engineered a recovery back to their level of a decade before, assisted, however, by the assumption of some of the functions of the Metropolitan Counties in 1986/7. All classes show a similar pattern: significant reductions from the late 1970s to a low of 1981/2; then a period of relative stability followed by rapid reductions again in 1985/6, followed by recovery. The years of most rapid cuts correspond, firstly, to the advent of the first Thatcher administration and, in 1981/2, the introduction of the new system; and, secondly, in 1985/6, to the introduction of rate-capping and the further tightening of penalties.

The case studies show interesting deviations from their respective class trends. Whilst Cambridgeshire has broadly followed the same pattern as the Shire average, Leicestershire has clearly tried to protect provision levels since 1981/2. Newham and Sheffield have adopted a similar strategy of protection but from much earlier on so that their expenditure in 1987/8 is well above what it was in 1977/8 in real terms. Unfortunately, the full effect of the rate-capping legislation on these two authorities is not known as the relevant data are not available. The picture then, is one of significant

Figure 6.2 Changes in current per capita expenditure, 1977-1987, in real terms, by case study and type of authority



Source: CIPFA, *Finance and General Statistics*, relevant years, corrected to real terms

divergence between individual authorities, a trend somewhat obscured by grouping authorities into classes.

6.4 The education service

The changes outlined above provide an essential context for an examination of the resources made available to education. Yet there are factors apart from these financial ones affecting resources. Different authorities have managed the complex social, economic and political changes which they face in different ways, not least because these changes have cut across one another in different ways in different places. Demographic change, for example, has had ramifications for the way the service is managed. A contracting client base has raised a whole series of questions about school closure and the most efficient means of distributing resources within local authorities. Economic recession has also had an impact. Indirectly, increasing unemployment and the associated rise in social deprivation has raised the need for increased levels of compensatory and welfare provision. More directly, rising unemployment has provided an important stimulus for the introduction of a new technical/vocational curriculum within schools. There have also been a series of political developments outside of the financial area which have had and are having consequences for resources. Central government policies on education and training, particularly those backed by monetary incentives through the TA and ESGs, are continuing to have significant impacts.

There is considerable scope for variation in the way these processes work themselves out on the ground within individual local authorities. We have already seen the extent to which central government policies towards local government have been spatially differentiated, often in unintended ways. In this section, I shall show how different local authorities have managed educational change in different ways.

6.4.1 Education and block grant: central government's assessment of 'need'

The section above showed how central government has attempted to curb local authority spending through the introduction of GREs and associated targets and penalties. GREs are built up from individual service GREs. In this section I shall explore the assumptions underlying the production of education GREs and show how they reflect central government priorities (especially those of the DES) rather than those of local authorities. They bear little relation to existing patterns of provision.

Education is by far and away the largest single component of total GRE, comprising two-thirds of the GRE of LEAs. In turn, the education GRE is built up from eleven components, as shown in Table 6.8. As can be seen, the 11-16 age group alone comprises over a third of education GRE, which translates itself into around 17% of *total* relevant expenditure for grant purposes. This component is constructed from 5 factors, the most important being simply the number of children of secondary age under 16 years of age, lagged by one year to allow for falling rolls, which distributes some 86% of the component. The remaining factors are an index of additional educational needs (AEN) (11%), a sparsity factor (2%), a factor for higher costs in and around London (1%), and an Isles of Scilly special costs factor (negligible).

GRE is distributed between authorities by calculating each authority's score on each factor. Each unit of each factor is then assigned a monetary value and summing these unit values produces the service GRE. This means that central government has two ways of affecting the final total of GRE:

(i) through its control over the amount per unit, e.g. per 11-16 pupil;

(ii) through its ability to alter the formula, most noticeably in the AEN formula.

Table 6.8
Elements of the Grant-Related Expenditure Assessment for education, 1986/7.

	% share of total GREA
Nursery	1.4
Primary	29.5
Secondary:	
- below school leaving age	36.5
- above school leaving age	6.0
Non-Advanced Further Education	8.2
Education pools (mainly Advanced Further Education)	7.8
Mandatory student awards	0.6
Adult education	1.7
Youth and related services	1.5
Young unemployed	0.7
School meals and milk	2.5
Debt charges (outside the Advanced Further Education pool) on pre-1981/2 capital expenditure	3.7
	100.1

Source: Association of County Councils, *Rate Support Grant (England), 1986/7.*

An examination of these two aspects is revealing of central government policy on education. Table 6.9 shows the expenditure allocated to each unit of the three most important indicators for the 11-16 secondary education GRE and how this has changed over time. (Throughout this period, the unit expenditure for the remaining factors has been kept to £1.00). A number of points emerge from this table. Firstly, central government's assessment of need to spend changed little over the first three years of GRE and actually fell significantly in 1982/3. Central government was assuming a situation for local authorities quite at variance with their experience given the combined effects of inflation (still high at this time) and falling rolls. It was only in 1986/7 and 1987/8 that substantial rises occurred. Secondly, within these changes, central government redistributed the balance between the constituent factors and thereby affected the distribution of grant between LEAs at the margins. The £ per unit GRE for AEN took a significant step up in 1982/3. In the same year the distribution formula also changed. Instead of it being assumed that 15% of the school population had additional educational needs (AEN), the figure became 17.5%. And half of the 1.8% pupils assumed to require a cost weighting 4.5 times the average pupil became distributed by the AEN index where previously the whole lot had been distributed *pro rata*. Those changes contributed to rises in the GREs of urban authorities. More recently, the sparcity factor has received a significant boost, benefiting those Shire Counties with remote rural populations.

Comparing the GREs produced by these techniques for individual LEAs with actual expenditure reveals, firstly, the poor relationship of government estimates to actual expenditure patterns, and, secondly, the targetting of discretionary spending for penalties. Table 6.10 shows that across the whole gamut of different types of authority, as exemplified by the case studies, the secondary education GRE (a statutory area) overestimates 'need to spend'. Partly this results from the overestimation of the number of over sixteens going on to

Table 6.9
Unit values of the elements of secondary education GRE, 1981/2 to 1987/8.

	Pupils of secondary age under 16	Additional educational needs	Sparcity	Total
1981/2	944	102	40	1086
1982/3	868	161	19	1048
1983/4	910	171	20	1101
1984/5	946	159	86	1191
1985/6	1017	169	92	1278
1986/7	1090	181	212	1483
1987/8	1255	203	242	1700

Source: Department of the Environment, Local Government Finance Policy Directorate, *The Technical Handbook of Grant-Related Expenditure,* relevant years.

Table 6.10
Comparison of 'need to spend' and actual expenditure on different sectors of education by case study, 1984/5.

	Cambridge-shire	Leicester-shire	Newham	Sheffield
Secondary education GREA per capita (£)	90	101	116	95
Net cost of secondary education per capita (£)	78	93	113	87
Actual expenditure on secondary education as % of GREA	87	92	98	92
Total education GREA per capita (£)	219	228	274	215
Total net expenditure on education per capita (£)	219	242	326	285
Actual expenditure on total education as % of GREA	100	106	119	132

Sources: Rows 1 and 4: Department of the Environment, Local Government Finance Policy Directorate, *The Technical Handbook of Grant-Related Expenditure,1984/5.* Rows 2 and 5: CIPFA, *Education Statistics 1984-85 Actuals*

further education, even after the year lag for falling rolls. Despite this overestimation, however, all the case studies manage to 'overspend' their total education GRE because of the centre's underestimation of 'need to spend' in discretionary areas. The structure of the GREs clearly affects most those authorities with a high level of discretionary expenditure like Newham and Sheffield.

GREs are clearly far removed from actual provision patterns. For this reason, it is doubtful that central government calculus *at this detail* will affect local behaviour. Marslen-Wilson and Crispin (1983) found that knowledge of the education GRE amongst local government officers was 'patchy'. Even where it was known, neither the absolute amount nor the share of the budgets spent on education was guided by the GRE since it was irrelevant to budgetary decisions. The author's own interviews confirmed these findings. Gibson and Watt (1986) found that the year-on-year percentage change in education GRE was singularly unsuccessful at predicting the same year-on-year change in education budgets.

Such mixed findings are scarcely surprising. Changes to a central block grant system would be unlikely to feed through into separate service budgets except as part of a general tightening of resources. Indeed, Gibson and Watt (1986) found their model of budgetary behaviour to be more successful when applied to local authorities as a whole rather than education departments alone. Nonetheless, education expenditure has been affected by general constraints. What has happened to spending patterns?

Before analysing the nature of change in education provision, it is necessary to look at the general structure of educational costs and how these are affected by contraction, and also to discuss the nature of unit cost data used in the analysis.

6.4.2 Secondary education expenditure: structure and change

Table 6.11 shows the structure of educational expenditure in the secondary sector. Although there are differences between authorities and over time in precise shares of expenditure, the broad patterns are the same, with over two-thirds of costs being accounted for by teachers' salaries. Adding in other staff costs brings the proportion due to salaries to over three-quarters. The other noteworthy feature is the very small proportion going to books and equipment. The high proportion of spending accounted for by salaries considerably reduces the flexibility open to budget makers in their year-by-year decisions. For teachers, the long time scales involved in education makes sudden staff changes difficult without causing serious disruption to pupils and means that most of the education budget is already committed. More importantly, though, interviews with officers showed that union arrangements have made it virtually impossible to secure staffing redundancies: in their place, highly complex redeployment procedures have been drawn up which have made planning for contraction especially difficult. Savings have therefore been forced into other areas, a tendency reinforced by the adoption of curriculum protection procedures (see Section 2.5) which have increased the significance of teaching staff in the annual budget.

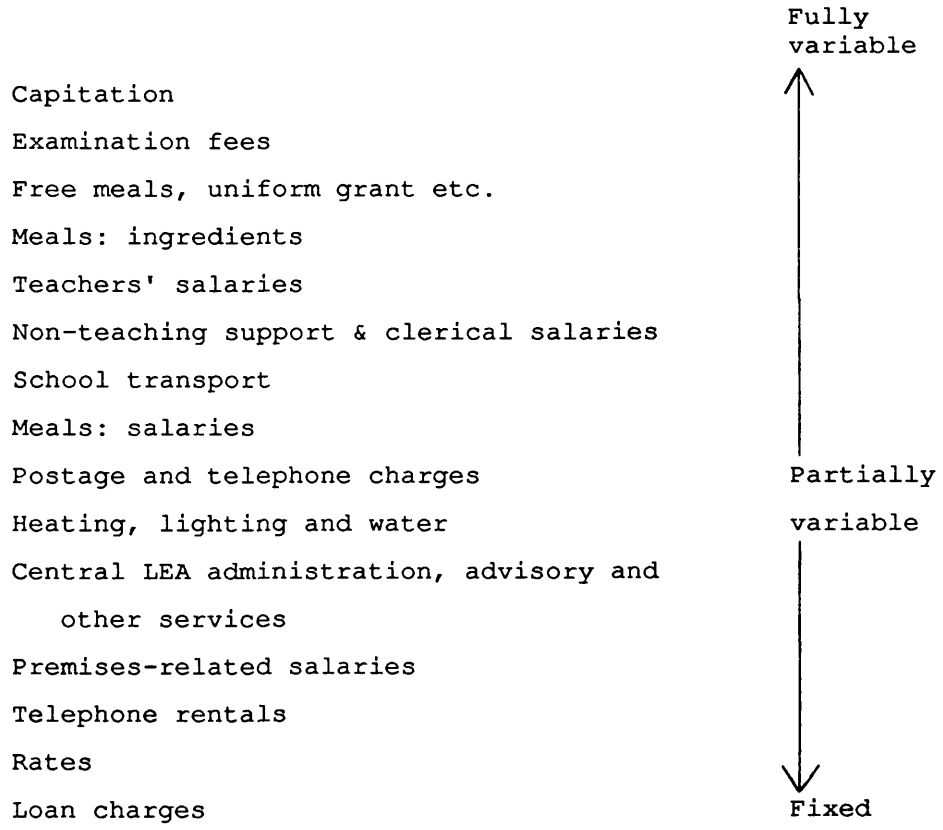
The nature of the costs involved in education have an important bearing on expenditure during a time of contraction. The magnitude of the costs involved depends on the relative proportions of fixed and variable costs. The greater the proportion of fixed (i.e.indivisible) costs, the more unit costs rise with falling rolls, all else being equal. Unfortunately, in practice the division of fixed from variable costs is not easy: some costs are only partly variable; others exhibit a threshold function. Most costs lie somewhere on the spectrum between being fully variable and fully fixed. Knight (1980) has suggested the range shown in Table 6.12. Hinds (1980) has

Table 6.11
The structure of expenditure in the secondary education sector.

	%
Teaching staff	69.5
Education support staff	2.3
Premises-related staff	5.1
Administrative, clerical and other staff	2.7
Premises	13.6
Books and equipment	3.8
Other supplies	1.4
Other	1.5
	99.9

Source: derived from Table 6, Department of Education and Science, *Statistical Bulletin 14/85, Educational Expenditure 1979-80 to 1983-84.*

Table 6.12
The education fixed-variable costs spectrum.



Source: Knight (1980)

estimated the proportions of different sub-categories of educational expenditure which are fixed and variable, as displayed in Table 6.13. Hewton (1986b) suggests that 35-45% of costs might be fixed in total, which would mean a 10% rise in costs for a 20% fall in rolls. But as Hewton (1986a) has pointed out elsewhere, local variabilities in school organisation make for a situation in which 'there is no direct and easily calculated relationship between a numerical fall in pupil numbers and the financial saving that can be obtained therefrom' (p. 116). Nevertheless it is clear from Tables 6.12 and 6.13 that due to their variable nature, items such as supplies and services and capitation are liable to be most vulnerable to reduction in a time of contraction. In practice, for the reasons just noted, teaching staff costs are more fixed than the economic theory would suggest.

6.4.3 Unit costs: use and abuse

Unit costs are a vital means of understanding education expenditure data. However, making comparisons between LEAs and over time, especially when trying to make inferences about *standards* of provision is problematic. The principle problem arises from the fact that high or rising unit expenditures do not necessarily imply high or rising standards. PTRs and unit expenditures tell us nothing about balance and breadth in the curriculum, class size, contact ratio etc. These are the products of the ways schools are organised and without additional knowledge of these, a translation from expenditure to provision is difficult. As an illustration of this, amongst the four case studies different arrangements exist for the education of the post-16 age group. In Cambridgeshire, for instance, Sixth Form colleges are used in part of the county, whilst in Leicestershire 14-18 schools are used. How these arrangements affect what an authority is able to provide within a given budget is not clear. To be sure, where the differences are substantial we can be more certain that the difference is absorbed in better standards of provision experienced by the pupil rather than higher costs. Whether this improved standard

Table 6.13
Estimates of the proportion of costs in different elements of education that are fixed and variable.

	Variable %	Fixed %
Teaching staff	95	5
Non-teaching staff	20	80
Premises	-	100
Supplies and services	100	-
Transport	100	-
Establishment expenses	50	50

Source: Hinds (1980)

has any substantial effect on educational outcomes is, of course, highly controversial and has become highly political with the then Secretary of State for Education, Keith Joseph, explicitly condemning large variations in unit expenditures between LEAs because they bore no relationship to measures of educational attainment (quoted in Goldstein, 1984a).

At the same time, central government has been only too pleased to point to recent rises in unit expenditures to counter accusations that standards of provision have been falling. The problem here is that as school rolls fall, the cost of providing a given curriculum at a given class size and contact ratio will inevitably rise. Costs will also rise because as the peak of pupil numbers runs through a school, the average age of the pupils will rise along with it and older pupils have higher resource requirements. Apart from these cost factors, the 1980s have also seen rising demands for educational expenditure: from new curriculum developments to an increasing proportion of pupils with AEN and a more satisfactory recognition of SEN. Unfortunately here it is even more difficult to know, without additional evidence, if higher expenditures per pupil over time are merely paying for the same or actually providing more. With such evidence for urban authorities, Crispin and Marslen-Wilson (1985) found that '...a rising demand within a now falling total of local government resources means...that demands will not be met, hence the paradox of more resources per pupil and...growing shortcomings' (p.83).

Unfortunately, without the sort of detailed work carried out in the latter half of this thesis, unit expenditures and PTRs remain the only readily available means of comparing large numbers of authorities. Bearing the above comments in mind, what has happened to the patterns of provision on secondary education in different classes of authority and the four case studies over time?

6.4.4 Changes in secondary education provision

The following section addresses this question through an original analysis of LEA-level expenditure and volume data produced by the Chartered Institute of Public Finance and Accountancy (CIPFA). The use of CIPFA data ensures that the data is as comparable as possible between authorities. Although ensuring comparability is a difficult issue, CIPFA represents the most reliable source in this respect. Throughout the section, CIPFA Actuals are used wherever possible in preference to Estimates. These provide, by definition, a more reliable guide to expenditure, especially in the context of recent unpredictabilities in central grant allocations which have rendered local authority budgeting difficult. The main drawbacks in using Actuals are (i) they are less up to date; (ii) they come in a more aggregated form than the Estimates, especially in the area of non-teaching staff.

The following section analyses the changing patterns of expenditure for the main cost categories in secondary education. Total *gross* expenditure is used in preference to *net* since this measures levels of provision rather than cost to the LEA. The data relate to England only. Comparisons are made between the main classes of authority (the Outer London Boroughs, Metropolitan Districts and Shire Counties) and then between the case studies, relating them to their class averages. Newham is traditionally related to the Outer London Boroughs and this convention is followed here. However, it needs to be stated that this is not really appropriate. It arises from the fact that until April 1990 education in inner London was provided by the Inner London Education Authority which was very much a special case and therefore not suitable as a comparitor for any other LEA. Newham is, by all measures, an inner-city authority (see Chapter 4) but in education an appropriate group against which to compare it does not exist. Nonetheless, for examining changes over time, rather than differences from an average, the comparison is useful.

To analyse changes over time, annual data must be corrected to real terms using deflators. A general education deflator taken from Table I in the Association of County Council's *Rate Support Grant (England) 1987/88* is used to correct total secondary expenditure. In order to examine changes to expenditure below this level, under the disaggregated headings, different sets of deflators are required. Prices can behave differently in different sectors; It cannot be assumed, for example, that book prices have changed in the same way as fuel prices. In order to analyse sub-categories of spending, use was made of previously unpublished deflators constructed by the Treasurer's Department of Lincolnshire County Council for the calculation of the overall education repricing factors. The factors were available for 1980/1 onwards. They relate to the primary and secondary sectors and cannot be obtained for the secondary sector alone. Whilst they therefore provide a sound general guide to changes, they are used, whenever possible, in conjunction with volume measures of provision. The deflators are shown in Appendix 2. The disaggregated data are presented at 1980/1 out-turn prices.

Changes by type of authority

Table 6.14 shows the trends in total gross secondary education spending in different types of LEA. It is clear that the Shire Counties had marginally higher total unit expenditure than the Metropolitan Districts in the initial years of this period but that this position was reversed in the 1980s and that an increasingly wider gap between the two groups is opening up as the 1990s approach. The high spending position of the Outer London Boroughs has been maintained throughout the period. The ILEA has similarly maintained its position as the highest spending LEA.

These totals hide some significant differences between authorities in key constituent expenditure headings (Tables 6.15 to 6.17). Since 1978/9 Metropolitan Districts have steadily crept ahead of the Shires in terms of expenditure on staff, whilst it is the Shires which have by and large, remained ahead

Table 6.14
Gross unit expenditure on secondary education (£) by class of authority, 1977/8 to 1986/7.

	ILEA	as % of OLB	OLB	as% of MD	MD	as % of Shires	Shires
1977/8	704	132	535	114	468	97	485
1978/9	822	135	607	114	533	99	540
1979/80	983	139	706	115	614	100	614
1980/1	1279	142	899	117	768	100	768
1981/2	1483	147	1012	115	878	102	865
1982/3	1647	149	1109	116	954	101	944
1983/4	1850	153	1206	117	1034	102	1017
1984/5	2046	156	1308	117	1120	103	1085
1985/6	2196	156	1405	115	1222	104	1180
1986/7	2456	N/A	N/A	N/A	1407	105	1337

Source: CIPFA, *Education Actuals,* relevant years.

Table 6.15
Expenditure per secondary pupil (£) on teaching staff by class of authority, 1977/8 to 1986/7.

	ILEA	as % of OLB	OLB	as% of MD	MD	as % of Shires	Shires
1977/8	419	114	367	113	325	100	325
1978/9	477	117	409	113	361	101	357
1979/80	555	118	469	113	415	103	405
1980/1	746	122	612	115	534	103	520
1981/2	865	125	693	113	611	104	589
1982/3	972	129	755	115	658	103	637
1983/4	1051	129	817	115	710	104	684
1984/5	1151	131	880	114	770	106	729
1985/6	1270	133	952	112	847	107	793
1986/7	1403	N/A	N/A	N/A	983	110	895

Source: CIPFA, *Education Actuals,* relevant years.

Table 6.16
Expenditure per secondary pupil (£) on books and equipment by class of authority, 1979/80* to 1986/7.

	ILEA	as % of OLB	OLB	as % of MD	MD	as % of Shires	Shires
1979/80	38	224	17	121	14	108	13
1980/1	75	214	35	135	26	100	26
1981/2	72	190	38	131	29	94	31
1982/3	86	205	42	136	31	89	35
1983/4	96	209	46	131	35	95	37
1984/5	93	190	49	126	39	95	41
1985/6	94	177	54	138	39	89	44
1986/7	100	N/A	N/A	N/A	52	93	56

Notes: *1979/80 is the earliest year shown here because, prior to this, books and equipment expenditure was calculated on a different basis.

Source: CIPFA, *Education Actuals,* relevant years.

Table 6.17
Expenditure per secondary pupil (£) on premises (excluding staff costs) by class of authority, 1977/8 to 1986/7.

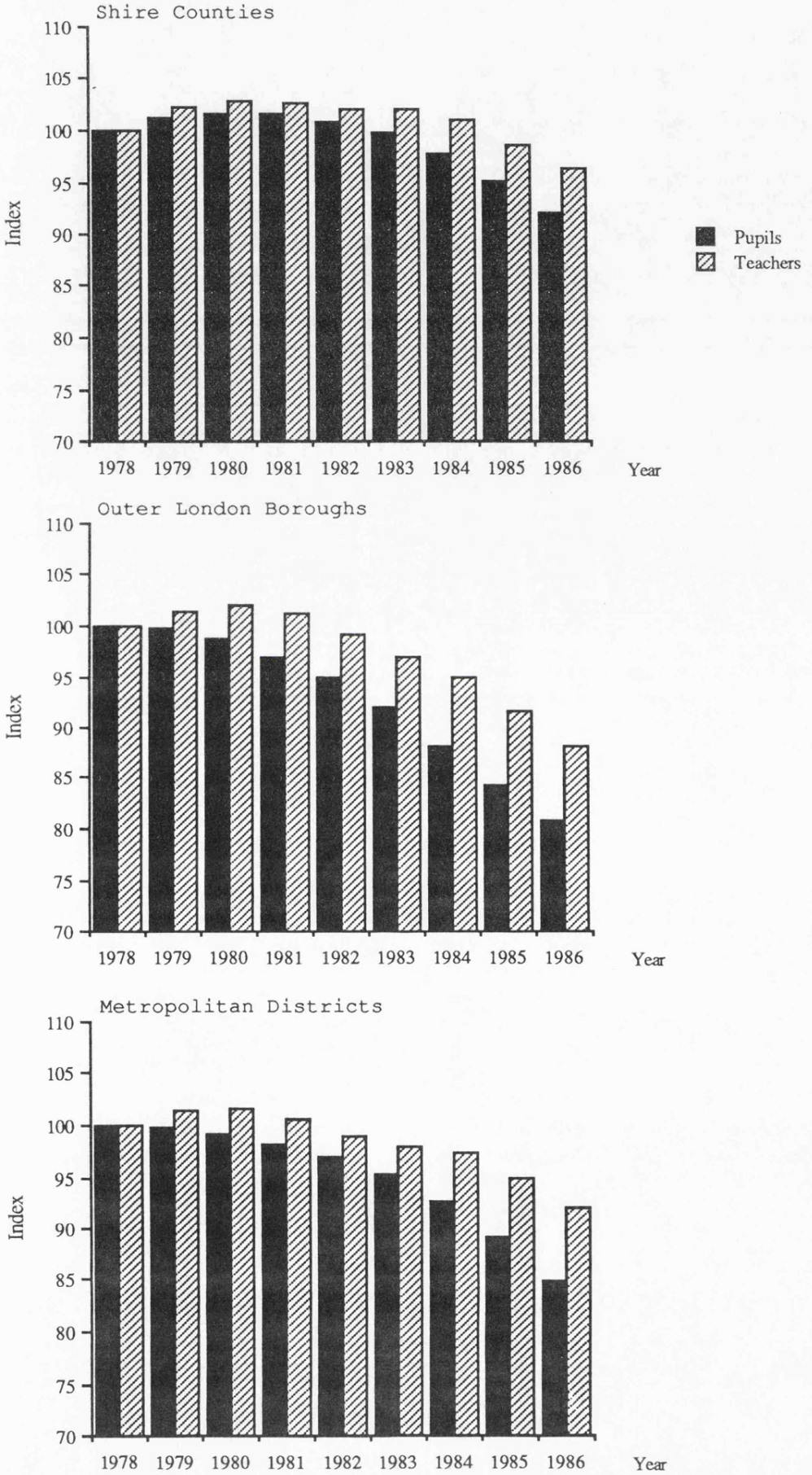
	ILEA	as % of OLB	OLB	as% of MD	MD	as % of Shires	Shires
1977/8	100	147	68	106	64	103	62
1978/9	107	139	77	106	73	108	68
1979/80	132	140	94	108	87	109	80
1980/1	168	146	115	110	105	106	99
1981/2	191	150	127	108	118	109	108
1982/3	199	143	139	107	130	106	123
1983/4	250	161	155	111	140	105	134
1984/5	273	158	173	118	147	105	140
1985/6	288	160	180	118	152	100	152
1986/7	287	N/A	N/A	N/A	173	104	166

Source: CIPFA, *Education Actuals,* relevant years.

of the Metropolitan Districts with respect to expenditure on books and equipment. Premises expenditure (which does not include staff) has been consistently higher in urban authorities, probably reflecting the higher running costs associated with an older building stock. The Outer London Boroughs remain ahead of the other classes on all counts, a result of both policy choice and the higher costs associated with the capital not least because of the London weighting applied to staff salaries. Whether the widening gap in teaching staff expenditure reflects increasing standards of provision for urban children is a moot point. At the very least it is partly an artefact of greater roll falls to date in urban areas and different management choices regarding the extent to which teacher numbers are reduced with pupil numbers. This comes out clearly in Figure 6.3: both the Outer London Boroughs and the Metropolitan Districts allowed their numbers of teaching staff to peak 2 years after their pupil numbers, whilst the Shires ensured they peaked in the same year. Comparing the classes at similar stages of contraction, it is evident that different types of authority have permitted gaps of varying sizes to open up between pupil and teacher numbers. Although Outer London Boroughs and Metropolitan Districts begun their decline at the same time, the rate of decrease in pupil numbers has been far greater in the London boroughs such that the Metropolitan Districts have lagged approximately a year behind. Thus, comparing the situation in the Metropolitan Districts in 1986 with the Outer London Boroughs in 1985, we find similar levels of teaching staff, but fewer pupils, relative to 1978, in the Outer London Boroughs. The latter have, therefore, managed contraction so as to produce more favourable levels of teacher provision. This has opened up a gap in PTRs as Table 6.18 shows. This is the result both of explicit policy and of the greater difficulty of reducing the size of the teaching force in line with more rapid falls in pupil numbers.

As for the Shire Counties, it is, as yet, too early to compare them properly against other authorities, but we have seen that the Shires have kept their teacher numbers much closer to their

Figure 6.3 Changes in indexed pupil and teacher numbers, 1978-1986, by type of LEA



Source: Calculated from CIPFA, *Education Actuals*, relevant years.

pupil numbers and lag some 2 years behind the Metropolitan Districts. This shows again in the difference between PTRs (Table 6.18). The gap between the Shires and the Metropolitan Districts first widens as the Metropolitan Districts begin their contraction, narrows as as the Shires begin theirs, then widens again as the Shires keep pupil and teacher numbers more in line with one another.

Changes in PTRs over time give some idea of the actual change in levels of provision, being a 'volume' rather than a monetary measure. In all classes of authority, levels of teaching staff have improved since 1977/8. What of the cost of provision in real terms? Figure 6.4 shows total unit expenditures since 1977/8. These have risen steadily for all classes of authority since that year, with the slowest period of growth for all classes of authority being between 1979/80 and 1981/2 when the effects of the new Conservative administration's policies began to be felt. This contrasts noticeably with the experience of total local authority expenditures in this period which has been discussed above (see Figure 6.2). Unfortunately, for the reasons already given, it is not possible to know if this represents an improvement or deterioration in *standards* in the context of the rising costs associated with falling rolls. However, it is significant that expenditure has continued to rise at a more or less steady rate, showing little evidence of being affected by changes in the wider fiscal environment; and it is reasonable to conclude that, in aggregate spending on secondary education has been comparatively well insulated from spending restraint. This is not necessarily true of other sectors of education and, as was noted above in the discussion of Education GRE, the non-discretionary nature of secondary schooling has probably done much to protect it. Another reason lies in the structure of the secondary education budget.

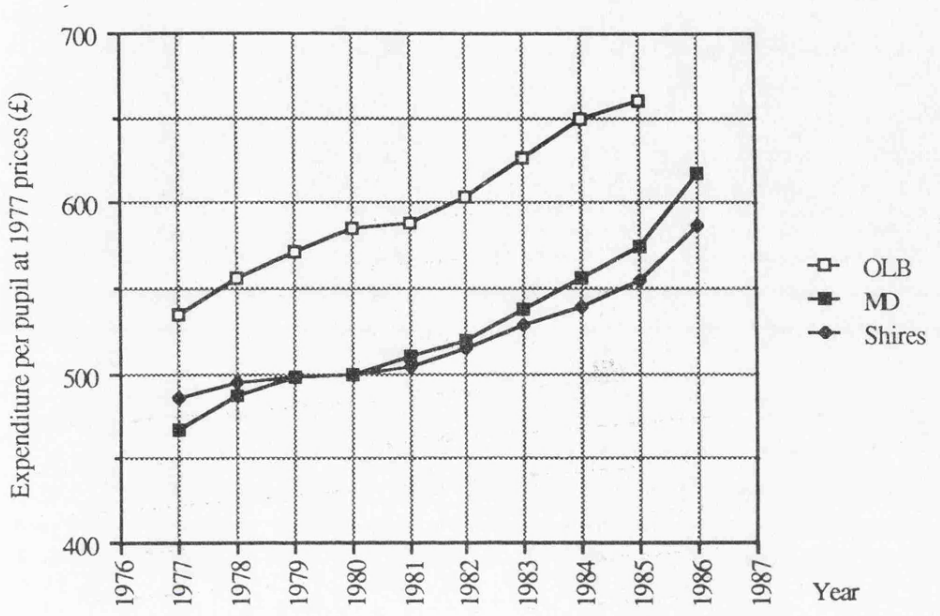
Most educational expenditure is consumed by teachers' pay. As has already been shown, this is the most difficult area to cut. Expenditure on teaching staff has risen steadily throughout the period (Figure 6.5). The first cuts of the Thatcher

Table 6.18
Secondary education pupil-teacher ratios by class of authority, 1977/8 to 1986/7.

	ILEA	OLB	as % of ILEA	MD	as % of OLB	Shires	as % of MD
1977/8	15.1	16.5	109	16.8	102	17.2	102
1978/9	14.9	16.1	108	16.5	103	17.1	104
1979/80	14.5	15.9	110	16.4	103	17.0	104
1980/1	14.3	15.7	110	16.4	105	17.0	104
1981/2	14.1	15.7	111	16.5	105	17.0	103
1982/3	13.8	15.5	112	16.4	106	16.9	103
1983/4	13.3	15.2	114	16.0	105	16.7	104
1984/5	13.1	15.1	115	15.8	105	16.7	106
1985/6	12.8	15.0	117	15.5	103	16.5	107
1986/7	12.6	14.8	117	15.1	102	16.2	107

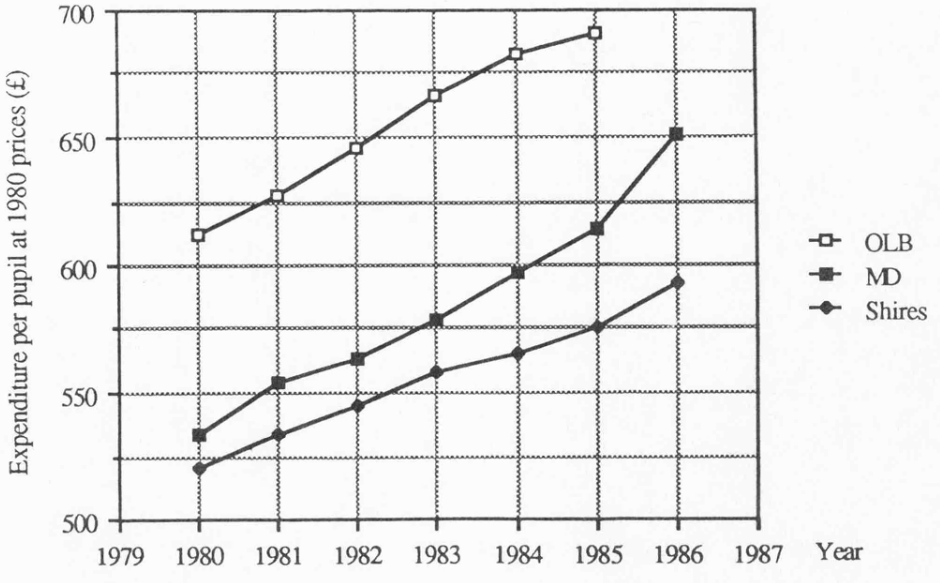
Source: CIPFA, *Education Actuals*, relevant years.

Figure 6.4 Changes in total gross unit expenditure on secondary education, 1977-1986, in real terms, by type of LEA



Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

Figure 6.5 Changes in unit expenditure on teaching staff, 1980-1986, in real terms, by type of LEA

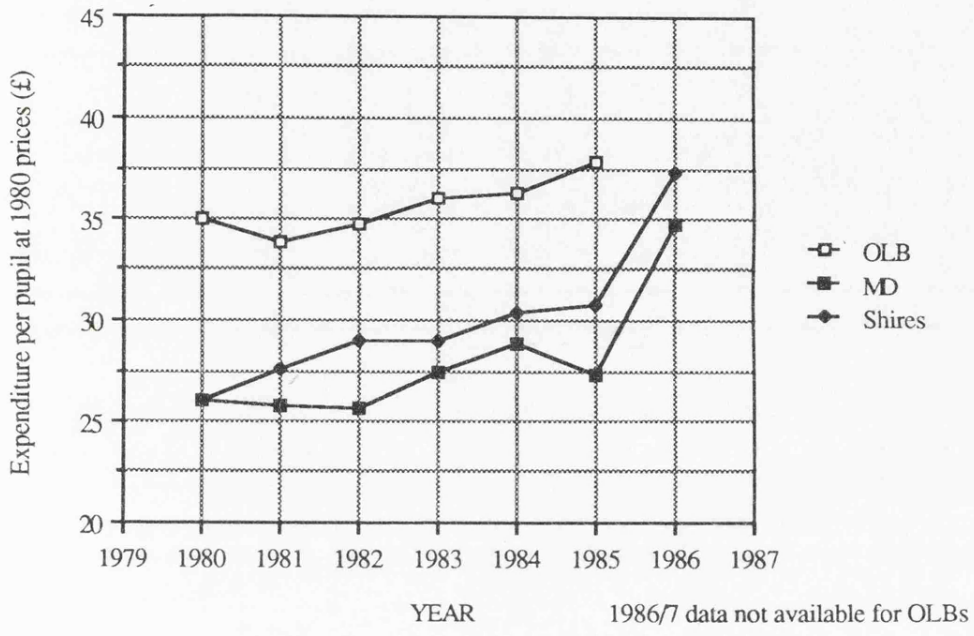


Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

administration - arguably the most severe - were borne outside of staffing in areas where reductions could be made more easily. This is shown by the data for expenditure in real terms on books and equipment (Figure 6.6) and on premises (Figure 6.7). For the Outer London Boroughs and the Metropolitan Districts, the first two years of the 1980s saw levels of spending on books and equipment below the 1980 level. Only in the Shires did provision improve in this period. From 1983, however, spending rose in all types of authority, dipping in 1985/6 in the Metropolitan Districts probably because of the effect of rate-capping. Premises expenditure shows a similar pattern of early cuts, which were more severe than in books and equipment, followed by recovery. The growing gap between Shire County and Metropolitan District expenditure on teaching staff was being used by the Shires to defend other areas. But the swings and roundabouts of budget reductions meant a significant cut in premises expenditure as a corollary. Whilst books and equipment and premises clearly bore the brunt of the cuts it is important to note that, because books and equipment expenditure is variable, the increases recorded after the initial reductions are, in fact, real increases. Premises spending, by contrast, is largely fixed, and, with falling rolls, unit costs should automatically rise to maintain standards. For this reason, the fluctuations experienced with premises expenditure imply significant problems. For books and equipment, any problems must stem from increased *demands* placed upon capitation to finance curriculum developments. The results of Chapter 5 show the problems science has experienced in this respect.

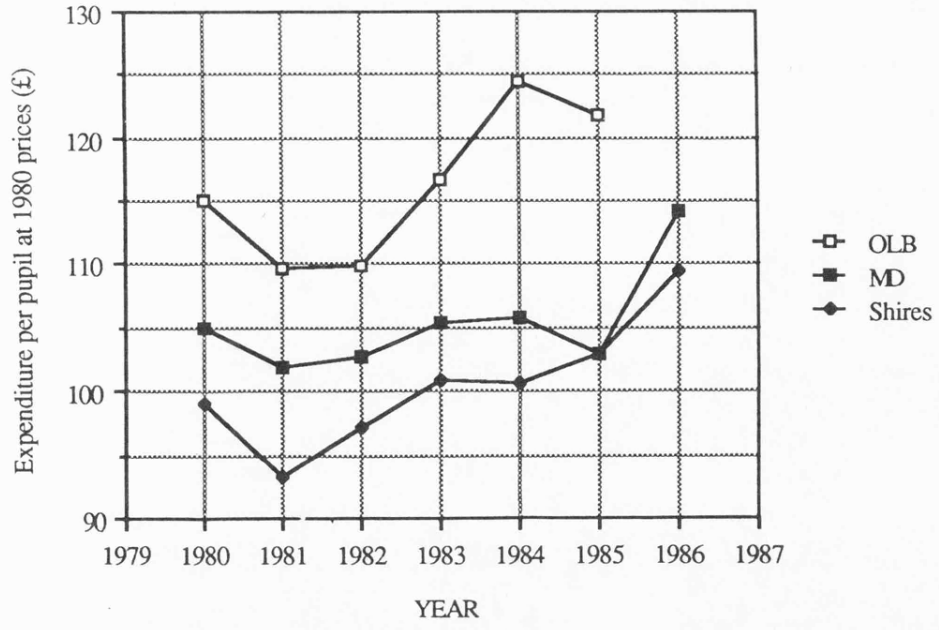
A further area which can be examined is *non-teaching staff.* Unfortunately, there are limitations on the data available. Comprehensive breakdowns of staff in volume terms are only available from 1982/3 onwards and, although expenditure figures are available prior to this, the difficulty of obtaining satisfactory deflators prevents their calculation in real terms. Moreover, care has to be taken since they are only available as estimates. However, it has been possible to construct volume measures for the three main categories of non-teaching staff

Figure 6.6 Changes in unit expenditure on books and equipment, 1980-1986, in real terms, by type of LEA



Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

Figure 6.7 Changes in unit expenditure on premises, 1980-1986, in real terms, by type of LEA



Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

using CIPFA education estimates. Tables 6.19 to 6.21 show the ratios of pupils to the three types of non-teaching staff for the four classes of authority from 1982/3 to 1987/8.

It is clear from these tables that non-teaching staffing ratios are significantly lower in the ILEA than the other three types of LEA. Differences between the remaining classes of authority vary between staff types. In educational support staff there is clearly room for great discretion and there are significant differences, with the Outer London Boroughs having the most favourable levels of provision followed by the Shires, followed by the Metropolitan Districts. For the other types of staff differences are more marginal reflecting the fact that expenditure here is affected more by technical considerations than policy choice. Nonetheless, a gap has opened in levels of premises-related staff, with the Metropolitan Districts reducing the ratio latterly and thereby opening up an important difference with the Shires.

In terms of changes over time, the pupil:educational support staff ratio has steadily fallen in all classes over the period. With the exception of the ILEA, where fluctuations have occurred, this has also been true of administrative and clerical staff. By contrast in all classes of authority, except the ILEA which has brought about a steady decline, the pupil to premises-related staff ration has fluctuated within a narrow band over time. Whilst it has been maintained at a fairly constant level in the Outer London Boroughs and the Shires, it has been reduced slightly in the Metropolitan Districts towards the end of the period.

To what extent these changes speak of deterioration or improvement is even more difficult to say than for teaching staff. With falling rolls, 'improved' (lower) ratios are necessary simply to maintain standards of provision. Without additional, detailed information it is impossible to know if this has been achieved for educational support staff. As for changes in the administrative/clerical and premises-related

Table 6.19
Ratio of pupils to educational support staff by class of authority, 1982/3 to 1987/8.

	Inner London Education Authority	Outer London Boroughs	Metropolitan Districts	Shires
1982/3	119	195	323	296
1983/4	112	192	308	282
1984/5	103	189	300	273
1985/6	86	175	290	267
1986/7	94	181	272	253
1987/8	93	166	262	227

Source: CIPFA, *Education Estimates*, relevant years.

Table 6.20
Ratio of pupils to premises-related staff by class of authority, 1982/3 to 1987/8.

	Inner London Education Authority	Outer London Boroughs	Metropolitan Districts	Shires
1982/3	53	95	98	111
1983/4	51	94	98	108
1984/5	48	100	100	114
1985/6	46	97	93	116
1986/7	44	97	91	113
1987/8	41	98	88	110

Source: CIPFA, *Education Estimates*, relevant years.

Table 6.21
Ratio of pupils to administrative and clerical staff by class of authority, 1982/3 to 1987/8.

	Inner London Education Authority	Outer London Boroughs	Metropolitan Districts	Shires
1982/3	206	339	330	326
1983/4	174	335	316	308
1984/5	171	328	294	288
1985/6	205	283	274	284
1986/7	163	275	268	283
1987/8	201	269	254	263

Source: CIPFA, *Education Estimates*, relevant years.

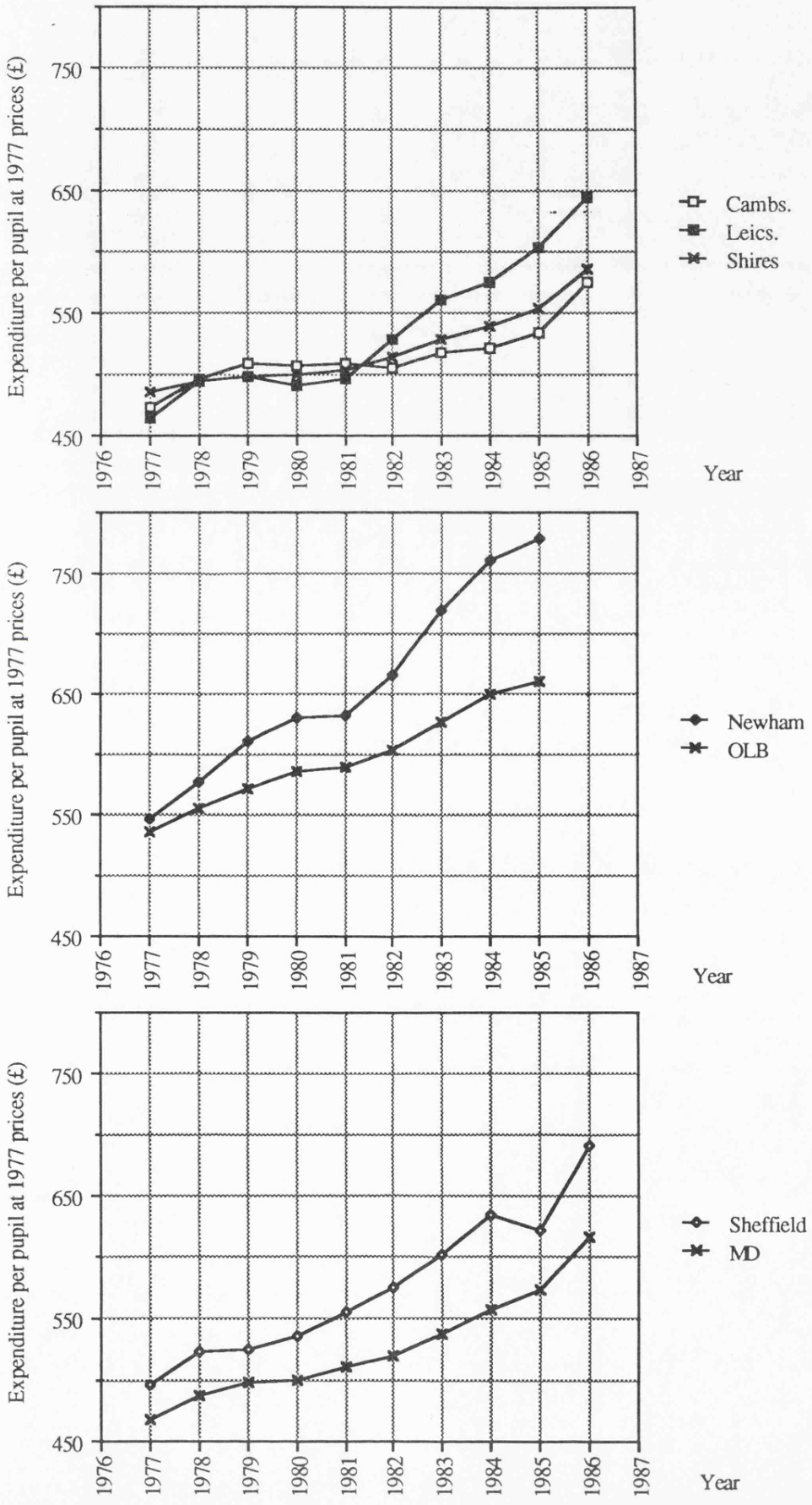
staff, these represent, to greater or lesser extents, more fixed costs that other staff. That is to say, the scope for reducing the number of secretarial staff or cleaners without adverse effects as pupil numbers fall is much less than for teaching staff. However, authorities have clearly used premises-related staff as a means of coping with the need for cuts. Fluctuations from year to year in the ratio are indicative of the difficulties LEAs have faced with contraction, and also of the fact that it has clearly been easier to realise cuts in staffing - or short-term lay-offs - here than elsewhere at short notice. The failure of the pupil to premises -related staff ratio to fall is alarming and confirms what was said above about the parlous state of premises expenditure.

Changes in the case studies

This general analysis can be taken further through detailed examination of the case study areas. The case studies reveal important differences between individual LEAs and the class averages just reviewed. In particular, they allow us to examine in detail the management of the changed resource environment in different contexts.

Figure 6.8 shows total gross unit expenditures on secondary education. There is a widening gap between all four authorities over time. Removing the averaging effects produced by classing authorities shows growing disparities between different sorts of authority and within ostensibly similar groups. Three out of the four case studies have climbed ahead of their class averages; only Cambridgeshire has fallen behind. These different trajectories are the result of varied environmental conditions - primarily the differential effects of block grant and demographic change - and the choice of different management strategies to cope with them. Thus, although Cambridgeshire, Leicestershire and Newham all exhibit an interruption to their established expenditure patterns in the early 1980s this varies from a stand still budget in 1981/2 for Newham to a reduction in real terms for Leicestershire in 1980/1 to a much larger

Figure 6.8 Changes in total gross unit expenditure on secondary education, 1977-1986, in real terms, by case study



Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

reduction and cut in 1982/3 in Cambridge. In the case of Leicestershire, the council change of 1982 coincides with a restoration of previous levels of spending. By contrast, Sheffield shows little interruption to existing patterns. Different LEAs were clearly working within different bounds.

All four LEAs show different patterns of falling rolls (Figure 6.9). Both Newham and Sheffield have lost more pupils than their respective class averages. Cambridge, on the other hand, has only just begun to show less pupils than it had in 1978. Leicestershire is more unusual still with a fairly constant school roll until decline began in 1983/4.

The accompanying contraction of the teaching force has been handled in very different ways. Cambridgeshire has managed to engineer a more than *pro rata* reduction, maintaining a remarkably constant PTR and in so doing moving above the county average (Figure 6.10). This raises important questions about curriculum protection. Leicestershire has shown a highly fluctuating number of teachers, which suggests some difficulty in coping with a changed environment but also accords with the changing political colour of the council in 1982 leading to a restoration of previous levels of staffing. Sheffield has steadily reduced its PTR, remaining below the average for its class. Newham stands out from the case studies as the only one or the four *not* to reduce its teacher numbers significantly: since 1981/2 its PTR has moved further and further away from the Outer London Boroughs average. Maintaining the teaching force in this way is suggestive of a strategy of using falling rolls to bring about genuine improvements in provision levels rather than merely protecting that which already exists, though curriculum protection staff have been appointed. Within these general approaches, it is important to note the cutback in teacher numbers around 1981-1982, which also took place in Leicestershire, and to a lesser extent in Cambridgeshire and Sheffield. This is clearly related to the shock-waves of the new grants system and the general fall in local authority expenditure already noted. In the case of Newham, the

Figure 6.9 Changes in indexed pupil and teacher numbers, 1978-1986, by case study

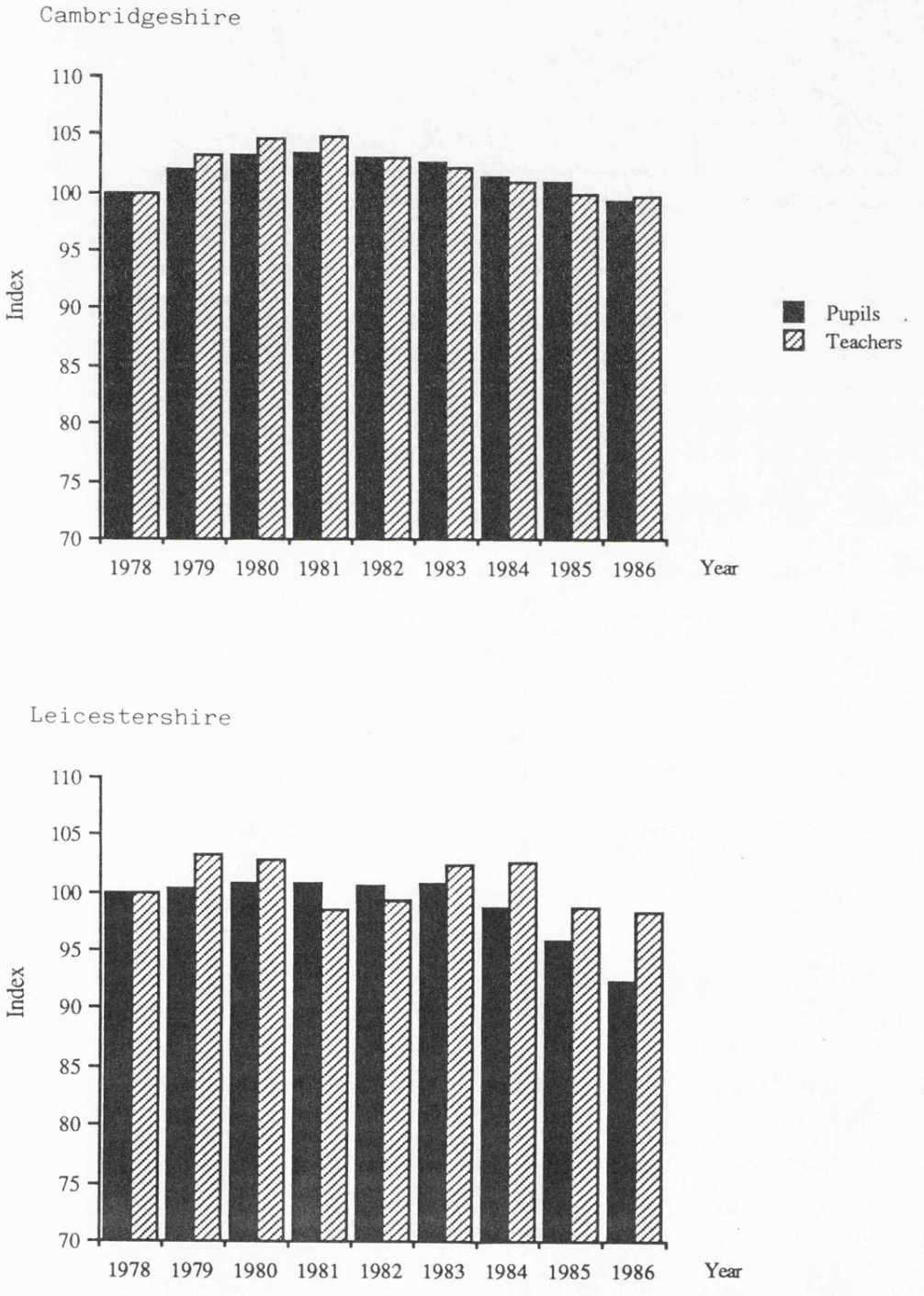
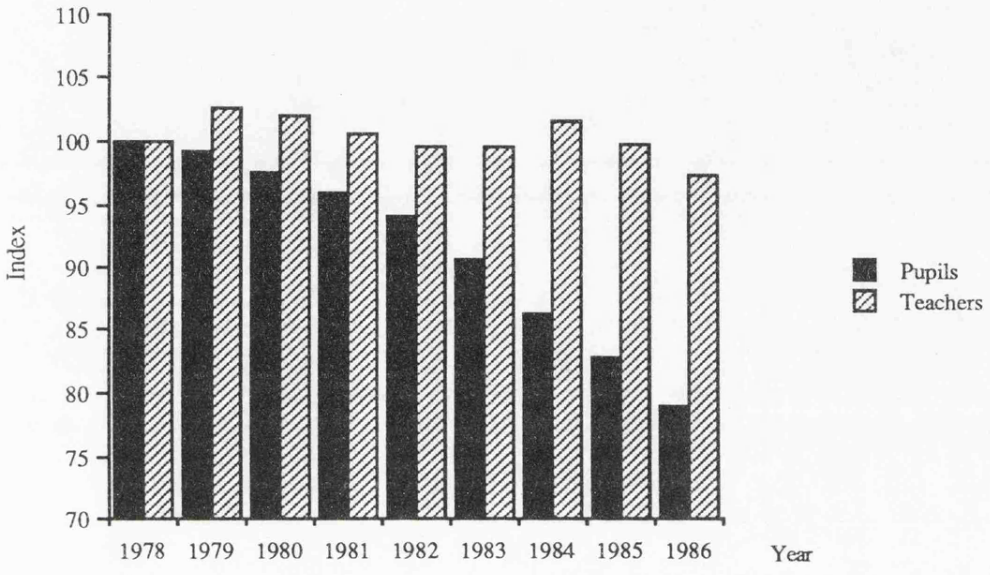
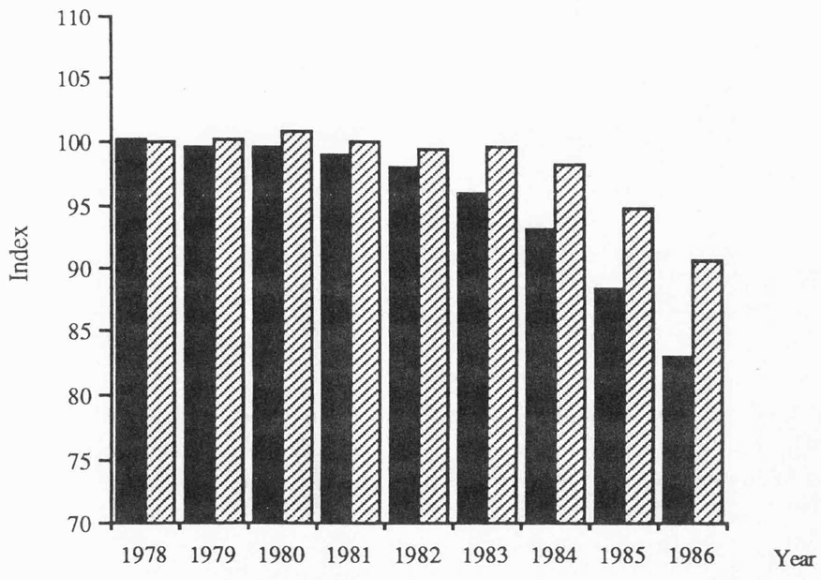


Figure 6.9 contd.

Newham

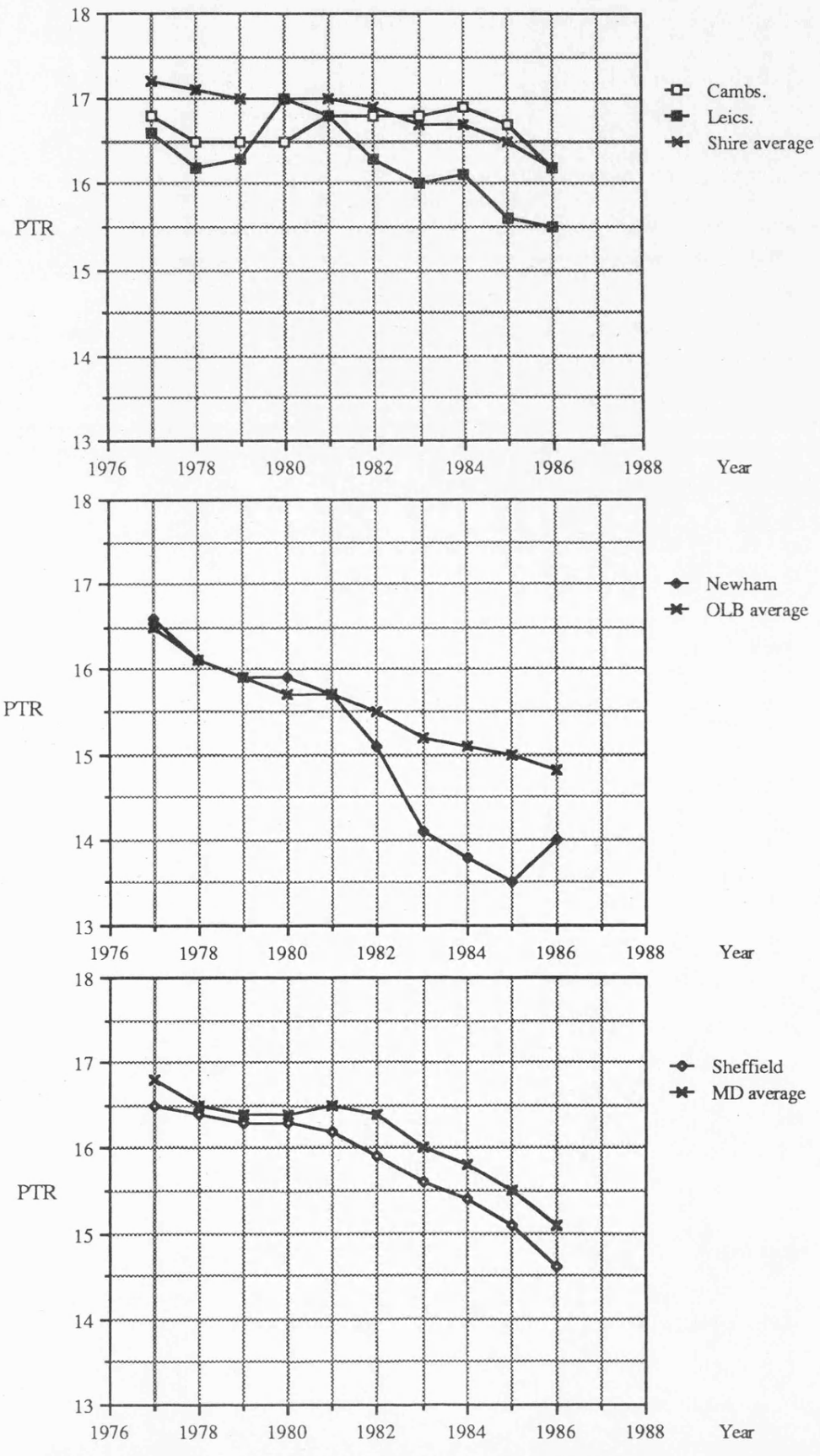


Sheffield



Source: Calculated from CIPFA, *Education Actuals*, relevant years.

Figure 6.10 Changes in PTRs, 1977-1986, by case study



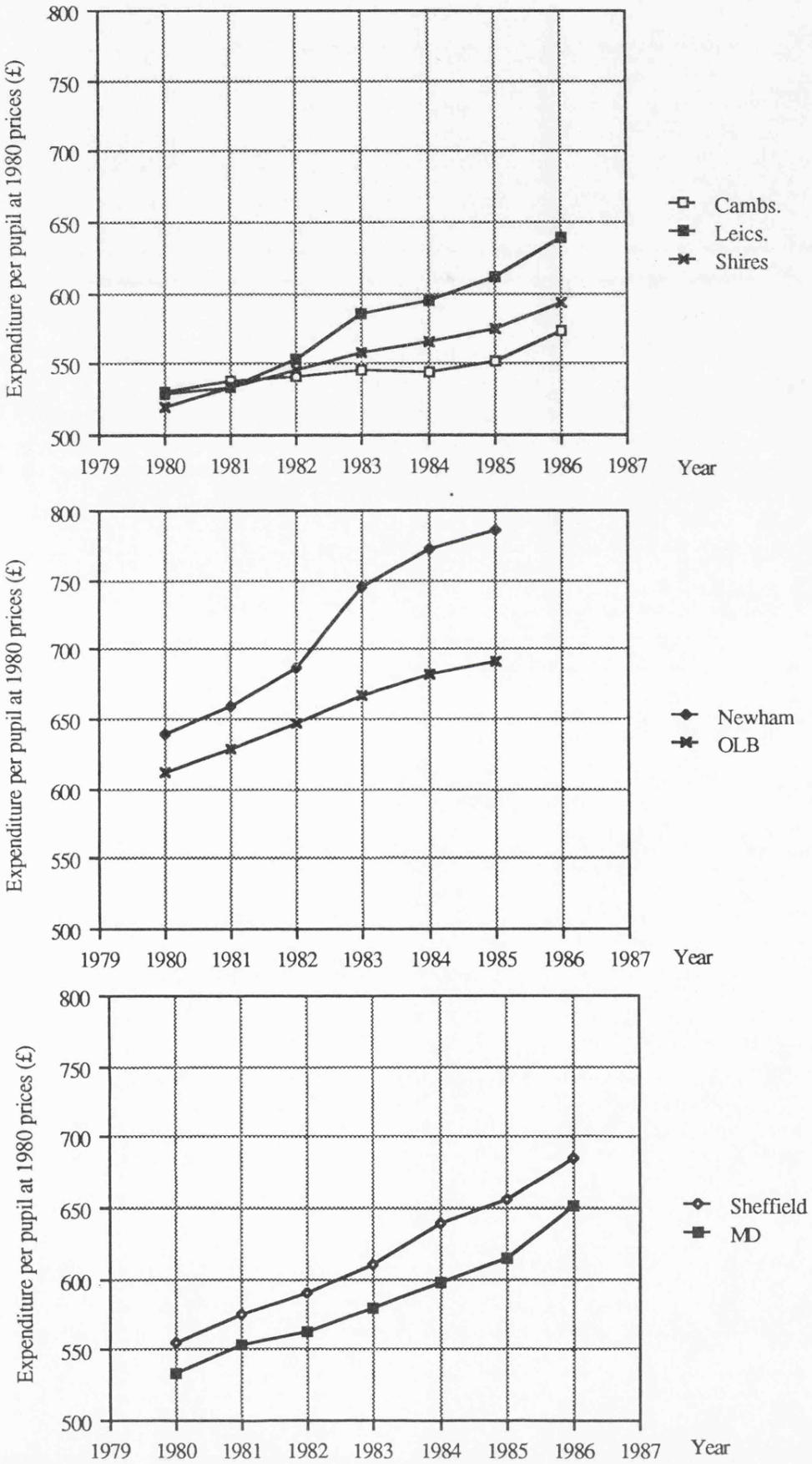
Source: CIPFA, *Education Actuals*, relevant years

determination to maintain staffing levels is also clear. Indeed, faced with rate-capping in 1987/8, Newham ruled out teacher redundancy, partly because of its policy on resisting cuts, but also because of the particular ideological problems faced by Labour authorities in confronting teacher unions on the need for staffing reductions.

The large roll falls experienced by urban areas in the early 1980s arguably circumscribed the room for manoeuvre of authorities such as Sheffield and Newham in so far as costs were rising as resources were being cut. Cambridge was in a better position to cope since it was not faced with such difficult choices about curriculum protection and could opt for a more or less constant PTR. As was shown in Chapter 2, if basic knowledge of what was being provided in school was itself scarce in most LEAs, trying to assess the implications for the curriculum in any coherent way was quite beyond reach for many at the time. The case studies were very differently placed with respect to their abilities to make this type of assessment. Taking the collection of curriculum data as an indicator of this, Sheffield was clearly best placed, having collected data since the 1970s. Cambridgeshire had also moved in this direction relatively early, collecting data from 1982/3. Leicestershire and Newham were not in this position until 1985/6 and 1986/7 respectively. In terms of the constraints imposed by central government, Newham and Sheffield were under more pressure to curb spending through the grant system than Leicestershire and Cambridge. Moreover, the two shires appear to have reacted to the initial pre-block grant constraints of 1980/1, whilst Newham waited for the new system itself to modify its spending, and Sheffield pushed on regardless.

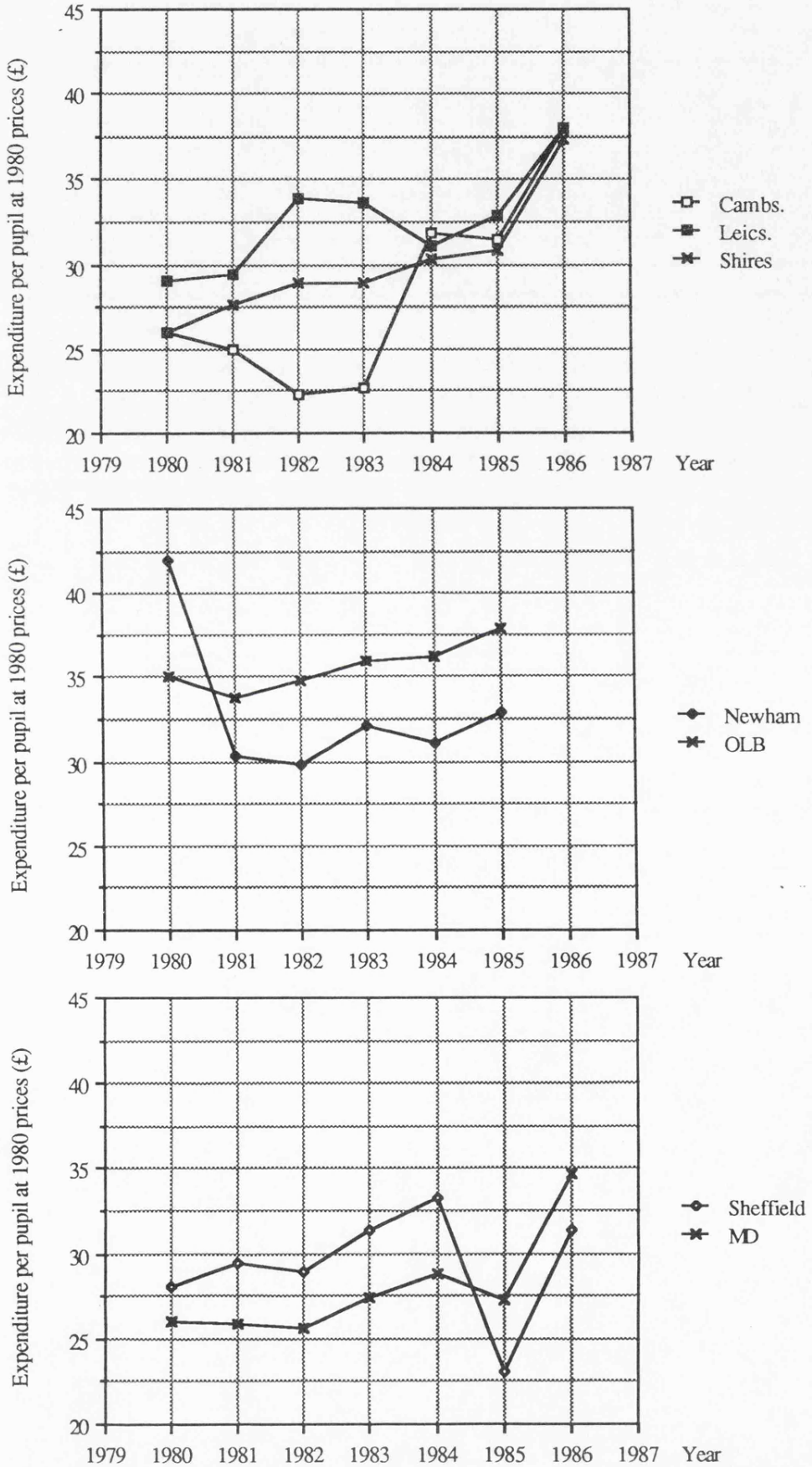
Within this general trend, spending on teaching staff was maintained or increased throughout the period in all the LEAs (Figure 6.11). Once again it is in the other areas of expenditure that real cuts were made. Figure 6.12 shows the instability in expenditure on books and equipment and the different strategies pursued in coping with constraint.

Figure 6.11 Changes in unit expenditure on teaching staff, 1980-1986, in real terms, by case study



Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

Figure 6.12 Changes in unit expenditure on books and equipment, 1980-1986, in real terms, by case study



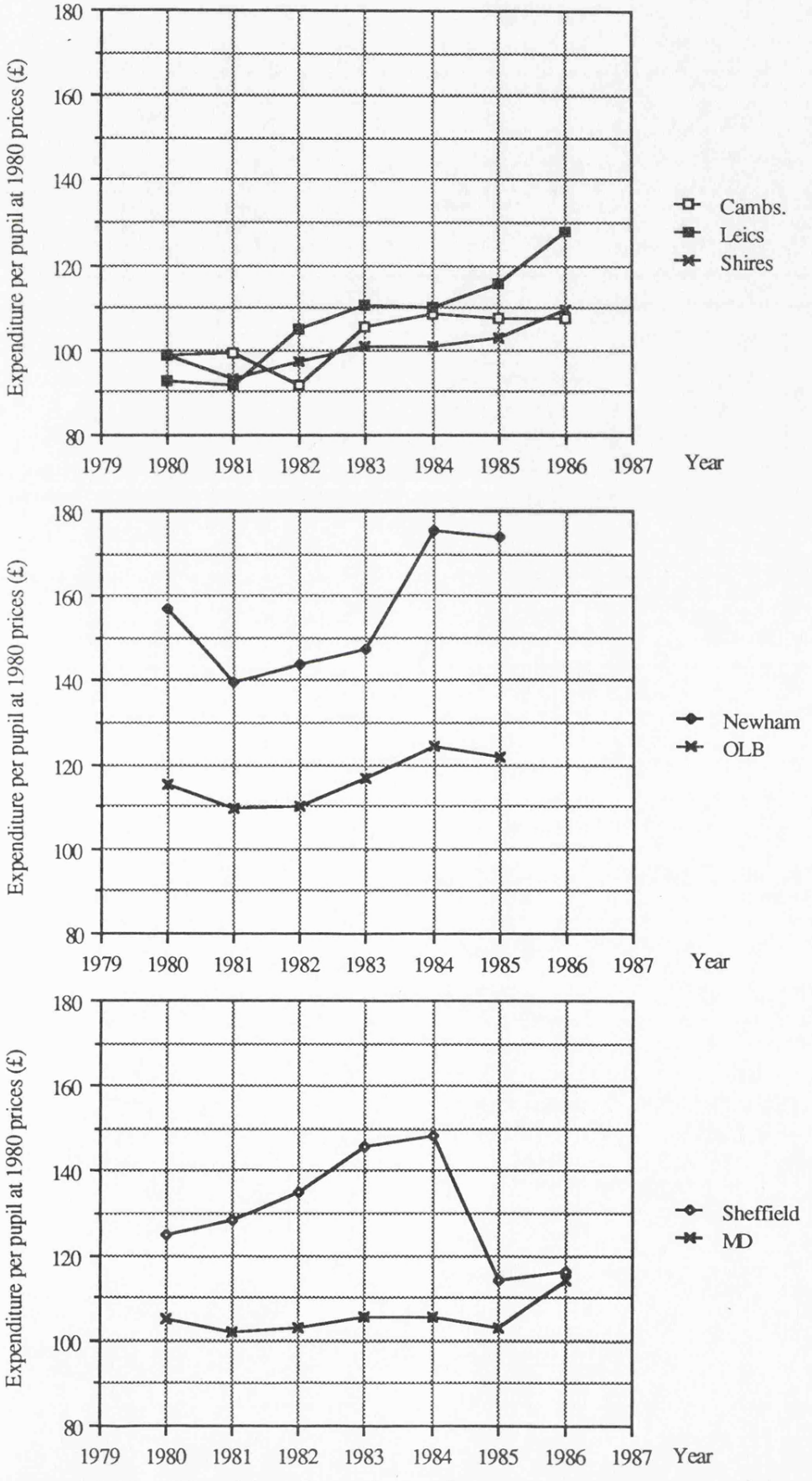
Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

Leicestershire attempted to increase expenditure only to be forced into cuts in 1983/4 and again in 1984/5 to end up only marginally above its 1980/1 level, whilst Cambridgeshire tried to compensate more latterly for earlier reductions. Sheffield seems to have kept largely in line with Metropolitan District trends but suffered severely when it was rate-capped in 1985/6, whilst Newham has fallen behind the Outer London Boroughs average (though there is reason for suspecting that 1980/1 was an unusual year). In all cases the picture which emerges is one of erratic, unpredictable change from year to year. These year-on-year fluctuations and instabilities in the experience of individual authorities are hidden by the averaging effect of classing LEAs, but have been an important feature of expenditure trends outside teaching staff.

The same picture is true for premises expenditure (Figure 6.13). Costs here have remained high for the urban authorities compared to the counties because of the difficulties of older buildings. In the cases of Newham and Sheffield, costs have remained well above their class averages, whilst the two Counties have fluctuated about their class average from year to year. Sheffield is unusual in the way it has moved dramatically away from the average for its class; its experience has been quite different. In Newham and Cambridgeshire premises expenditure saw significant reductions in 1981/2 and 1982/3 respectively. Given the fixed nature of costs in this area, these falls could have led only to a deterioration in standards

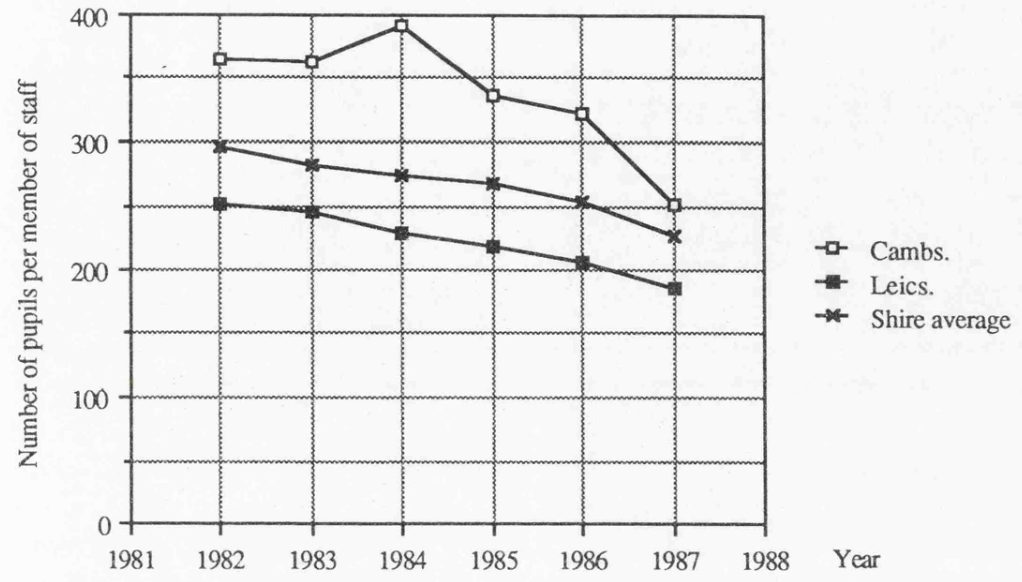
The results for non-teaching staff, show important differences between the case studies (Figures 6.14 to 6.16). Newham and Sheffield have in general treated their non-teaching employees in a similar way to their teachers, that is, they have brought about steady decreases in the numbers of pupils relative to each of the three types of employee. This stands them in contrast to their class averages in the case of premises-related staff, where there have been fluctuations over time. Throughout the period Newham and Sheffield have had more generous ratios in these areas than their class averages - with the exception of

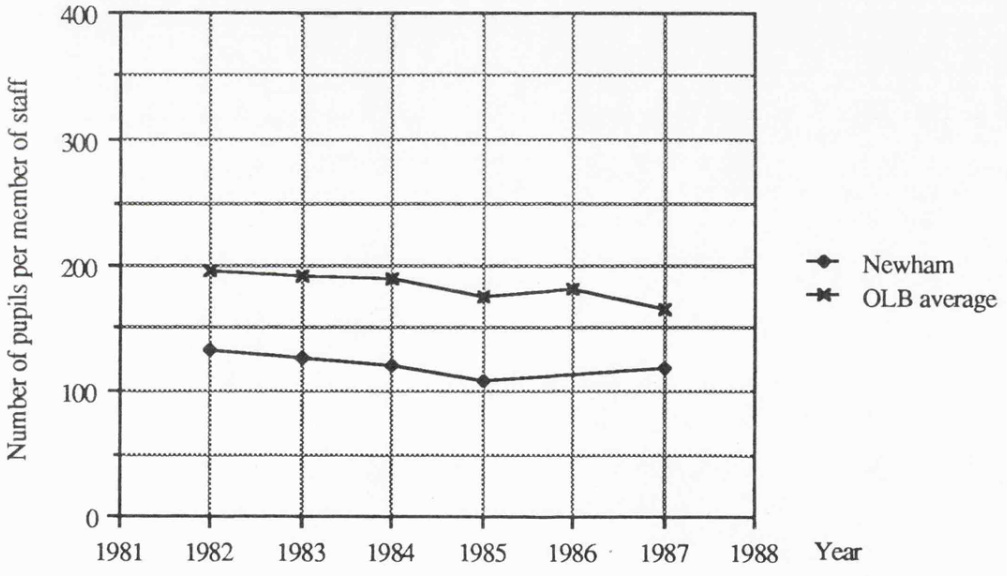
Figure 6.13 Changes in unit expenditure on premises, 1980-1986, in real terms, by case study

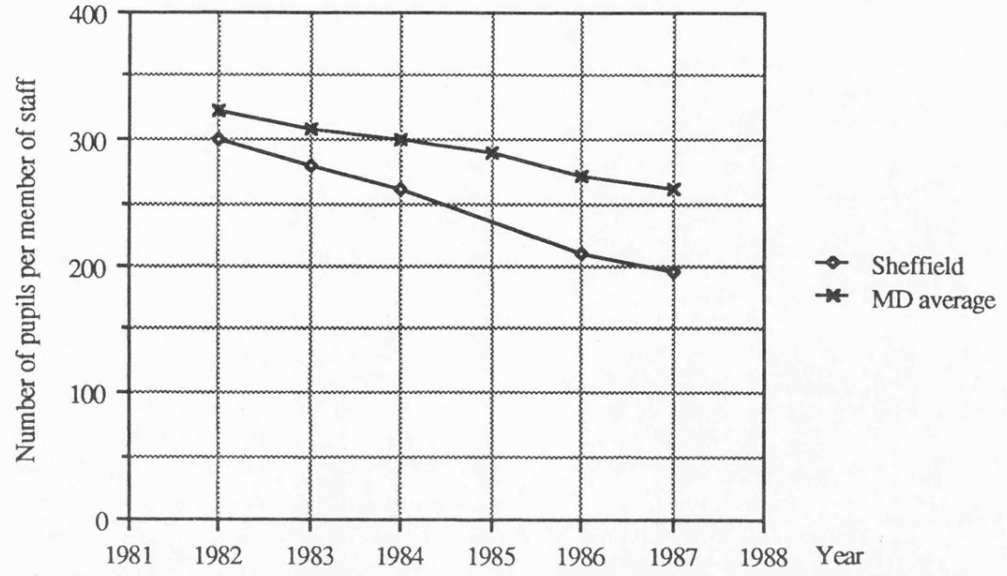


Source: CIPFA, *Education Actuals*, relevant years, corrected to real terms

Figure 6.14 Changes in ratio of pupils to educational support staff, 1982-1987, by case study

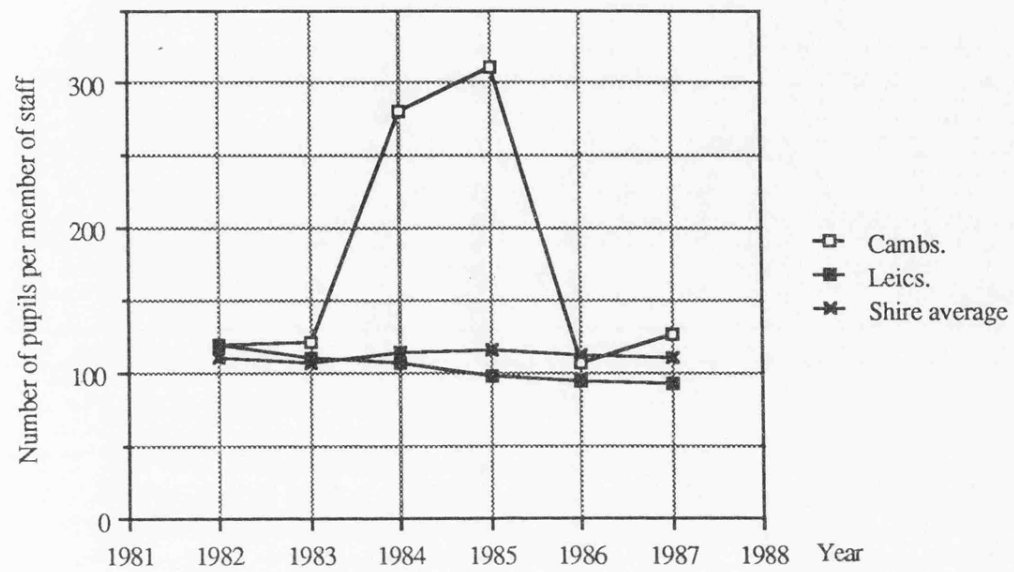


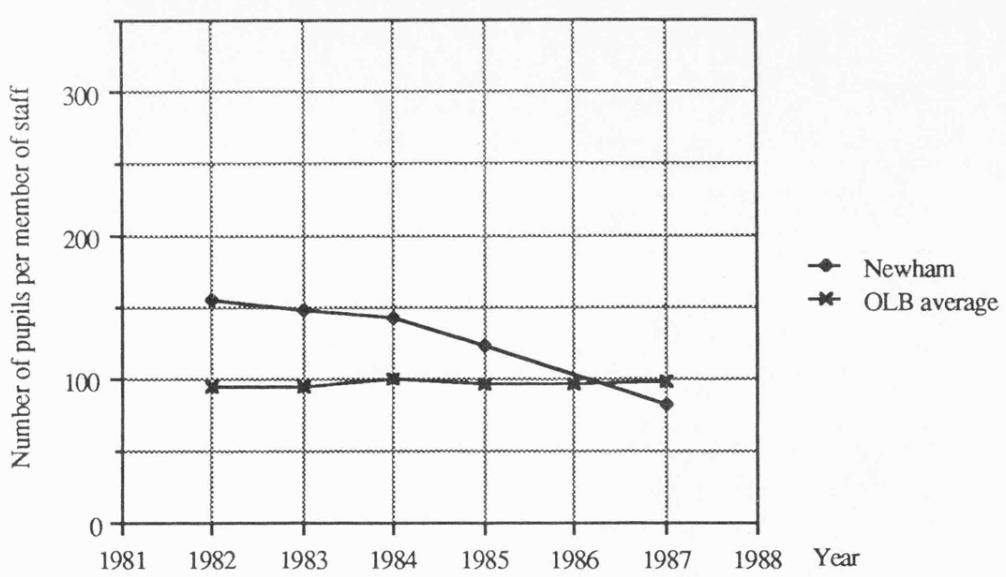


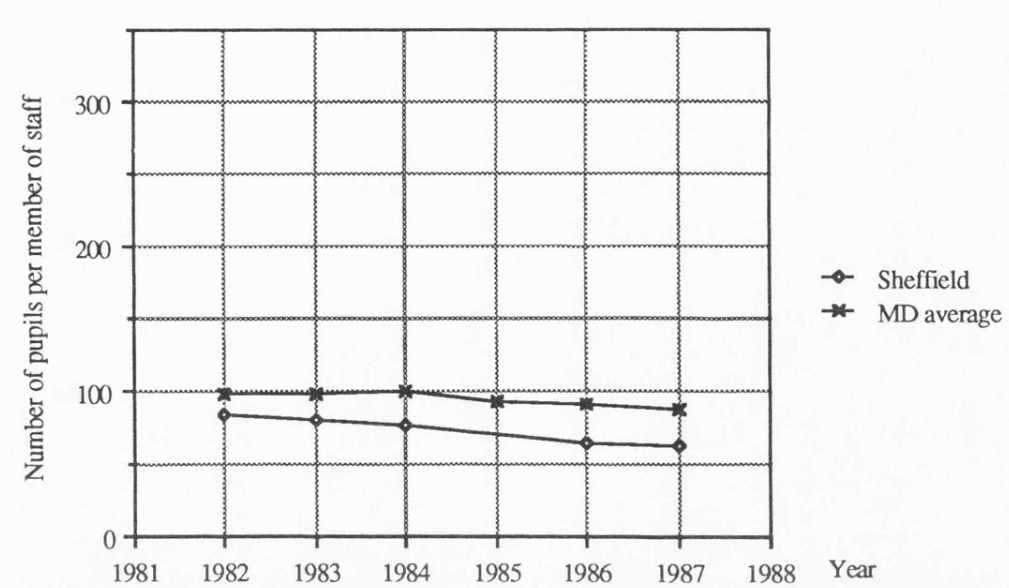


Source: Calculated from CIPFA, *Education Estimates*, relevant years

Figure 6.15 Changes in ratio of pupils to premises-related staff, 1982-1987, by case study

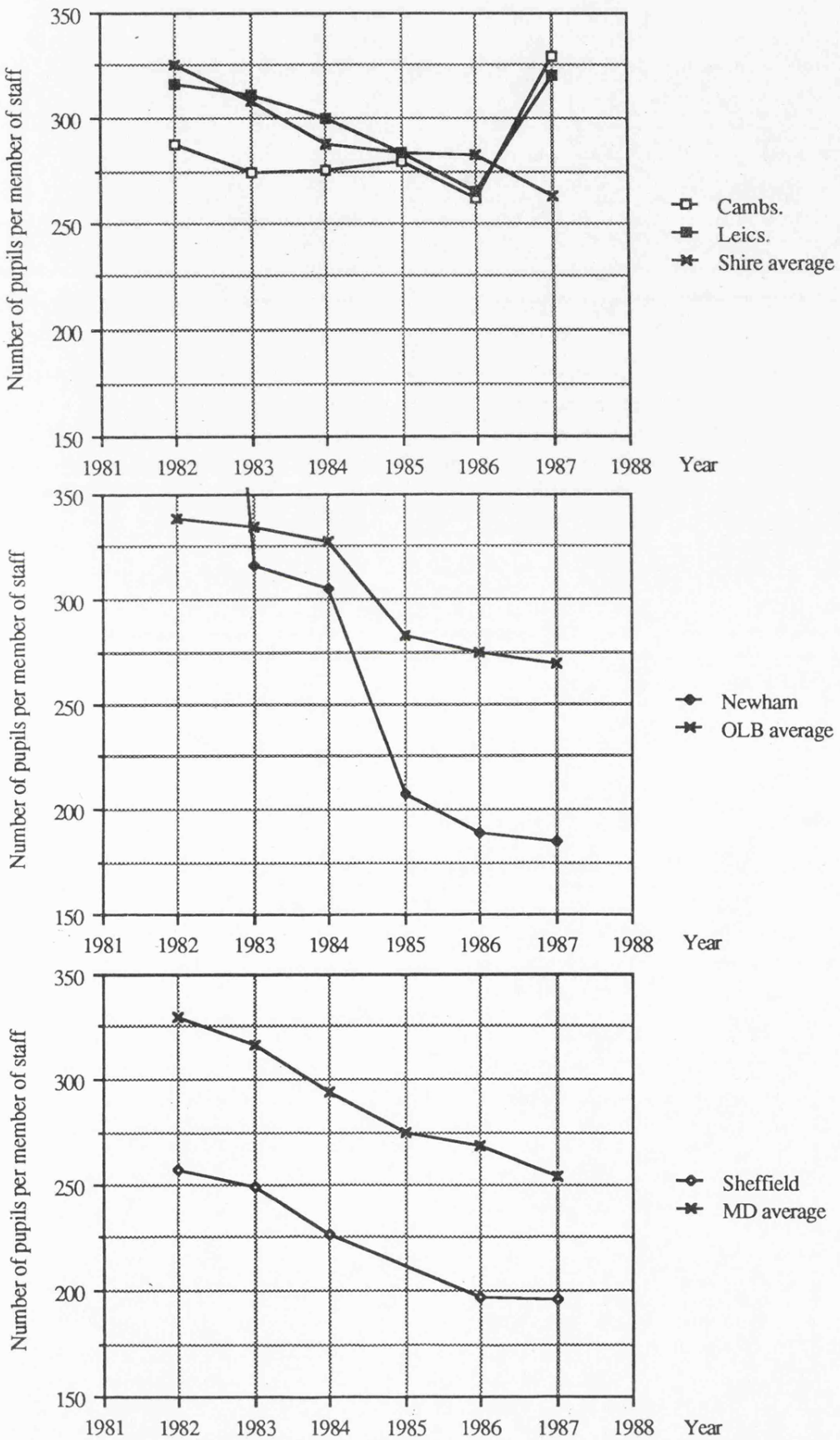






Source: Calculated from CIPFA, *Education Estimates*, relevant years

Figure 6.16 Changes in ratio of pupils to administrative/clerical staff, 1982-1987, by case study



Source: Calculated from CIPFA, *Education Estimates*, relevant years

premises-related staffing in Newham, but even here its declining ratio in the context of a fluctuating class average means that it ends the period with more favourable provision. Leicestershire has also engineered a reduction across all types of pupil:non-teaching staff ratio, with an increase in 1987/8 for administrative/clerical staff. In support staff and administrative/clerical staff up to 1987/8 it maintained better levels than its class average; it has moved into more generous levels for premises staff because of consistent reductions. By contrast, Cambridgeshire shows a very different pattern of yearly fluctuations, with significant *increases* in the ratios for support staff and, even more so, premises staff in 1984/5, returning to better than previous levels in the following year for support staff and in 1986/7 for premises-related. Administration/clerical staff also exhibit fluctuations. Cambridgeshire has followed a very different pattern to the class average in all three categories.

It is clear that there are important differences between individual LEAs not apparent from the class analysis. This applies particularly to premises-related and administrative/clerical staff where the differences between the classes are marginal but between the case studies highly significant. Over time, Sheffield has clearly used falling rolls to improve its level of support staff, bringing itself close to Leicestershire. Newham has kept its pre-eminently generous position, whilst Cambridgeshire has continued to have poorest staffing levels. As regards premises-related staff, differences between authorities have always been less, but with falling rolls Cambridgeshire has barely altered provision whilst it has risen in the other three, leaving its ratio twice as great as Sheffield's. For administration/clerical staff, Newham has considerably raised costs here whilst once again Cambridgeshire has merely maintained staffing levels.

6.5 Conclusions

This chapter allows a number of important connections to be made between changes to grants and patterns of aggregate local authority expenditure. The major changes in grants correspond to significant shifts in total local spending. However, secondary education tells a slightly different story. Growth in total secondary spending per pupil, analysed by type of authority, has been barely affected. However, given the tendency for unit costs to rise with falling rolls because of fixed costs whch need to be covered, the reduction in the growth rate of unit costs in the early 1980s may have led to a fall in standards. Moreover, the aggregate figures paint an over-favourable picture because of the dominance of teachers' salaries in the structure of costs. Hence, higher costs may merely reflect teacher costs, not changes in inputs. The findings presented here show that expenditure on teachers has been spared the main impact of resource constraint. Savings have been sought in more 'cuttable' areas - books and equipment, premises and non-teaching staff. With teaching staff secure in their posts, annual budgeting has focused on other areas. However, it is also clear that in books and equipment the much-vaunted difficulties in provision will have stemmed not so much from cuts in real terms but from increasing demands.

The findings for the case studies illustrate the need to compare individual LEAs as well as groups of authorities. Looking at the data as a whole for the case studies shows that in terms of aggregate spending on secondary education the urban LEAs have widened the gap over the Counties. Cambridgeshire has maintained a remarkably constant total unit cost, whilst changes in Leicestershire's costs correspond to its changing political circumstances. These differences are largely due to differences in staffing and, to a less extent, premises costs. In books and equipment differences between the case studies are much less clear cut due to the fluctuations, and it is interesting to note that the Counties as a whole have tended to make better

provision than the Metropolitan Districts in this area. A similar ambiguity characterises the other key area of discretionary spending, non-teaching staff.

The other main features to emerge from the analysis of the case studies are the great variety of approaches to the management of contraction and the increasing divergence of provision between individual LEAs. These are the result both of differences in the nature of the constraints circumscribing local action (principally the severity of falling rolls and the different impact of grant changes) and local policy choice. Newham and Sheffield faced much more severe difficulties with falling rolls than Cambridgeshire and Leicestershire and this exacerbated the problem of finding savings when costs were rising so rapidly. Sheffield in particular felt under pressure from the effects of the new block grant. Nevertheless, the case study authorities chose to pursue very different policies with respect to education. The fluctuations in provision in Leicestershire vividly illustrate the effect of politics. Newham and Cambridgeshire clearly stand at opposite poles in their management of the teaching force, the former staunchly refusing to reduce teaching staff, the latter keeping the two in line and maintaining remarkably stable costs. Outside staffing, the case studies reveal the considerable difficulties LEAs have faced in balancing their books. The over-riding feature is instability, especially in books and equipment. The constantly changing grant regulations of the first half of the 1980s clearly rendered planning very problematic, if not impossible, and ensured that cuts were made in areas where this could be done most easily. The fluctuations this produced were a particular problem for Cambridgeshire in the area of non-teaching staff.

Having examined in detail the distribution of resources between LEAs, the next chapter examines the allocation of resources to schools *within* the case study areas.

CHAPTER 7: AN ANALYSIS OF RESOURCE VARIATION AT SCHOOL LEVEL

7.1 The nature of variation in school resources

Chapter 6 examined the distribution of resources between LEAs and showed how the case studies had managed exogenous forces of change over the first half of the 1980s. In this chapter I shall examine the distribution of resources between schools within those areas during one year, 1986/7.

Chapter 3 showed that little is understood about variations in resources between schools. Whilst it is known that per pupil expenditures vary between schools more than between LEAs, the magnitude of this variation has seldom been explored in detail and the reasons behind it remain obscure. There are two main explanations offered for variation: one focuses on the technical aspects of variation; the other seeks a socio-structural explanation. The technical approach regards school variations as the result of differences in costs. The socio-structural explanation seeks to relate resource allocation processes to wider social structures and to identify discrimination in those processes.

This chapter examines each of these approaches through an empirical assessment of patterns of resources at the level of the school for the four case study LEAs. It is not intended to rehearse in detail the assessments of the literature on this subject since this can be found in Chapter 3. However, discussion of the key criticism of both of these appoaches is necessary for the analyses which follow.

A problem common to both approaches is the failure to give sufficient thought to the *different* expenditures which make up total spending prior to the examination of their causes. Different expenditures quite clearly raise different issues. Some costs are directly linked to policy choice whilst others are related more to technical issues or are committed costs.

Yet these tend to be treated in the same way, as if they ought to vary according to the same factors. The most significánt difference is between those aspects of expenditure which represent technical costs and those which might be more accurately referred to as 'provision'. This distinction is related partly to whether a cost is fixed or variable and whether it is subject to policy choice as articulated through the annual budgetary process. But it is also bound into the extent to which political debates surround particular expenditures.

Whilst all expenditures are potentially political to the extent that they relate to the distribution of resources amongst schools, some are patently prone to more debate than others. Thus, for example, building costs such as heating and lighting are affected by objective factors, in this case building design, much more than, say, PTRs. PTRs are more directly concerned with the educational process and the distribution of staffing is inately political, especially where officer discretion is involved.

In practice this distinction is blurred: the room for annual variation in any area is marginal, and decisions which in one year are political, such as the construction of village colleges in Cambridgeshire, have consequences for costs in subsequent decades which are more technical. There is no simple division and because of this it is best to envisage a spectrum.

In this Chapter I examine the effect of different factors on the distribution of resources between secondary schools. The next section examines the relationship between the distribution of the single most important resource, teaching staff, and the three factors which in general are most likely to affect it: school background, school size and post-16 provision. The analysis examines the extent to which these factors are related to one another in the different case studies in one year, 1986/7. Other local factors are also examined. The relationships are explored using Spearman's rank correlations

and scattergrams. Because of their very different backgrounds, the case studies allow the assessment of the relative importance of the factors in different contexts.

The chapter provides the only systematic, up-to-date exploration of these relationships; and it provides the essential context for the analysis of how the distribution of staffing is translated into the curriculum (which is presented in Chapter 9). The next section establishes *a priori* the possible relationships between teaching staff and the other variables.

The chapter also presents a detailed analysis of 'other' school costs. Unfortunately, this has been possible in only one of the authorities, Cambridgeshire. In Leicestershire and Sheffield, unit costs were not available to the author, whilst in Newham the data were not satisfactory and the system of monitoring costs was not well developed at the time the analysis was carried out. Nevertheless, the analysis allows the examination of relationships common to other LEAs. The costs are related to a series of factors: socio-economic context, school size, post-16 provision, school/college designation and Area. The literature pertaining to each of these factors and their hypothesised effect on costs is considered at the start of each sub-section.

7.2 Variations in staffing: data used and theoretical relationships to other factors

This section describes the variables used in the analyses which follow and the relationships which it is commonly suggested should exist between them. We begin with the independent variable, teaching staff.

Teaching staff: Pupil:teacher ratios (PTRs) provide the measure of teaching staff in each LEA. In addition to analysing this measure of staffing, it was also possible in three of the LEAs (Cambridgeshire, Newham and Sheffield) to examine teacher 'quality' to the extent that this was indicated in the Burnham

grades of teachers which then pertained (the system has since been superseded).

The Burnham system controlled teachers' salaries and rank. Teachers began their careers on Scale 1 and progressed upwards. The distribution of teachers across the scales in any one school was the result of a trade-off between number of staff and their grades. Each school had a number of points allocated to it from which it could select staff up to, but not exceeding, its points total. A Scale 1 teacher represented one point, a Scale 2 two points and so on. Points were allocated to schools by LEAs according to a national scale of school size and pupil age, which determined each school's *unit total*. The unit total also determined the highest scale for an assistant teacher. The national scale gave LEAs discretion to allocate points within given ranges according to unit total. Thus schools in the same LEA within the same band could have different point allocations depending on local priorities. The unit total also determined which group a school fell into for the purposes of allocating heads and deputy heads.

Two measures of teacher quality can be derived from this system: the number of pupils per Burnham point; and the percentage of staff on Scale 1. The former gives an indication of the total 'quality' of teaching resources available. The latter indicates how those staff are distributed across the teaching grades - for example, whether a school has a large proportion of less experienced staff on lower grades.

Socio-economic background: The socio-structural interpretation of resource allocation argues that observed distributions are related to the socio-economic background of pupils to the detriment of the disadvantaged. The pervasiveness of this view should not be underestimated. There is a widespread belief that 'where a policy of positive discrimination is not instituted, disadvantaged children may well attend schools which are less well provided for than schools attended by their more advantaged peers' (Sammons *et al*, 1983). This disadvantage can take the

form of attending small rural schools (see Boulter and Crispin, 1978), but is usually taken to mean the social and economic disadvantage of inner city populations (see Shipman and Cole, 1975; Bondi, 1987). Compensating for this disadvantage through the allocation of additional resources dates back to the Plowden Report of 1967 which promulgated the notion of Educational Priority Areas. As a consequence of this report a number of urban LEAs (including Sheffield) introduced extra allocations of staff and capitation to schools with deprived catchments which continue to this day. However, it is one thing to claim that extra resources are necessary for deprived pupils and another that deprived pupils attend deprived schools. Yet the two have tended to be run together. Despite its prevalence, there is little empirical support for the idea of discrimination. The following sections explore the relationship between school context and teaching staff.

Finding a suitable indicator of school background raised a number of practical difficulties. LEAs have themselves come face to face with these problems with recent pressures towards monitoring and evaluation. The traditional approach of using census data, which has been used by authorities such as the ILEA in the formulation of positive discrimination schemes, is highly complicated, time consuming, and, as a result of parental choice legislation, increasingly irrelevant. Secondary schools no longer have immutable geographical catchments. A solution is provided, however, by data on the proportion of students entitled to free school meals (FSM). This provides a crude yardstick of school background, though it misses the nuances of social and economic relations. Free schools meals data provide the indicator in three of the four case studies. In Sheffield it has been possible to use the Index of Net Disadvantage (IND) used for the allocation of extra resources to deprived schools. In theory, this provides a more accurate reflection of the characteristics of school catchments. However, it needs to be borne in mind that apart from the problem of parental choice already mentioned, the IND is based upon 1981 census data and is likely to have become somewhat outdated by 1986/7.

School size: School size is liable to affect staffing levels because of the need to provide better (lower) PTRs in smaller schools in order to provide the same curriculum available in larger schools. An analysis by the Scottish Education Department in the early 1970s and HMI's estimates of the PTRs required to staff a curriculum consistent with that proposed in the White Paper *Better Schools* found that unit staffing requirements rise rapidly in comprehensive schools as pupil numbers fall below about 800 (quoted in Audit Commission, 1986, p.25). This issue has become very important with falling rolls. As was shown in Chapter 2, many authorities have adopted new allocation techniques to protect the curriculum. This had only occurred in one of the LEAs in this thesis (Leicestershire) by 1986/7 but was yet to have a major impact. The other LEAs made *ad hoc* provision for schools experiencing major difficulties.

The indicator of school size is provided by the number of pupils on roll (NOR). Following convention, the figures are derived from Form 7 returns made to the DES in January of each year. The data used here refer to January 1987.

Post-16 provision: This is likely to affect staffing levels because older pupils consume significantly more resources than younger pupils. There are two reasons for this:

(1) the use of subject options from the fourth (sometimes the third) year onwards reduces group size and the PTR;

(2) more advanced courses require more specialised equipment and texts.

Provision for pupils staying on beyond the school leaving age is, in particular, comparatively high. In its calculation of Rate Support Grant, central government uses a weighting of 1.6 for sixth form pupils, against 1 for the remainder. Local authorities typically provide higher capitation allowances: in

1985/6 Cambridgeshire allocated £46 for every secondary school pupil under 16 and £86 for every pupil over 16.

Identifying schools providing post-16 courses and those not is becoming increasingly difficult. Traditionally, and especially prior to comprehensivisation, post-16 courses were reserved for the ablest pupils and it was possible to draw a much clearer distinction between schools with sixth forms providing A-level courses and those not. This situation is now undergoing rapid change with the proliferation of a multitude of different technical and vocational courses. Nevertheless it is still possible to test out the influence of post-16 provision on resources. However, whilst a general relationship can be hypothesised, testing this has only been possible in two of the authorities, Cambridgeshire and Leicestershire (amongst 11-16/18 schools). In Sheffield, the arrangement of schools into consortia with local colleges of further education means that this analysis is not feasible. In Newham, all schools made some form of post-16 provision, often through consortia.

Local factors: Aside from these general influences on resources, there are a series of factors peculiar to the individual case study areas that might have an effect. These are dealt with at the relevant points in the following sections.

7.3 Cambridgeshire: Resource allocation in a shire county

Figure 7.1 indicates the nature of variations in levels of staffing available to schools in 1986/7. There is a substantial difference between the extremes with one group of schools at each end of the distribution. Figure 7.2 shows the distribution of schools according to the percentage of pupils eligible for free school meals (FSM). Most schools are clustered at the bottom end of the distribution but there is a group of more disadvantaged schools which fall around the 25% mark. Relating these two data sets produces a Spearman's rank correlation coefficient of only -0.405, suggesting that there is little

Figure 7.1 Frequency distribution of secondary schools by PTR, Cambridgeshire, 1986/7

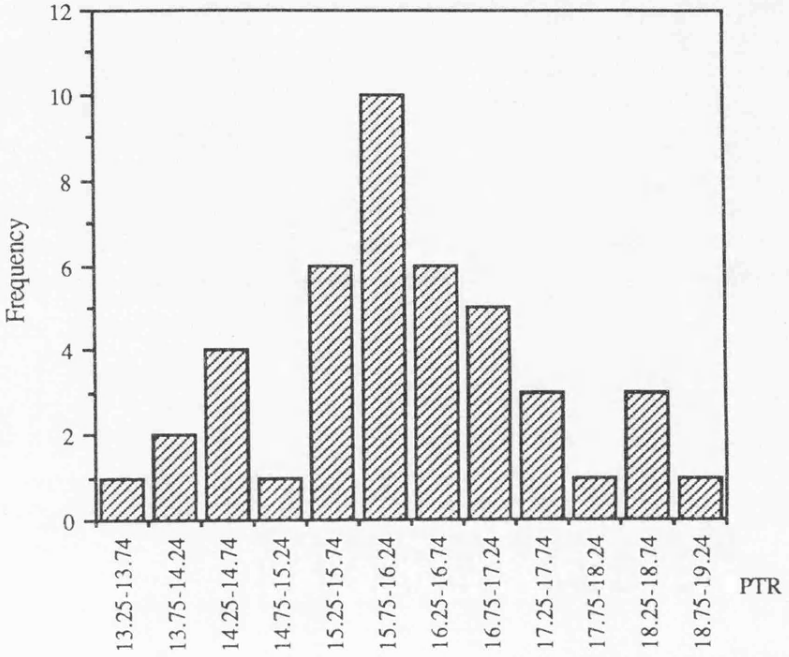
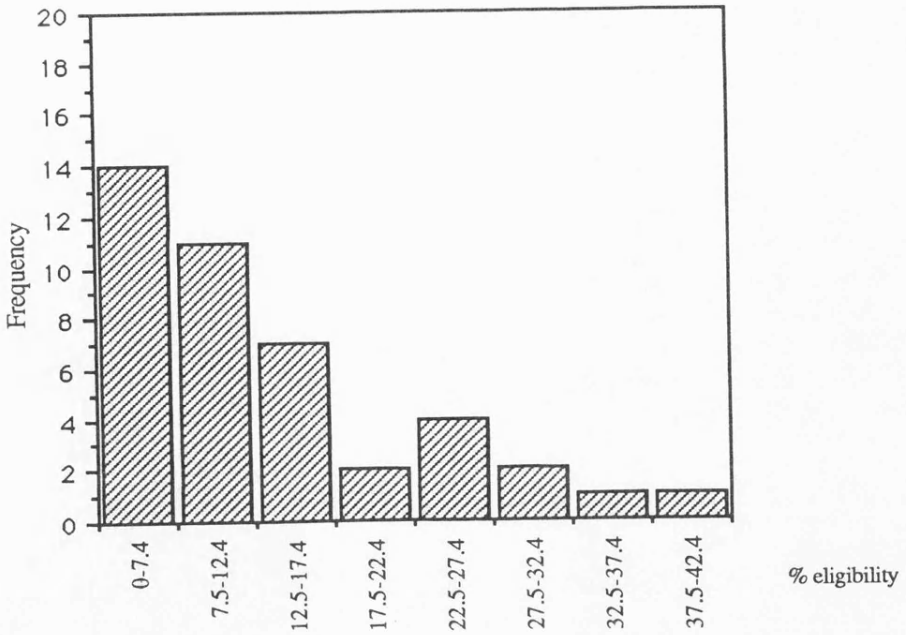


Figure 7.2 Frequency distribution of secondary schools by percentage of pupils eligible for free school meals, Cambridgeshire, 1986/7



relationship between the two. However, graphical representation of the data (Figure 7.3) shows that those schools with the worst (highest) PTRs fall within the lower end of the FSM index, whilst those with the best (lowest)PTRs are distributed across the whole range of FSM values. This suggests, firstly that those schools which are clearly most disadvantaged receive additional resources, though not in a way which is clearly related to FSM and perhaps on an *ad hoc* basis and secondly that other factors may be at work. School size, for example, may be important. Figure 7.4 shows the nature of variation in NOR. Figure 7.5 shows the relationship between PTR and NOR. The coefficient of 0.357 is weaker than that for PTR and FSM suggesting little in the way of systematic compensation for smallness. There is no evidence of any relationship between FSM and NOR, the coefficient being -0.012.

It was possible to test out the relationship between teaching resources and school background in more detail through the analysis of Burnham points. With a rank correlation of -0.069 there was found to be no relationship between the percentage of teachers on scale 1 and FSM. This was also true of the relationship between Burnham points per pupil and FSM, which showed a coefficient of 0.320.

To examine the effect of post-16 provision, it needs to be borne in mind that in Cambridgeshire the different histories of the Areas has given rise to different types of post-16 education. The arrangements are complex with sixth form colleges, 11-18 school/colleges and post-16 consortia forming a mixed pattern across the county, related to the contrasting histories of the Areas. Different schools provide different levels and ranges of post-16 provision, which raises the difficulty that any classification is liable not to be comparing like with like. Nevertheless, a classification which split schools according to the *level* of post-16 provision would be wholly arbitrary. Therefore, the comparison is between schools making any form of post-16 provision and those not.

Figure 7.3 Relationship of PTR to FSM variable, Cambridgeshire, 1986/7

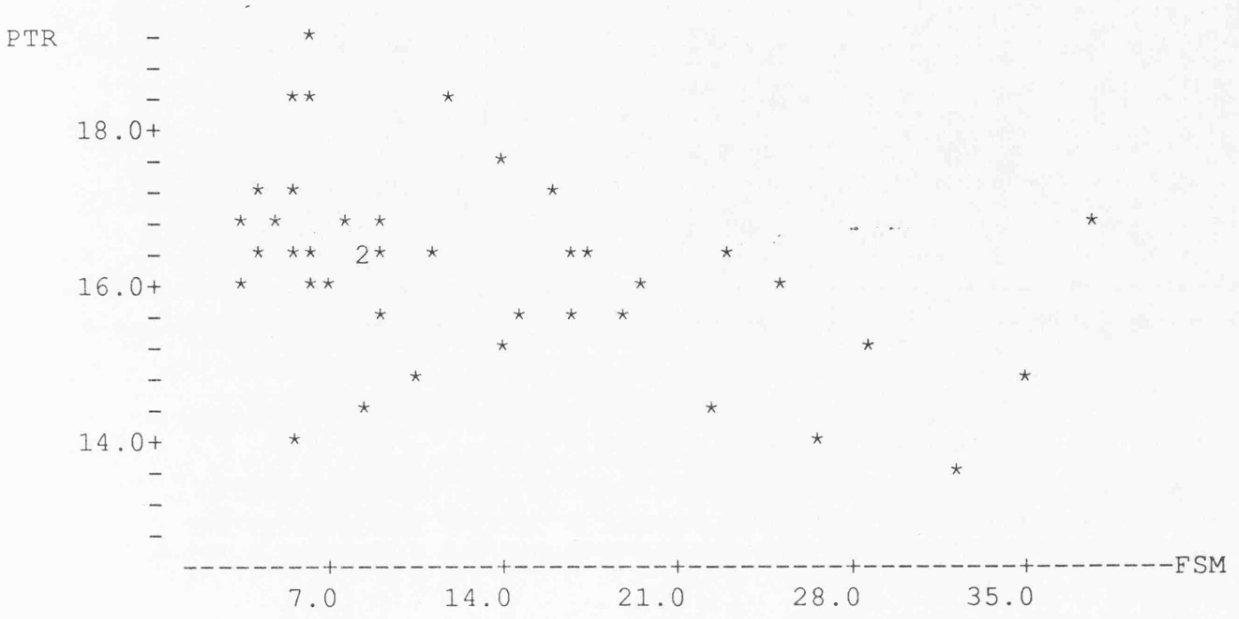


Figure 7.4 Frequency distribution of secondary schools by numbers on roll, Cambridgeshire, 1986/7

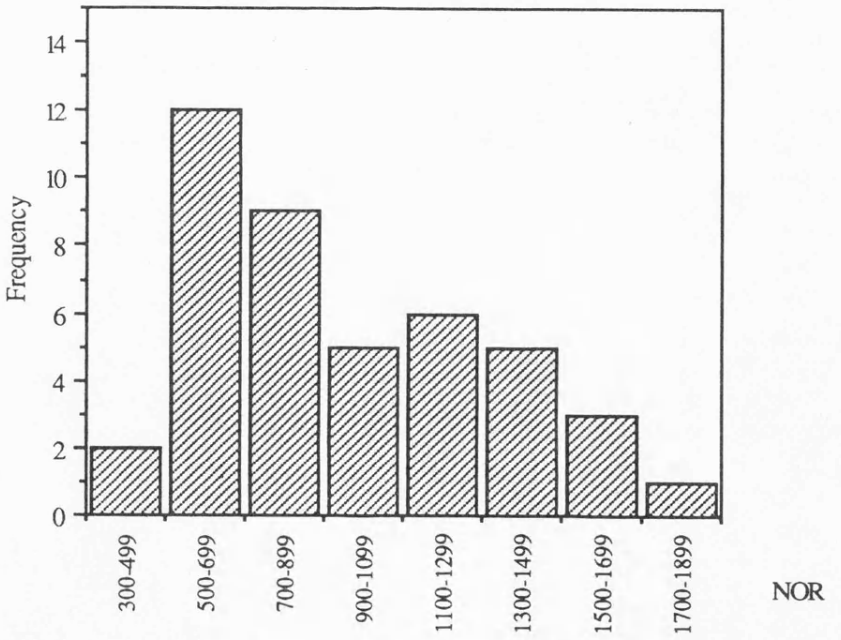
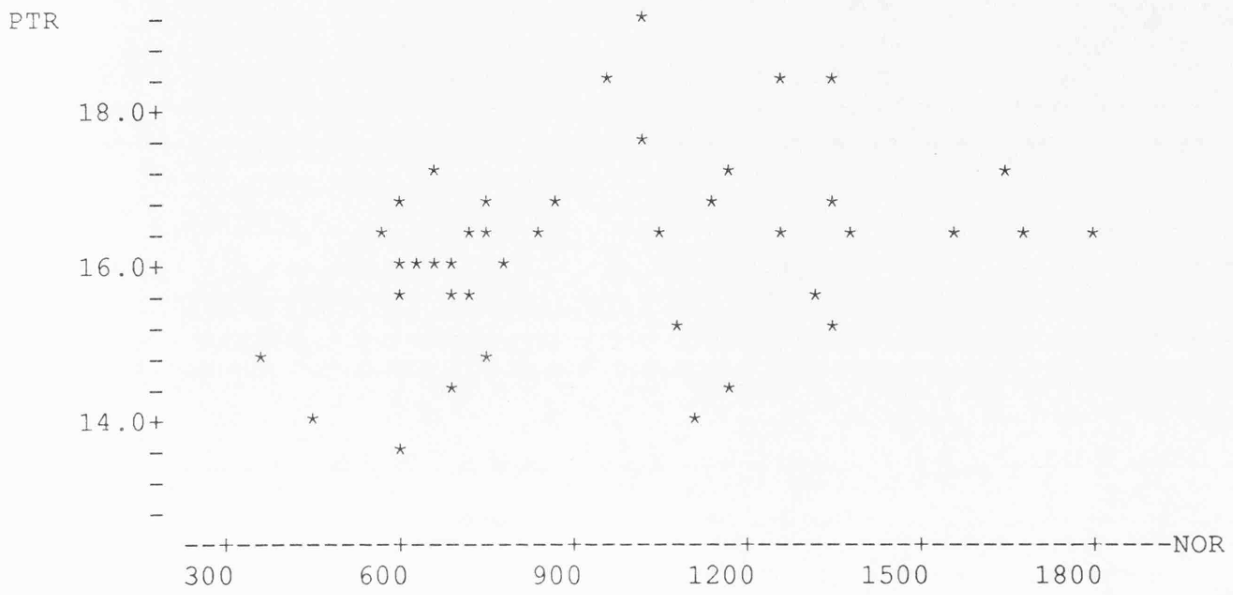


Figure 7.5 Relationship of PTR to NOR variable, Cambridgeshire, 1986/7

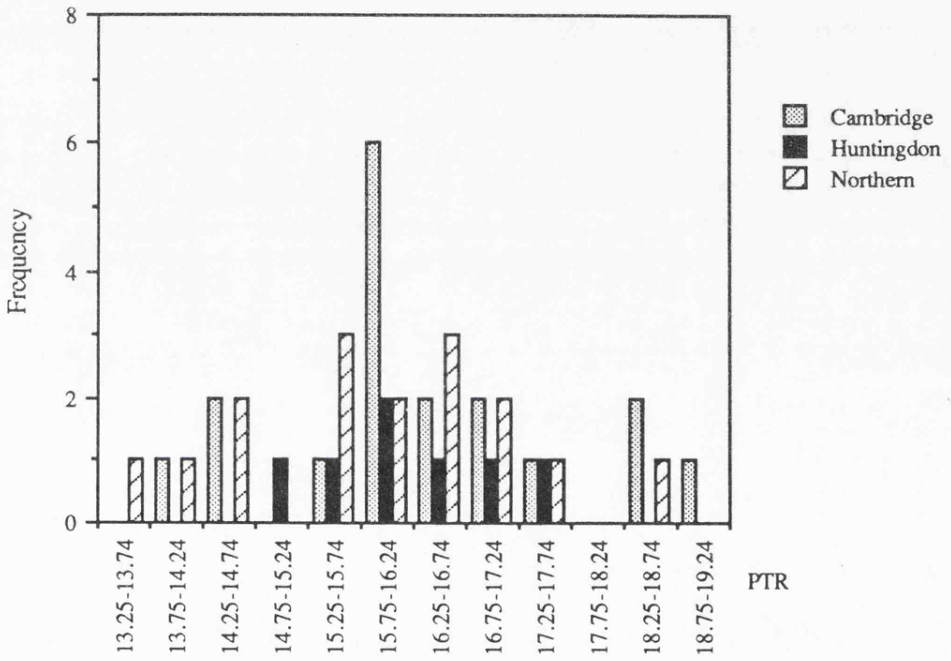


The mean average PTR for schools making post-16 provision is 15.9 compared to a figure of 16.6 for those not making such provision. However, the data exhibits a skew and the medians are closer, being 16.2 and 16.4 respectively. Nonetheless, there is evidence for some extra provision for post-16 provision, and it possible that the difference would be greater if it were possible to take account of the nature of the post-16 provision itself. There is evidence also that the difference in PTRs would be greater were it not for the fact that on average, post-16 institutions are clearly much larger than non-post-16 institutions. The mean NOR for post-16 schools/colleges is 1107 and for non-post-16 799; the difference between the medians is even more substantial. Whilst there is not a strong positive relationship between NOR and PTRs overall, as we have just seen, size is likely to have an effect because of the large size difference between post-16 and non-post-16 institutions which would reduce the difference in PTRs between the two groups.

The effect of Area

The results presented thus far in effect represent aggregations of data from the three Areas into which Cambridgeshire is divided for administrative purposes. Given that these Areas have different pre-1974 educational histories and given too the degree of autonomy granted to Area offices over the issue of resource allocation, it was felt appropriate to determine if the all-Cambridgeshire approach concealed local differences. This was indeed found to be the case. Figure 7.6 draws out the differences between the Areas in PTRs. The Northern Area emerges as, in aggregate, the most well-staffed of the areas. This might be due to a number of factors. There are important differences between the Areas in terms of mode of post-16 provision. In Cambridge Area post-16 provision is delivered via the sixth form colleges and three schools; in Huntingdon it is delivered via just one school; in the Northern Area 13 out of 16 of the secondary schools make this type of provision. Since this stage of schooling requires extra resources, the differences we observe between the Areas may therefore be due to

Figure 7.6 Frequency distribution of secondary schools by PTR, by Area, Cambridgeshire, 1986/7



this difference. Although there are important differences between the Areas in terms of average school size (mean NORs are: Cambridge 834; Huntingdon 1169; Northern 981), these do not appear to correlate with differences in PTRs. There are also differences in average FSM between the Areas with Northern emerging as the most disadvantaged (the figures are, in means, Cambridge 8.4; Huntingdon 9.7; Northern 20.6). This means that the practice of allocating extra resources for older pupils, at least at the area level, is working to the advantage of the more disadvantaged schools in the county.

7.4 Leicestershire: Resource allocation in a dual system

Leicestershire requires different treatment to the other case studies in this thesis. Although it has been possible to present resource measures for the whole of the LEA, in order that it may be compared with others, the Leicestershire system actually consists of two distinct sets of schools (see Chapter 4). Secondary education is provided through (a) a set of 11-16 and 11-18 schools located in Leicester and what used to be Rutland; and (b) a set of high schools , which provided for Years 1 to 3, and a set of upper schools, which provide for Years 4 and 5, and for post-16 courses. These distinct structures have considerble consequences for the way schools are resourced. The more usual 11-16/18 schools are resourced to levels expected elsewhere (mean PTR of 15.2). However, because they teach younger pupils, the high schools are staffed at lower levels (mean PTR of 17.5) than these schools whilst the upper schools , which teach older pupils, are staffed to higher levels (mean PTR of 14.8). Differences between schools in staffing levels must therefore be examined within these separate groups and cannot be compared directly across the entire LEA. The following analysis therefore examines relationships between variables within the two school systems, drawing attention to differences between the systems where relevant.

Figure 7.7 shows histograms of the PTRs in the three types of school. They bring out clearly the different staffing requirements of the three types. Important to note also, however, is the fact that amongst the 11-16/18 schools there are four whose PTRs are less than those in the upper schools. There is also a group of high schools whose PTRs are only just above the mean PTR for the 11-16/18 schools. These high schools seem to represent a group relatively well-staffed within their class. Amongst the upper schools there are no such groups. Amongst the 11-16/18 schools there are three distinct groups. To what extent are these variations related to other factors?

The two systems exhibit significant differences in terms of school background. As would be expected from a system which broadly reflects an urban/rural divide, there is considerable difference in their percentage of pupils eligible for FSM (here taken as the average of three 'readings' taken during the course of 1986/7). Whilst the high schools have a mean FSM of 8.2% and the upper of 3.9%, the 11-16/18 schools have a mean of 18.2%. Figure 7.8 compares their distributions. Quite clearly the advantage/disadvantage question is much more of an issue in the 11-16/18 schools; there is a broad range of observations. Only two of the high schools reach what might be thought of as significant levels. Amongst upper schools, disadvantage as manifest in the FSM variable is simply not an issue.

This is reflected in the rank correlation of PTRs and FSM. For the high schools this is -0.084 whilst for the 11-16/18 schools the coefficient is -0.548. Figure 7.9 shows the graphical representation of the latter. As can be seen, for 11-16/18 schools there is little in the way of *systematic* compensation for school background, but the lack of a strong relationship is in large part attributable to the fact that most schools fall below the level of FSM which might warrant additional staff. Even amongst the three most disadvantaged schools, PTRs fall across a range in excess of 2.0.

Figure 7.7 Frequency distribution of secondary schools by PTR, by school type, Leicestershire, 1986/7

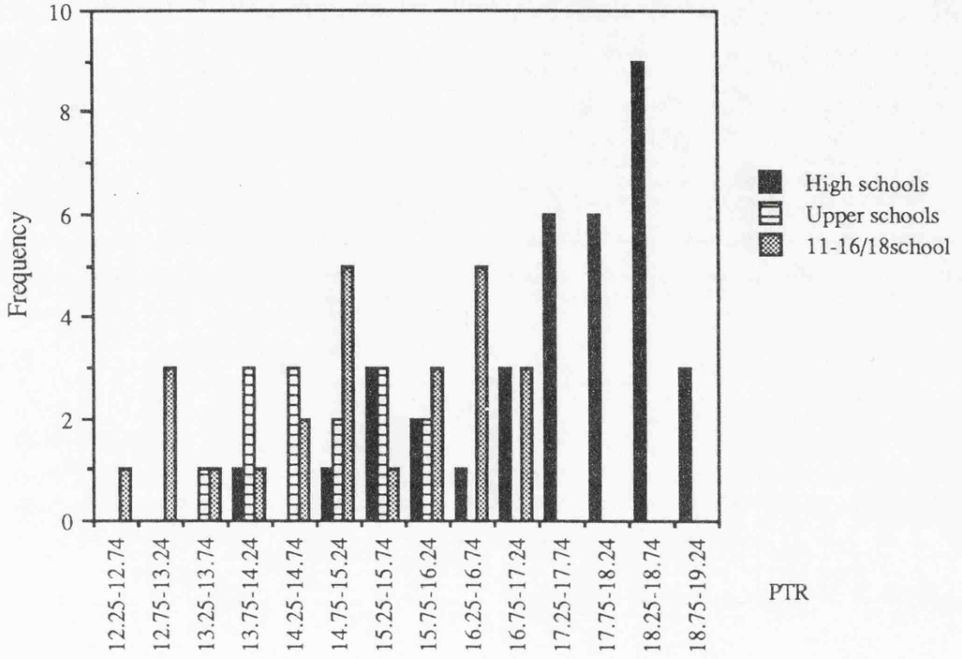


Figure 7.8 Frequency distribution of secondary schools by percentage of pupils eligible for free school meals, by school type, Leicestershire, 1986/7

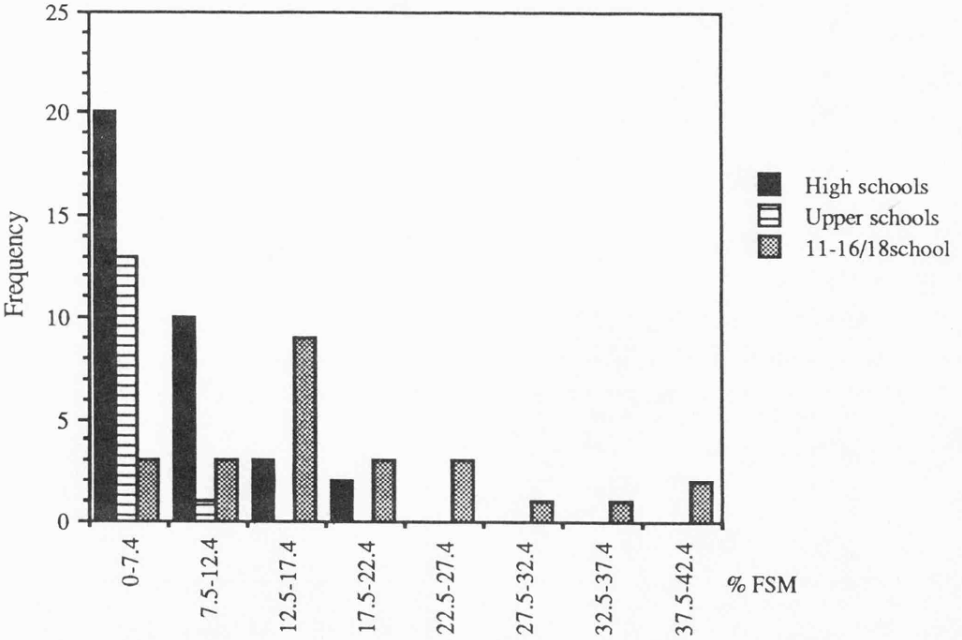
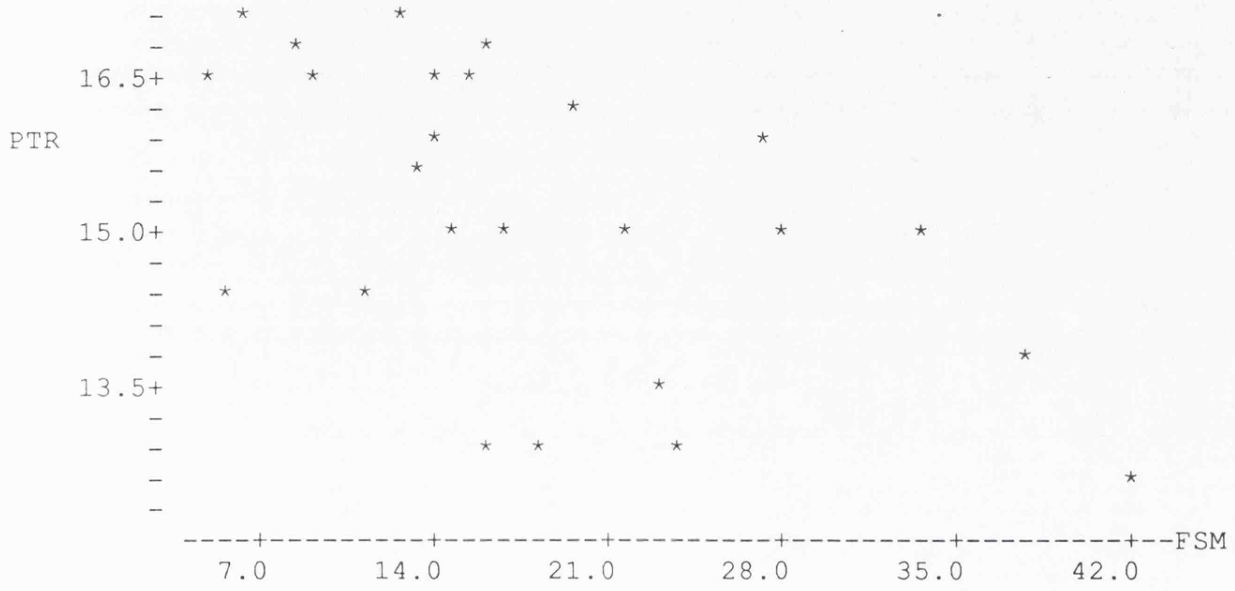


Figure 7.9 Relationship of PTR to FSM variable, 11-16/18 schools, Leicestershire, 1986/7



School size shows important variations between the three school types (Figure 7.10). The organisation of the old county schools has resulted in a structure of small high schools feeding a series of 14 large upper schools which are considerably larger, on average, than the 11-16/18 schools. The relationship of NOR to PTR is related to this structure (Figure 7.11). With a correlation coefficient of 0.873, the high schools can be seen to cover a range of sizes in which extra staff are vital to ensure the maintenance of minimum curricular standards. By contrast, upper schools are large enough for this not to be a problem (correlation coefficient: 0.389). The 11-16/18 schools occupy a middle position: some compensation takes place in the smaller schools but this is not systematically applied (correlation coefficient: 0.506). Correlation of NOR with FSM showed that there was neither conflict with nor compounding of the other relationships, the coefficients being: highs, -0.103; uppers, -0.481; 11-16/18s, -0.152. (The upper school coefficient is largely spurious, given the very small range of FSM values).

The analysis of the effect of post-16 provision was possible only for the 11-16/18 schools. Six of the 25 schools in the system made post-16 provision. The mean and median PTRs of the 11-18 schools was 15.1 and 15.2 respectively, compared to figures of 15.2 and 15.1 for the 11-16 schools. This runs counter to the hypothesis that post-16 provision attracts lower PTRs. However, it is possible that size affects the relationship between post-16 provision and PTRs since post-16 schools are larger, with a mean NOR of 994 against 763 for non-post-16 schools. This might account for the lack of difference in PTRs between 11-16 and 11-18 schools. There is no significant difference between the two groups on the FSM variable.

Figure 7.10 Frequency distribution of secondary schools by numbers on roll, by school type, Leicestershire, 1986/7

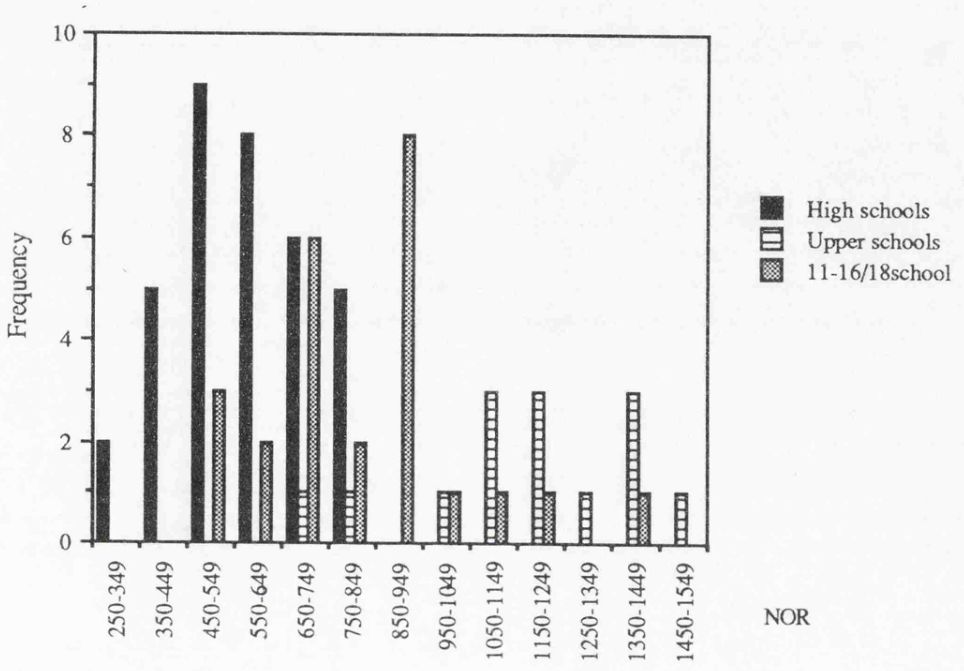


Figure 7.11 Relationship of PTR to NOR variable, Leicestershire, 1986/7

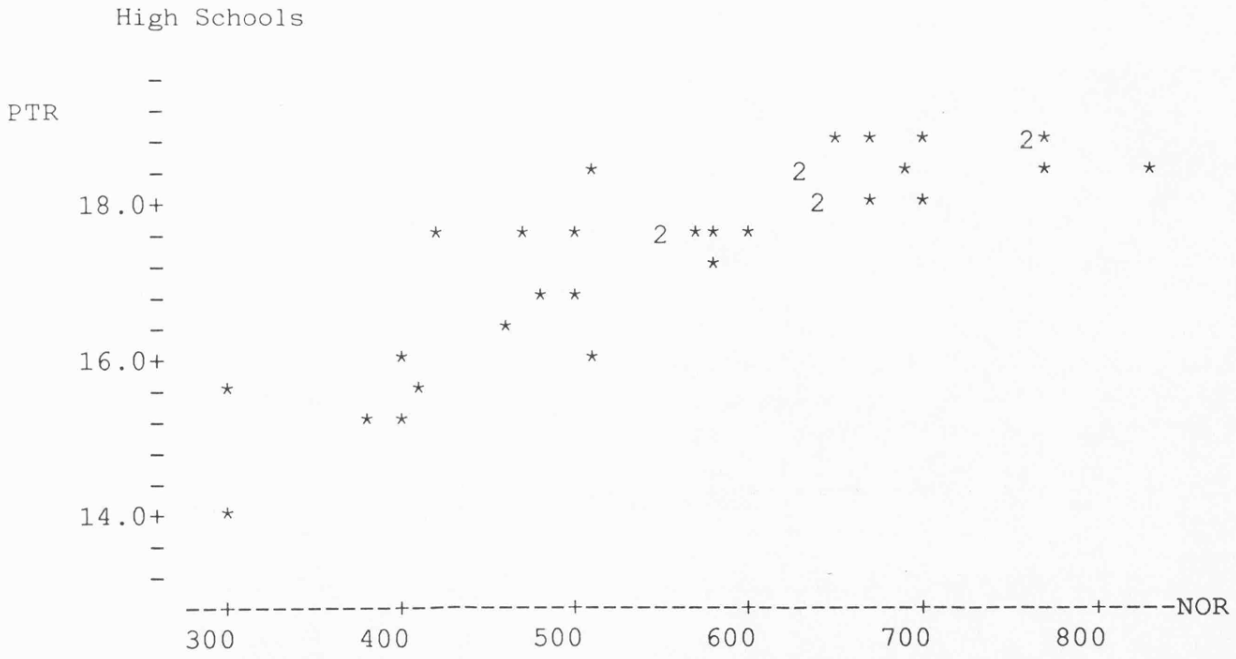
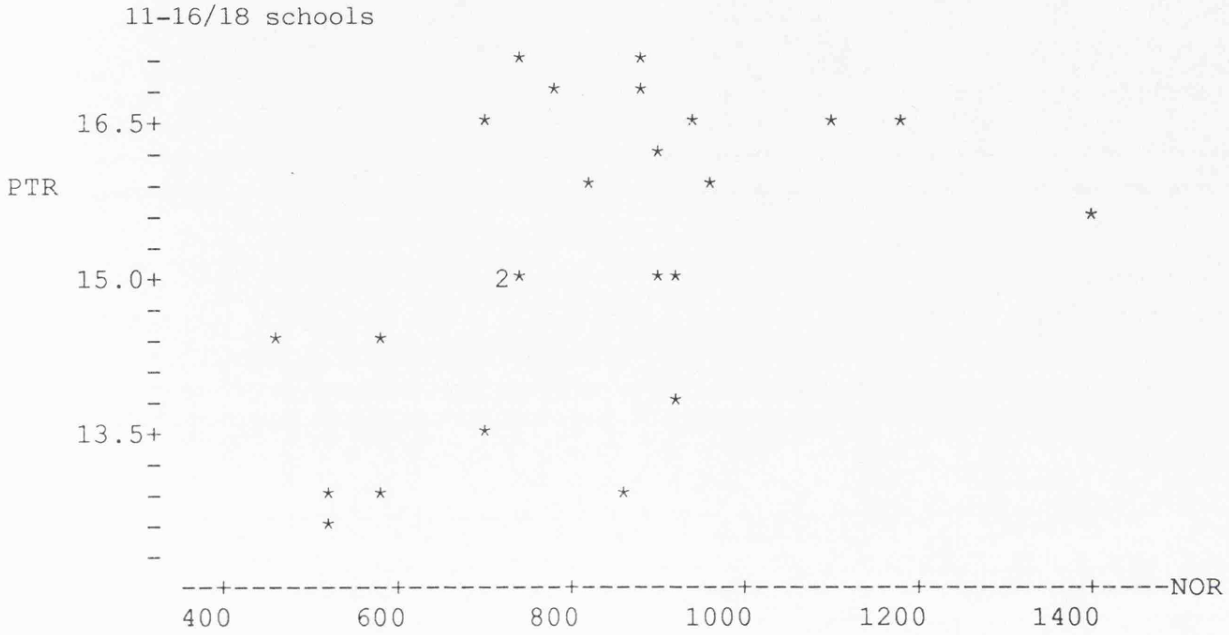


Figure 7.11 contd.



7.5 Newham:
Resource allocation and uniform deprivation

Newham is a small borough. It is also highly deprived. Unlike the other case studies, it does not exhibit extremes of wealth and poverty but instead covers an area of uniformly high deprivation. This is reflected in the background of its schools. Figure 7.12 shows the distribution of schools on the FSM variable in Autumn 1986. As can be seen, only one school had less than one fifth of its pupils eligible for FSM at this time, and even this school shows a percentage eligibility which is high by comparison with the most advantaged schools in the other case studies. Two schools are especially deprived. In these circumstances concepts of advantage and disadvantage are irrelevant: it is more a question of more or less disadvantage. This needs to be borne in mind in interpreting the results which follow. Moreover, the small number of secondary schools makes the reliability of correlations difficult to assess unless they are especially strong. In 1986/7 one school was also in the process of closure which meant it had a small number of pupils. This in turn affected its PTR and, as we shall see, the nature of the relationships observed.

Despite the narrow range of FSM values encompassed by the schools, a rank correlation coefficient of -0.656 was produced between FSM and PTR, suggesting some compensation in the case of the most disadvantaged schools (Figure 7.13). However, it can be seen from Figure 7.14 that 12 of Newham's 16 secondary schools fall within 1.5 pupils per teacher of one another, so the compensation is not substantial. Note also that the school with the lowest PTR is also the smallest. This is the school in the process of closure; hence it is also compensated for its size. Classified by PTR, the schools fall into two groups: the main body of schools plus a small group of well-resourced schools, and the outlier of the smallest school. Other information from the LEA shows that the well-resourced schools are better off in staffing terms principally because of curriculum protection but two of them also pick up extra staff

Figure 7.12 Frequency distribution of secondary schools by percentage of pupils eligible for free school meals, Newham, 1986/7

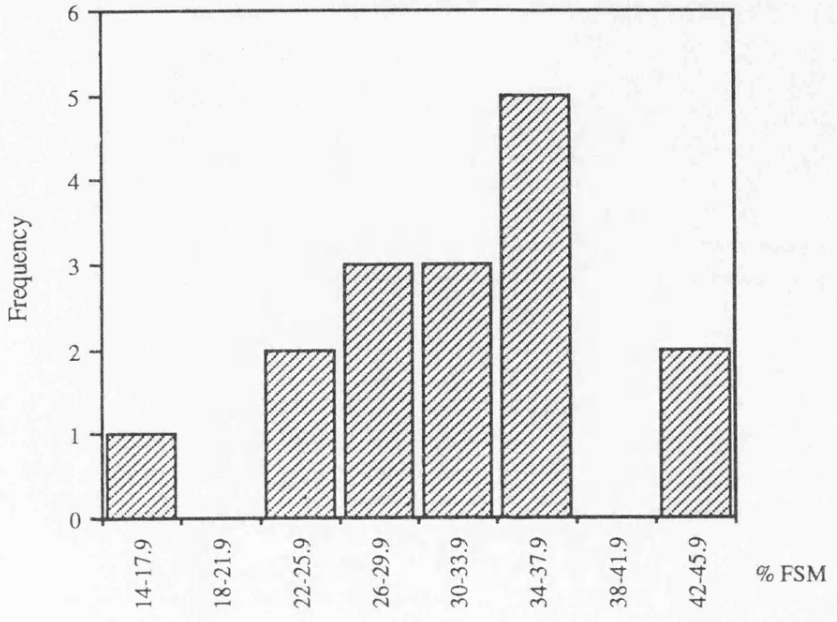


Figure 7.13 Relationship of PTR to FSM variable, Newham, 1986/7

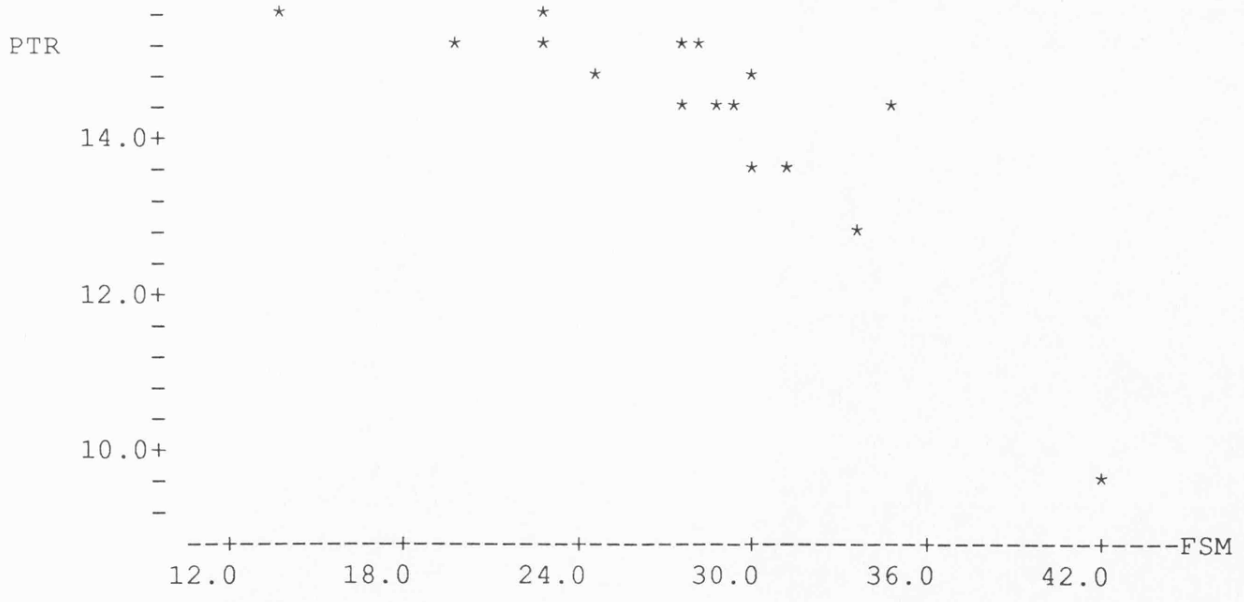
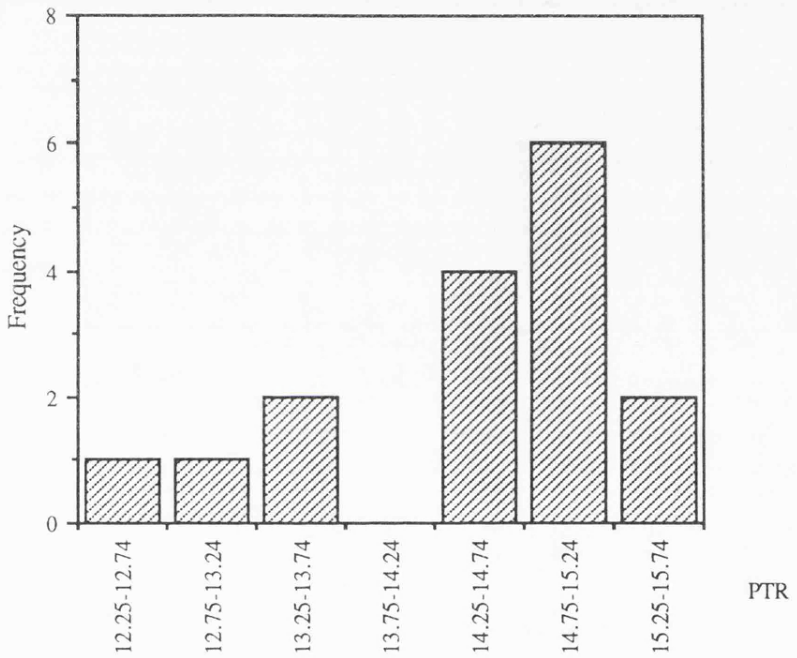


Figure 7.14 Frequency distribution of secondary schools by PTR, Newham, 1986/7



for their large proportion of ethnic minority pupils through Section 11 allocations. From this, it can be seen that the general measure of background represented by FSM will not encompass completely the important factor of ethnicity. School size is also an important factor in resource allocation. Unfortunately, ethnicity's role cannot be explored in detail, because of lack of data, but school size can.

Figure 7.15 shows that distribution of schools by NOR. Correlating numbers on roll (January 1987) against PTRs produced a coefficient of 0.585, indicating its lack of influence on the resource allocation process (Figure 7.16). The correlation coefficient of -0.188 between NOR and FSM indicates the lack of any compounding of confounding of the other relationships.

It was possible to analyse the allocation of teaching staff in more detail. The number of pupils per Burnham point and the percentage of staff above Scale 1 both represent measures of teacher quality. The rank correlation coefficients with FSM of -0.041 and 0.3 respectively give the lie to the view that teacher qualtiy is related negatively to school background within the authority. But the issue for Newham is probably on inter-LEA problem: variations within the LEA are insufficient to affect teacher quality.

In general terms these findings contrast with the results of a similar analysis mounted a decade before by Tunley *et al* (1979). Tunley *et al* found that resource allocation could work against the most disadvantaged schools. A decade later, two main conclusions emerge:

1. the contrasts they drew between schools in terms of socio-economic background are no longer so prevalent;

2. the LEA now clearly compensates schools both for background and size, though curriculum protection is a relatively recent innovation.

Figure 7.15 Frequency distribution of secondary schools by numbers on roll, Newham, 1986/7

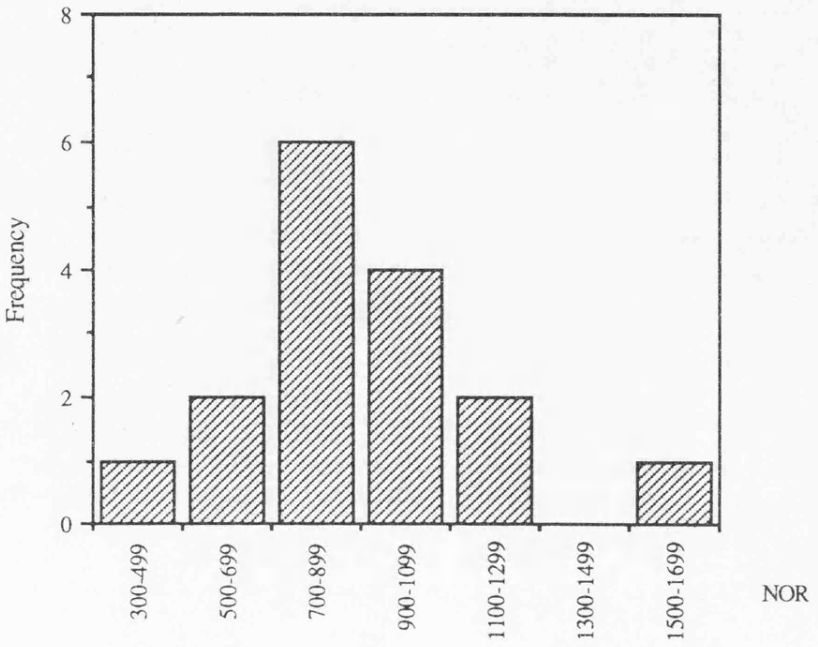
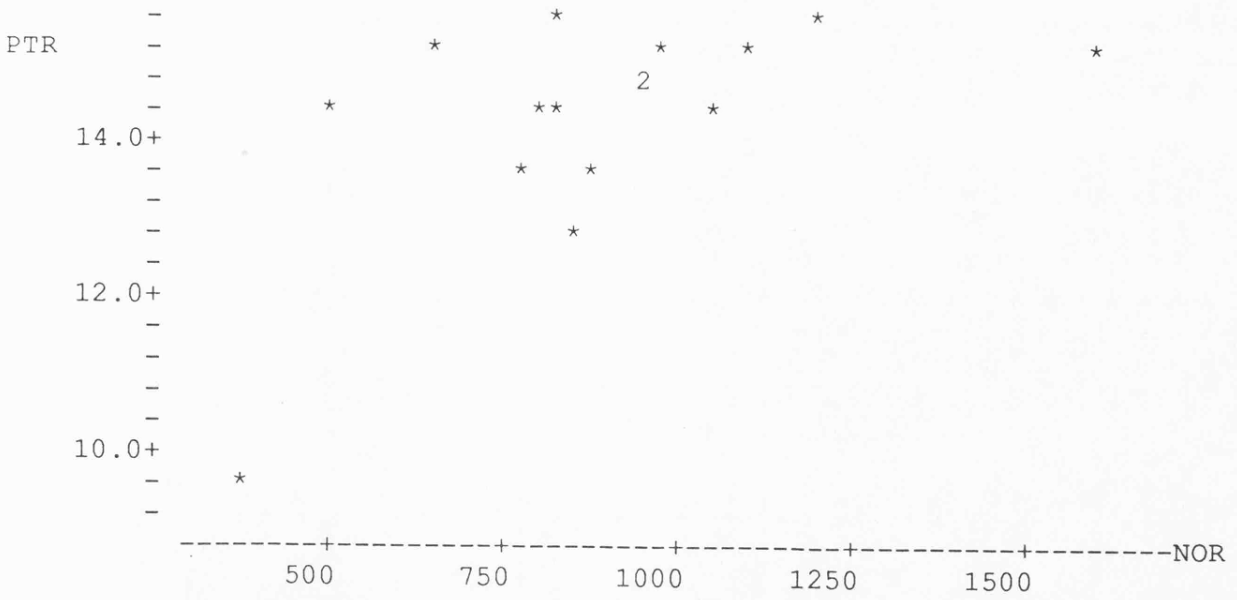


Figure 7.16 Relationship of PTR to NOR variable, Newham, 1986/7



7.6 Sheffield:
Resource allocation and positive discrimination

Sheffield exhibited perhaps the greatest variation in PTRs between its schools of all the case studies. Figure 7.17 shows the frequency distribution underpinning this variety. As can be seen, there is an upper group of schools outside the main group which are comparatively poorly staffed and, below the main group, a large tail of very well staffed schools.

Figure 7.18 shows the distribution of secondary schools on the indicator of background, the Index of Net Disadvantage (IND). Using the Index, 14 schools were deemed disadvantaged in 1986 and were eligible for extra resources allocated on an *ad hoc* basis (one Roman Catholic school was not included in the scheme). Given that teaching resources are allocated to schools partly on the basis of this Index, some relationship would be expected with PTRs. Figure 7.19 bears this out; the corresponding rank correlation coefficient is 0.66. However, it is clear that at any point on the Index there is still considerable variation in PTRs. This is true even for 'disadvantaged' schools, below zero on the index. The staff that can be offered in the positive action scheme amount to marginal increments to the main body of staff allocated on different bases. It is also clear that in terms of staff experience the scheme has less of an effect on the relationship with socio-economic background. The rank correlation of the Index with Burnham points per pupil was -0.497. Unfortunately further exploration of teacher 'quality' was not possible. However, what these findings suggest is that other factors may have a role to play in determining PTRs and, as before, it is possible to test for one of these: school size.

Figure 7.20 shows the relationship between school size and PTR. The accompanying rank correlation coefficient is 0.669 which is slightly stronger than that for PTR against the socio-economic index. There are therefore at least two fairly strong influences on PTRs. Because of this, it was felt necessary to

Figure 7.17 Frequency distribution of secondary schools by PTR, Sheffield, 1986/7

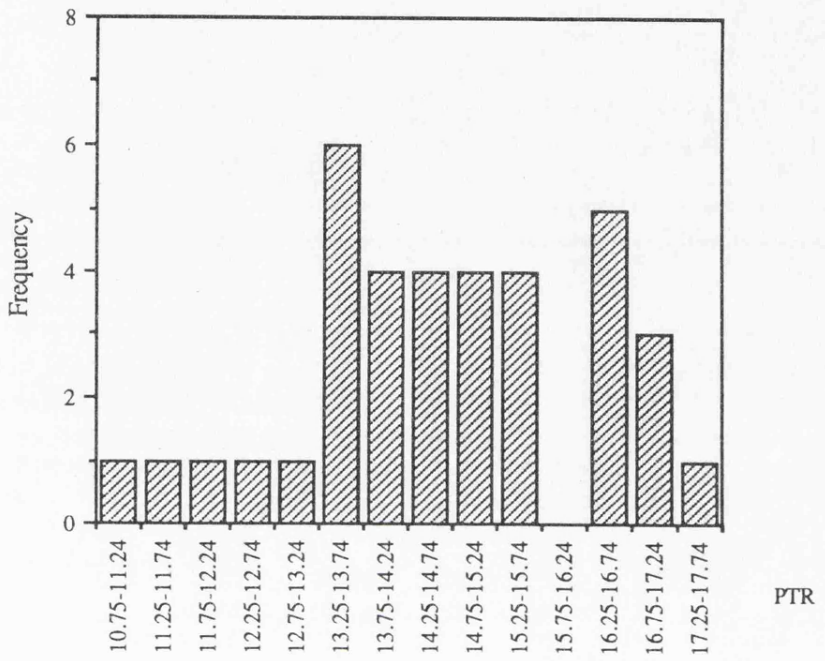


Figure 7.18 Frequency distribution of secondary schools by score on Index of Net Disadvantage, Sheffield, 1986/7

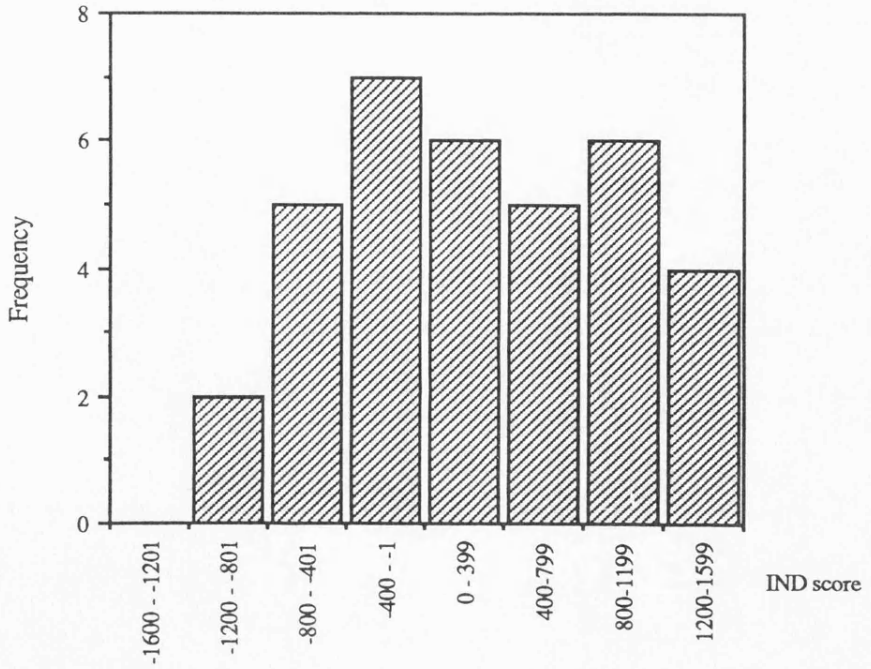


Figure 7.19 Relationship of PTR to score on IND, Sheffield, 1986/7

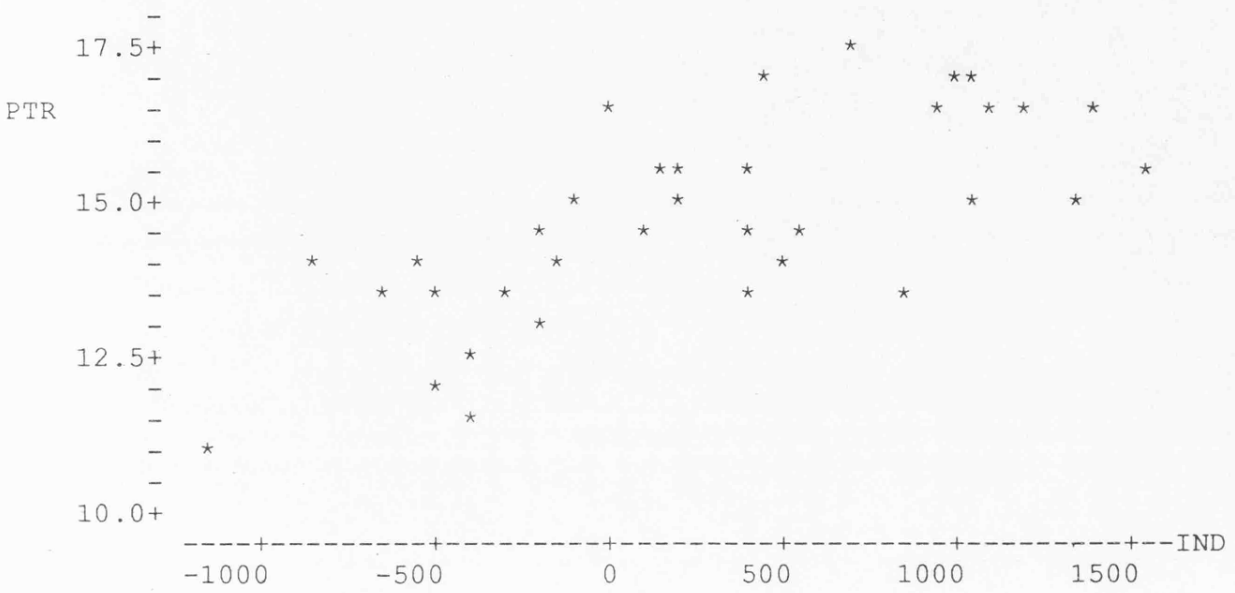
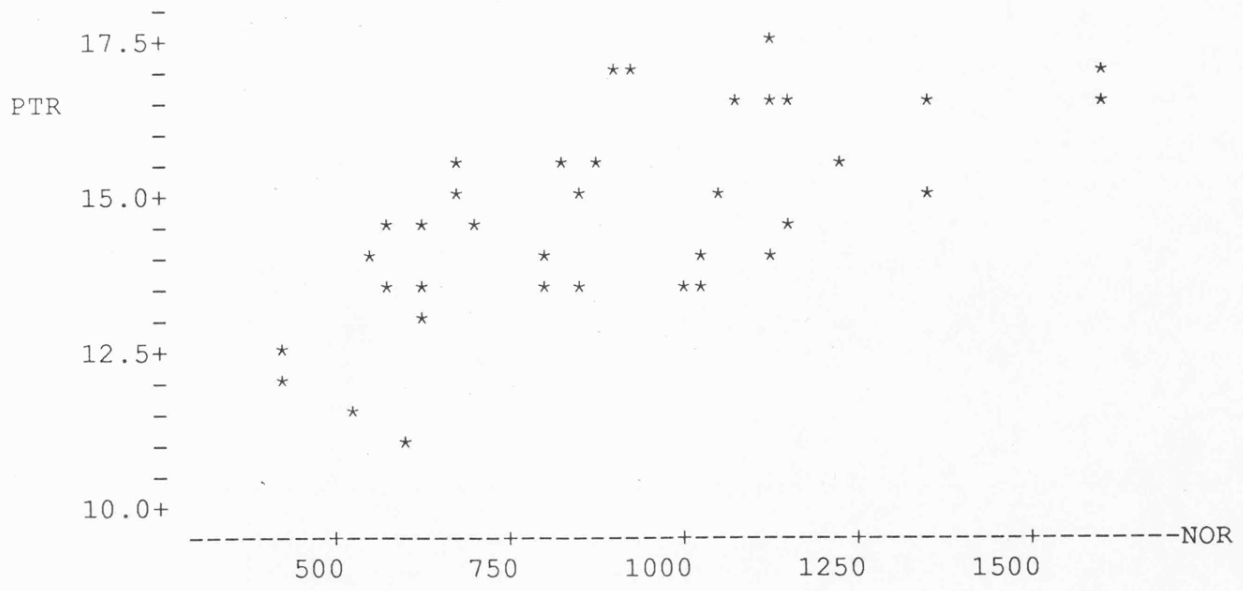


Figure 7.20 Relationship of PTR to NOR variable, Sheffield, 1986/7



test for the relationship between the Index and NOR. This produced a coefficient of 0.539 (see Figure 7.21) which, whilst less strong than the other two correlations, nevertheless suggests that because the more disadvantaged schools tend to be also the smaller schools they benefit from both the extra resources flowing from the additional staff allocated to protect the curriculum and from extra staff allocated because of the positive discrimination policy. Figure 7.22 shows the nature of the variation in NOR. Of those ten very small schools clustering at the bottom end of the distribution of NOR, eight fall below zero on the IND. Looked at another way, of the 14 schools classed as disadvantaged, eight had NORs of 625 or less whilst five had NORs greater than 1000 - representing a polarisation in this group but also showing that most would stand to benefit from curriculum protection.

7.7 The analysis of other school costs: the example of Cambridgeshire

Apart from analysing the relationship of teaching staff to background and size, it was also possible to examine, in one LEA, the relationship of other costs to these factors. Because of its leading role in the development of local financial management (LFM) for schools, Cambridgeshire was in advance of many other LEAs in having developed a system for monitoring costs on a school-by-school basis. As a result, it was possible to examine both total costs and spending under thirteen constituent headings and to relate these data to the background and school size factors and other local factors.

The data show that school costs varied considerably in Cambridgeshire in 1986/7. Total unit expenditure had an interquartile range in excess of £100 (Table 7.1) and the overall range was greater than £450. As can be seen from Figure 7.23, the vast majority of schools had a total unit expenditure of between £1000 and £1325. There was, however, a slight skew to the distribution with some six schools having an expenditure greater than £1350. This total expenditure consists of 13 sub-

Figure 7.21 Relationship of NOR variable to score on IND, Sheffield, 1986/7

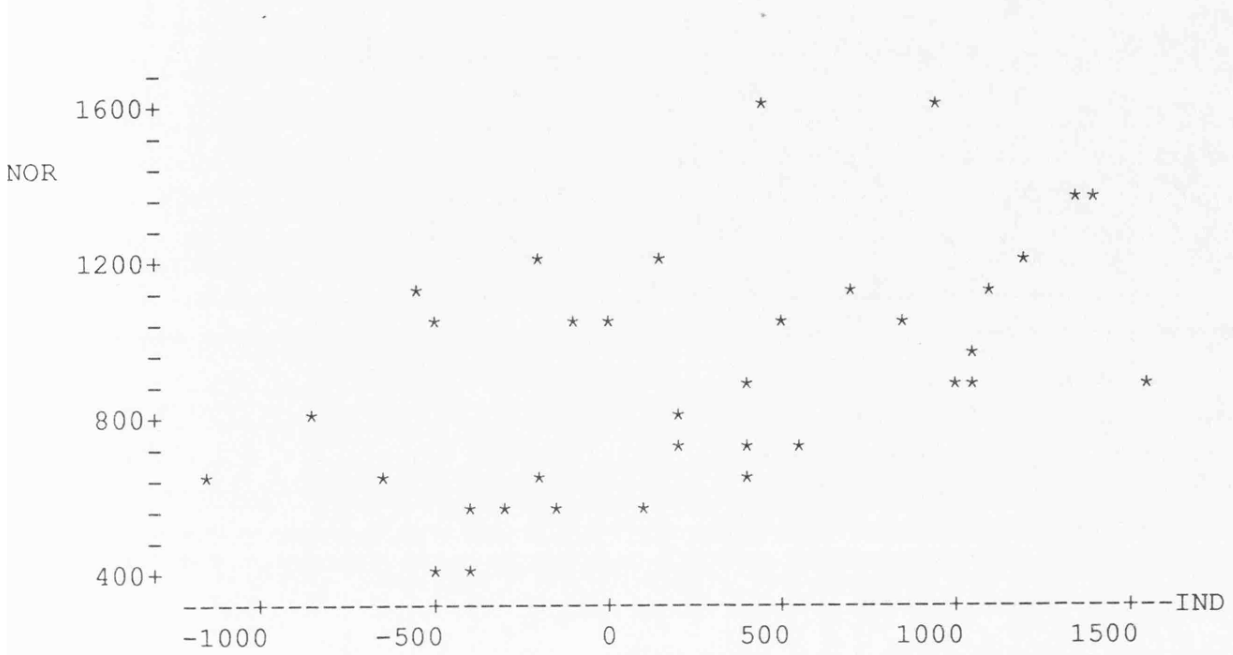


Figure 7.22 Frequency distribution of secondary schools by numbers on roll, Sheffield, 1986/7

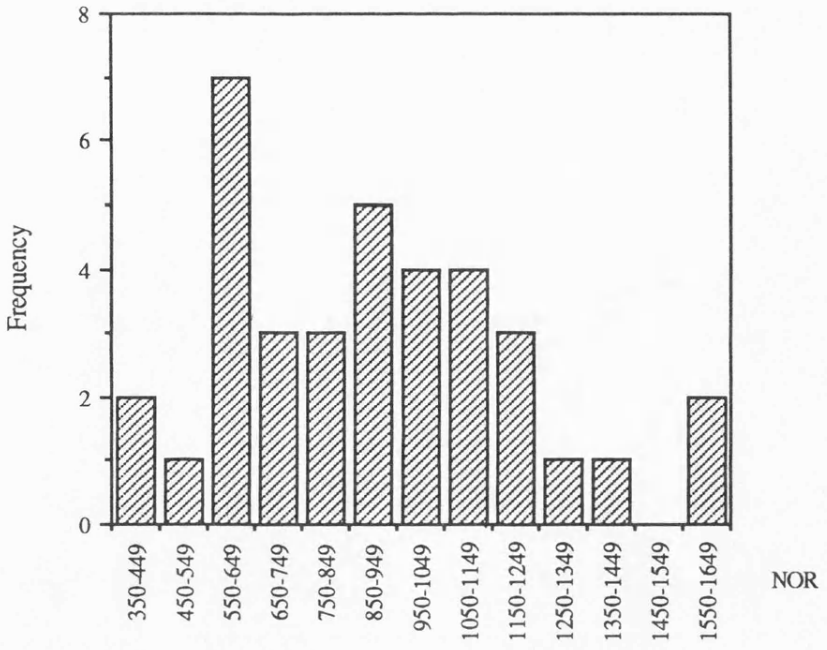
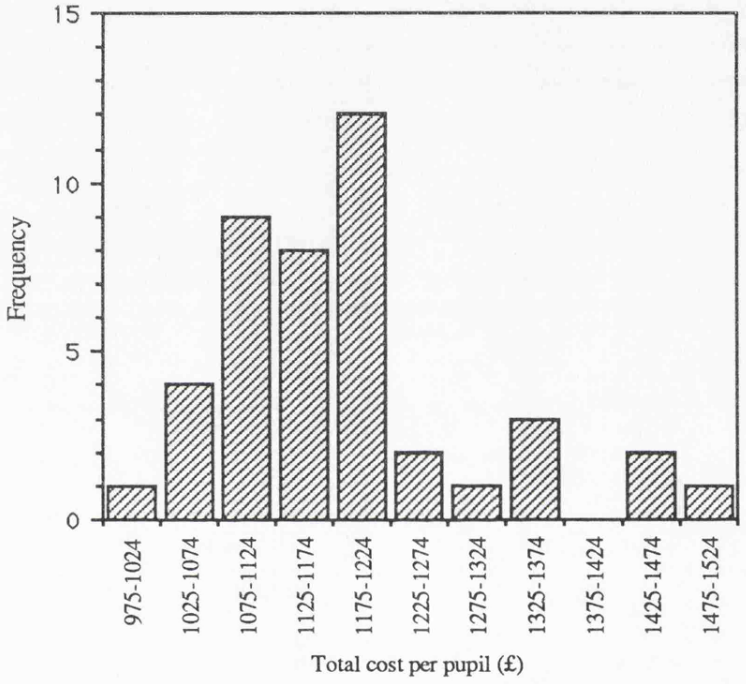


Table 7.1
Summary statistics for disaggregated unit costs in secondary schools (in £ per pupil), Cambridgeshire, 1986/7

Cost element	Mean	Median	Inter-quartile range	Coefficient of variation	% share of total costs
Teachers	843	830	786-899	8.2	71.1
Ancillary staff	45	43	39-48	18.1	3.8
Caretakers & cleaning staff	44	41	38-50	21.6	3.7
Other staff, pensions	4	4	3-4	30.9	0.3
Building repairs	46	43	33-54	40.2	3.8
Building alterations	3	2	1-4	147.5	0.3
Ground maintenance	16	16	9-23	62.1	1.3
Fuel	39	37	31-44	27.3	3.3
Rates & water	57	57	51-66	20.8	4.8
Other premises costs	5	1	1-2	229.6	0.4
Capitation	71	69	65-78	15.8	6.0
Other equipment & materials	4	1	0-2	266.1	0.3
Other expenses	11	7	6-9	126.2	0.9
TOTAL	1187	1173	1109-1222	9.2	100

Figure 7.23 Frequency distribution of secondary schools by total cost per pupil, Cambridgeshire, 1986/7



categories. Nine of these relate to the physical infrastructure of the school; one is a general 'other expenses' category; and the remaining three (teaching staff, ancillary staff and capitation) can be classed more as 'provision' variables insofar as they have a more direct bearing on the actual process of education. The shares of total expenditure of each of these categories is shown in Table 7.1, averaged for the whole authority. With the exception of rates, all the categories exhibit the skew found for total expenditure.

By this categorisation, some 80% of the expenditure attributable to schools is directly related to the educational process. Significantly, the analysis of coefficients of variation (Table 7.1), reveals that there is less variation in the three provision variables than in the other categories. (Capitation, which is allocated on a per pupil basis, also varies from school to school due to the fact that since 1976/77 schools have been able to roll forward this part of their budget in order to accumulate funds for major items of expenditure). The greatest variation is found in those categories that tend to become catch-alls for occasional expenditures - the 'other' categories. But major variation is also found under 'building alterations'. However, whilst teaching staff show the least relative variation, the absolute variation is large, the interquartile range being over £100. The next largest interquartile range belongs to building repairs (£21). Thus, variation in teaching expenditure is the major source of variation in total expenditure. That said, it is important to note that whilst all of the six schools noted above as having the highest total unit expenditures have teacher expenditure greater than £900 per pupil, it is high expenditure in a number of the other categories which ensure their position at the top of the distribution.

There are a number of possible reasons accounting for this variation. The analysis begins with an examination of the relationship to the Free School Meals variable. It then moves on to examine the influence of school size and the presence or

absence of a sixth form. In the particular context of Cambridgeshire, we also need to explore the possible influence of the village and community college designation, as well as test for differences between the Areas.

The effect of catchment characteristics

A priori it is hypothesised that school costs would be unlikely to be related to the socio-economic characteristics of school catchments because it is difficult to envisage a mechanism whereby this could occur. The monetary cost of teaching staff would be unlikely to enter into allocation decisions and other costs are essentially committed, technical costs. The findings here confirm this.

The correlation of the cost elements with the FSM variable (Table 7.2) shows the lack of any relationship with any element. The high coefficient found for other expenses is spurious due to the large number of zero values in the data. Particularly noteworthy is the low correlation for teaching costs which is mush less than for the relationship between PTRs and FSM discussed in Section 7.3. This confirms that costs *per se* are very unlikely to work to either the advantage or disadvantage of particular social groups in the LEA allocation process.

The effect of school size

School size is liable to affect unit expenditures through economies of scale. However, notwithstanding the general paucity of research in this area (see Simkins, 1980) the operation of these economies is much better established for the primary than the secondary sector. Cumming (1971), for example, in his analysis of Scottish primary schools, found economies of scale up to a roll of 80 pupils, but above this economies were much less discernable (p. 117). Coatesworth (1976) found a similar pattern in Norfolk in the mid-1970s, setting the crucial number on roll at 70. Interestingly, however, this relationship need not apply to all the elements of school expenditure.

Table 7.2
Spearman's rank correlation coefficients for unit cost elements against the Free School Meals variable.

Cost element	Correlation coefficient
Teachers	0.269
Ancillary staff	0.165
Caretakers & cleaning staff	0.062
Other staff, pensions	-0.074
Building repairs	-0.182
Building alterations	0.078
Ground maintenance	-0.160
Fuel	0.008
Rates & water	-0.065
Other premises costs	0.118
Capitation	-0.275
Other equipment & materials	0.377
Other expenses	0.606
TOTAL	0.196

Cumming notes that the relationship he identified for total outlays was largely determined by expenditure on teachers' salaries; other 'running costs' bore no relationship to school size (p.118).

As far as the secondary sector is concerned, Cumming's analysis found no discernable relationship between size and teaching staff expenditure (p.128), but did find that a high degree of the variation in total unit costs could be attributed to the relationship between total costs and numbers on roll (p.137) suggesting that maintenance costs are affected by economies of scale, though his conclusions here are of necessity tentative due to lack of adequate data and his small sample size (23 schools). Hough's (1981, pp.145-171) more recent study is equally inconclusive. Whereas economies of scale pertain in building costs, which appear in the capital budget, the results for current costs were mixed. In some sub-groups of schools (grammars, comprehensives, secondary moderns etc.) economies were found; in others not. Hough does suggest, however, that where an 'optimum' size appeared this was between 800 and 1000 pupils.

Table 7.3 shows the Spearman's rank correlation coefficients of total unit expenditure and its component categories versus numbers on roll. Only one component, cleaning and caretaking staff, suggests the operation of scale economies. However, Figure 7.24 shows that this correlation is due to high costs in a group of small schools and that for the vast majority of schools, size makes little systematic difference.

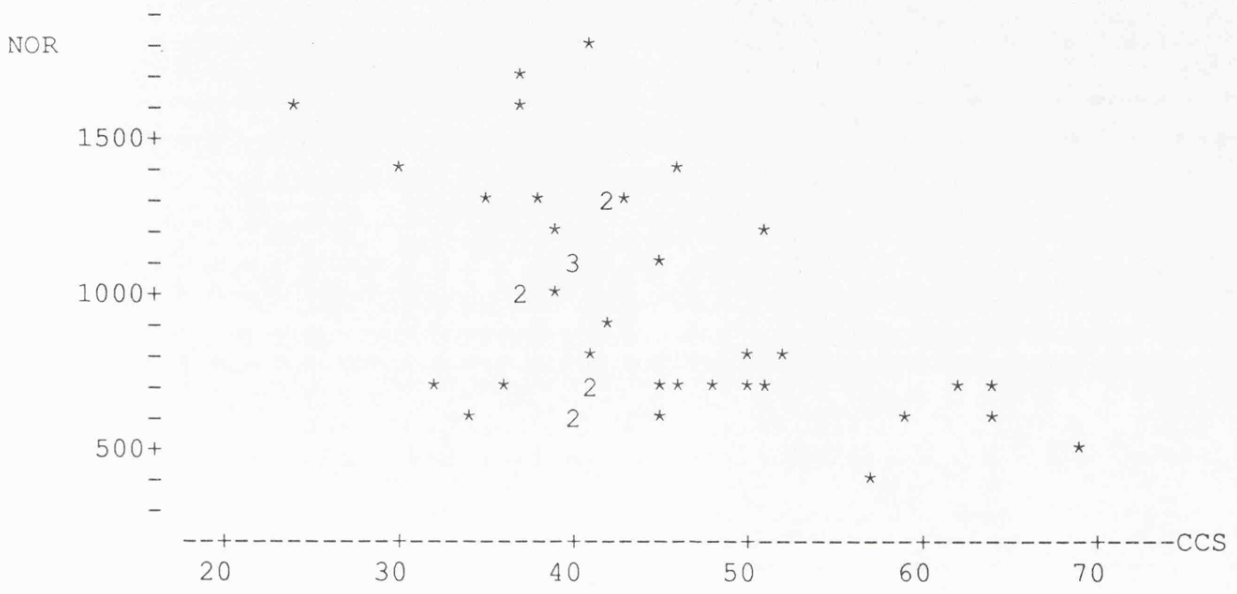
The effect of post-16 provision

Unlike school size, we would not expect post-16 provision to affect most school costs. As we saw in Section 7.2, post-16 provision tends to lead to more generous staffing allocations, and it is hypothesised that this is its main influence. This is confirmed by the analysis of costs. For total expenditures the difference between the means of the two groups is of the order

Table 7.3
Spearman's rank correlation coefficients for unit cost elements against the Numbers on Roll variable.

Cost element	Correlation coefficient
Teachers	-0.390
Ancillary staff	-0.106
Caretakers & cleaning staff	-0.446
Other staff, pensions	-0.005
Building repairs	0.082
Building alterations	0.203
Ground maintenance	0.061
Fuel	-0.141
Rates & water	0.112
Other premises costs	-0.032
Capitation	-0.006
Other equipment & materials	-0.048
Other expenses	-0.057
TOTAL	-0.304

Figure 7.24 Relationship of numbers on roll to unit cost of caretaking and cleaning staff, Cambridgeshire, 1986/7



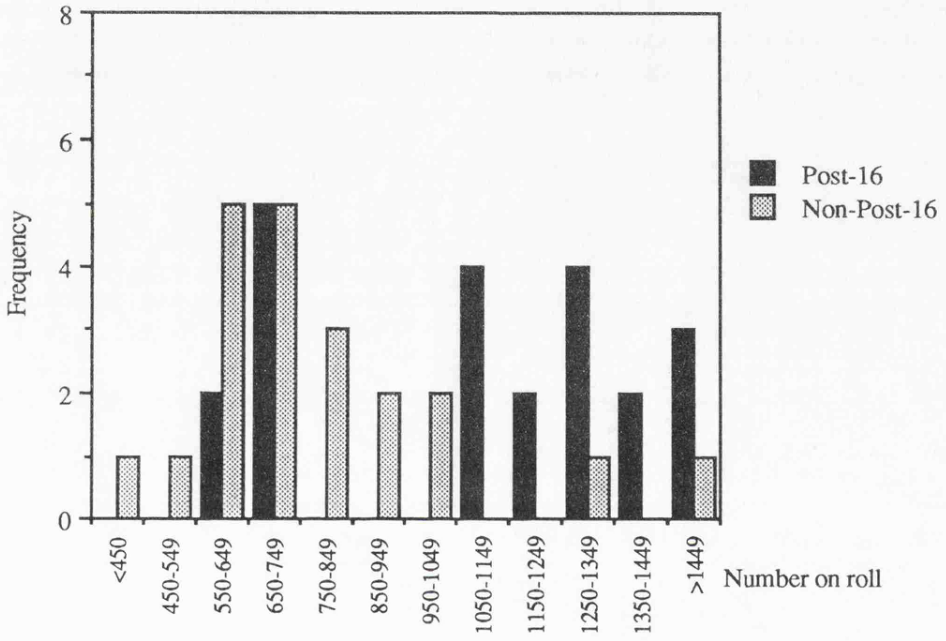
of only 3.5% (Table 7.4) and most of this difference is due to variation in teacher expenditure, where the difference between the means is £32 per pupil. This is an important difference. When applied to an average school size of 957 pupils in September 1986, this meant a total teacher expenditure difference of £30,624.

Although post-16 provision would not be expected to affect other school costs in this way, it is clear from Table 7.4 that some minor but interesting differences do emerge between the two groups under other expenditure headings. For a number of headings the relationship found between teaching staff and post-16 provision is reversed. For cleaning and caretaking staff, other staff and fuel there is a tendency for costs to be higher in institutions *not* providing post-16 courses. It is likely that this is not related to this provision itself but rather to the fact that, as was shown in Section 7.3, the average size of the institutions in the two categories is very different; post-16 institutions are much larger. Hence it is possible that the differences in these premises-related costs are due to the operation of economies of scale: costs are slightly higher in non-post-16 institutions because they tend to be smaller. Although Section 7.3 pointed to the lack of a strong relationship between costs and size overall, it was noted that scale economies do have an effect at the extremes of the size range. The division of the data according to whether or not they provide post-16 courses tends to produce one group at either end of the size distribution, as Figure 7.25 shows. The difference in size may also account for the fact that expenditures under the headings of other premises, other equipment and materials and other expenses have higher means in post-16 schools - these heads are for occasional one-off expenditures which are liable to be higher in larger institutions. (This would also account for the greater difference between the means than between the medians). The remaining heads - repairs, alterations, ground maintenance and rates - are not related to the size factor, and this is what

Table 7.4
Mean unit costs (in £) in post-16 and non-post-16 institutions

Cost element	Post-16	Non-post-16
Teachers	859	827
Ancillary staff	45	44
Caretakers & cleaning staff	41	47
Other staff, pensions	4	4
Building repairs	46	45
Building alterations	4	3
Ground maintenance	15	17
Fuel	38	40
Rates & water	56	58
Other premises costs	7	3
Capitation	73	70
Other equipment & materials	6	1
Other expenses	14	8
TOTAL	1207	1166

Figure 7.25 Frequency distribution of post-16 and non-post-16 secondary schools by numbers on roll, Cambridgeshire, 1986/7



would be expected since they have more to do with other factors, for example building age.

The effect of designation as village or community college and community school

Twenty-seven secondary schools in Cambridgeshire are designated either village or community colleges or community schools. Given their distinctive lineage, which sets them apart from the mainstream of state education (see Section 4.5), we might expect them to affect recurrent expenditure in a number of ways. There is no reason to expect expenditure on staffing and capitation to be any different to non-community schools since there is a separate community education budget and this is why the relationship to staffing was not analysed in Section 7.3. However, many community institutions were explicitly designed for that function, or at least modified during redesignation. A number of the village colleges were designed by Walter Gropius (see Knobel, 1985, p.130). It is not unreasonable to expect these design differences to show up in building-related expenditures, although *a priori* it is not possible to say in what ways this might be so, and the LEA did not maintain a database which might allow the key factors to be identified.

Table 7.5 compares summary statistics for the two classes of school, non-community and community, in 1986/7 . Total costs in community institutions is on average around £50 per pupil higher than in non-community institutions. As expected, expenditure on teachers, ancillary staff and capitation shows negligible variation. The main headings accounting for the difference in total costs are as follows (unit cost differences between means in parenthesis): building repairs (£11.11); fuel (£10.58); caretakers and cleaning staff (£6.67); rates and water (£6.23). With an average institution size of over 950 at the time of these expenditures, these are clearly quite significant differences. There is also marginally higher expenditure under the heading of 'other staff'.

Table 7.5
Mean unit costs (in £) in community and non-community institutions

Cost element	Community	Non-community
Teachers	843	843
Ancillary staff	45	45
Caretakers & cleaning staff	47	40
Other staff, pensions	4	4
Building repairs	50	39
Building alterations	4	3
Ground maintenance	17	14
Fuel	43	32
Rates & water	59	53
Other premises costs	7	2
Capitation	71	72
Other equipment & materials	5	2
Other expenses	13	9
TOTAL	1205	1156

Once again, however, it is likely that these differences are not simply related to community designation but to size as well. Community institutions have an average NOR of 887 compared to that for non-community institutions of 1073. In this context it is possible that building-related costs are higher in community institutions because they are small. The division of the data once again enhances the effect of scale economies. However, the two groups' size distributions by no means polarise the data to the same extent as the division according to post-16 provision (Figure 7.26). Yet the differences in expenditure are greater. This would suggest that there is a community designation effect in addition to the effect of scale economy, especially given the failure to identify scale economies as an important factor generally. This community effect would seem to be quite strong for certain types of expenditure. Expenditure under the headings of other premises costs, other equipment and materials and other expenses tends to be greater for the smaller community institutions, in contrast to the findings of the previous section where these were higher in larger institutions. One-off expenditures would seem to favour the community as much as the larger institutions.

The effect of Area

Prior to their unification under Cambridgeshire County Council in 1974, what are now the Areas had very much gone their own way in terms of the development of their education services. In cost terms, it is possible that different modes of delivery - numbers and sizes of schools, school type etc. - had an effect on cost structures which, though inertia, is still apparent today. This section examines these differences. Unfortunately, it is not possible to hypothesise *a priori* the likely impact of the Areas: this is not likely to be straightforward.

Table 7.6 shows the unit costs of secondary schools in the three Areas, Cambridge, Huntingdon and Northern. In terms of total costs, it is clear that Huntingdon and Northern both exhibit skews, though in opposite directions. This is brought out by

Figure 7.26 Frequency distribution of community and non-community institutions by numbers on roll, Cambridgeshire, 1986/7

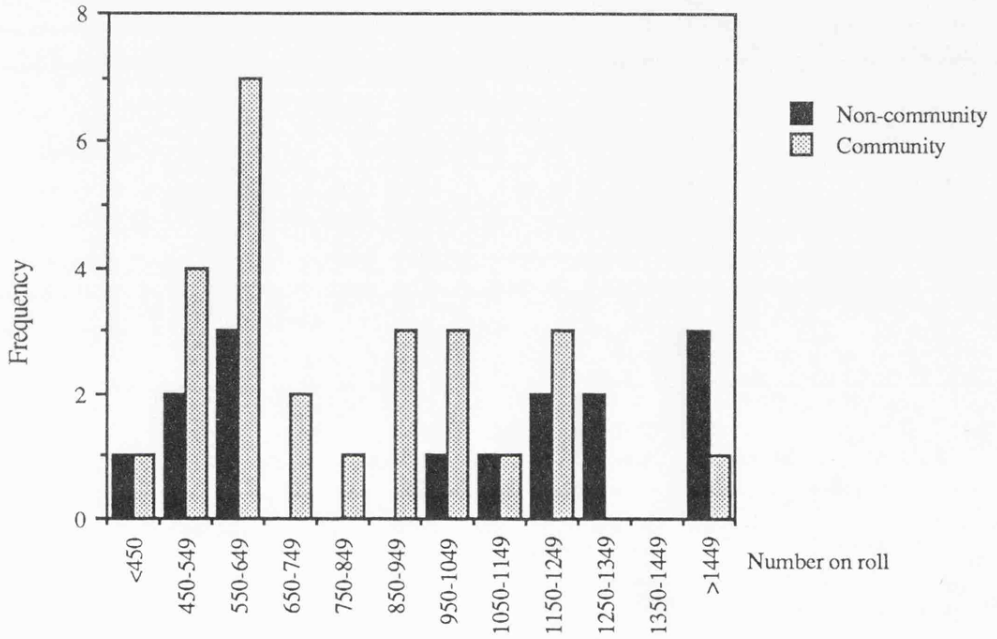


Table 7.6
Mean unit costs (in £) in the Areas of Cambridgeshire, 1986/7

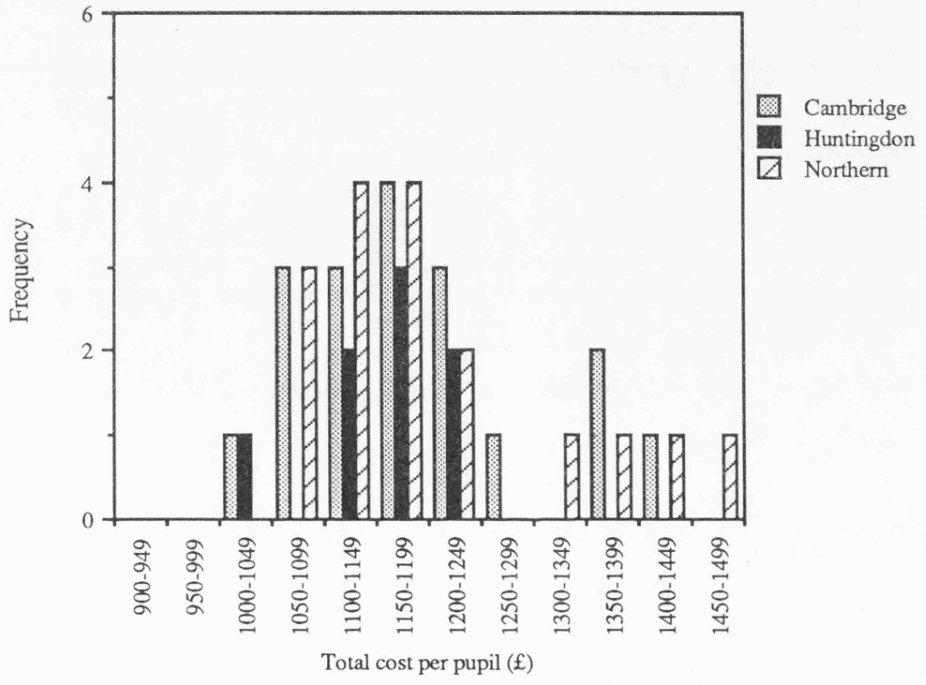
	CAMBRIDGE		HUNTINGDON		NORTHERN	
Cost element	Mean	Median	Mean	Median	Mean	Median
Teachers	843	829	826	821	851	851
Ancillary staff	46	45	43	43	44	43
Caretakers & cleaning staff	47	44	40	39	43	41
Other staff, pensions	4	4	4	4	4	4
Building repairs	51	48	46	46	40	42
Building alterations	2	2	3	2	5	2
Ground maintenance	14	13	19	21	17	16
Fuel	40	38	37	36	39	36
Rates & water	58	61	58	58	55	55
Other premises costs	4	1	3	3	8	1
Capitation	72	70	71	72	70	68
Other equipment & materials	1	1	1	1	8	2
Other expenses	7	7	7	7	17	9
TOTAL	1188	1181	1157	1179	1200	1160

Figure 7.27. In this context, a comparison of the medians, which is a more reliable average to use, reveals only minor differences between the Areas (a small number of schools with very high costs in Northern Area inflates its average). Comparing the medians across all costs reveals that whilst it is Cambridge Area schools which tend to have the highest total costs, this is not due to teaching costs, the biggest single cost element: these are highest in Northern schools. Instead, Cambridge's high costs come from a number of the remaining heads, in particular repairs, which is likely to be due to the older age of the building stock in Cambridge. Apart from these findings, other trends are difficult to pull out, and even in the case of repairs tendencies are far from clear cut since maintenance costs are higher in Northern than Cambridge schools. Testing out the possible influence of school size reveals important differences between the Areas in median NORs (Cambridge 758, Huntingdon 1175, Northern 845) but the largest differences in costs do not correspond to the largest differences in size, so size does not appear to be an influence. The relationships here are clearly complex and further exploration is not possible without additional background data which unfortunately was not available.

7.8 Conclusions

This chapter has analysed the allocation of resources between schools within the case study authorities. The results show no evidence of discrimination in any of the LEAs against disadvantaged schools. On the contrary, there were indications that additional allocations were made to highly disadvantaged schools in all the LEAs, despite their very different contexts. However, there was little in the way of *systematic* compensation for school background: allocations tend to be made on an *ad hoc* basis. This was true even in Sheffield, which has an express policy of positive discrimination, since its Index of Net Disadvantage is used only as a guide for allocation.

Figure 7.27 Frequency distribution of secondary schools by total cost per pupil, by Area, Cambridgeshire, 1986/7



It is possible that stronger relationships would have been discovered if an alternative indicator had been available. It can be argued that there are deficiencies in using the indicator of free school meals as a surrogate for socio-economic background. However, this variable is a good indicator of the extremes of advantage and disadvantage and has become increasingly popular in LEAs as a convenient measure of school background. We would have expected it to reveal relationships if these existed, particularly in Sheffield, Cambridgeshire and the 11-16/18 schools in Leicestershire, where schools fall across a wide range of values. However, the way schools are distributed across the FSM variable, clustering at particular points on the distribution, means that differences between most institutions are insufficient to warrant additional staffing allocations. It is quite likely that there is a particular level at which the FSM variable becomes a relevant factor: below that level, school background is not important. It is also possible that relationships were not discovered due to the fact that the variable could not capture other factors which might be important in resource allocation. Of these, it is perhaps ethnicity which is most important. It is unfortunate that due to data restrictions this factor could not be taken into full consideration here.

Either way, we would not expect background to be the only factor related to staffing levels, and because of this it would only ever account for part of the variation. The other key factor tested for was school size. At the time of the research, none of the authorities (with the exception of Leicestershire, although even their scheme was new) operated a system to staff the curriculum according to objective measures of need: compensatory allocations were made on an *ad hoc* basis. As a result, for any given school size there was always a range of PTRs across the schools in each LEA. However, there was also evidence that school size was more closely related to PTRs below a threshold of approximately 800 pupils: below this level it was clearly imperative that staffing took size into account to ensure the delivery of an adequate curriculum, whilst above

this, the relationship tended to break down. These results were most evident in the case of Leicestershire's high schools: the high correlation here is due to the fact that almost all these schools have NORs of less than 800. These results confirm those from other sources noted in Section 7.2. In other words, LEAs tended, in effect, to operate a minimum level: above that level there were substantial variations.

Whether these variations amount to important inequalities is open to conjecture. The analysis presented takes into account only the main common factors, whereas school staffing requirements are affected by a host of 'local' factors such as room capacities, site arrangements (e.g. split sites), chance (e.g. the loss of staff due to retirement or illness), and inertia (e.g. the inheritance of inappropriate mixes of staff specialities during a time of change). Factors such as these, which are combined in individual schools in unique combinations, cannot be taken into account without substantial intensive fieldwork beyond the scope of this thesis. However, the findings point to important differences in PTRs between schools of similar sizes which provide strong *prima facie* evidence of important inequity: it was common for schools *two or three times* larger than others to have the same PTRs.

The analysis of post-16 versus non-post-16 institutions found that whilst there was evidence that post-16 courses attracted lower PTRs, this factor was confounded by the factor of size. This revealed some of the interactions between the various factors affecting provision. Other analyses showed that it was possible for such interactions to work to the advantage of particular groups of pupils. For example, in Sheffield, the small size of many disadvantaged schools meant they benefited from allocations for both size and disadvantage. Similarly, in Cambridgeshire, differences in staffing levels between the Areas because of differences in the organisation of post-16 provision worked to the benefit of disadvantaged schools. But in general such relationships were merely examples of good fortune for schools in disadvantaged areas.

The analysis of unit costs in Cambridgeshire revealed major variations between individual schools. The greatest relative variation was found to occur outside the area of greatest single importance - teaching staff - although it was variations in teaching costs which accounted for most of the variation because in absolute terms it was the most significant. Costs were found to be unrelated to the school context variable. The monetary cost of allocations is unlikely in most authorities to be a key part of allocation decisions at school level, not least because such a high proportion of building-related expenditures (i.e. those outside capitation, teaching staff and ancillary staff) tends to be already committed or a technical matter, not prone to political debate. This is not necessarily true of the capital budget which affects new building, but the concern here is with recurrent expenditure. Qualitative, anecdotal information from more than one of the case study LEAs did suggest, however, that minor allocations of resources could be affected by such factors as councillor influence and which head happened to make the loudest demands. But such allocations are, for obvious reasons, impossible to trace accurately, although it is clear they are inconsistent.

Size was an important factor for only one of the cost elements, caretaking and cleaning staff. As predicted, the greatest effect of post-16 provision was on staff costs; differences between post-16 and non-post-16 insitutions under other headings was shown to be related to size rather than age-related provision itself. Although the relationship to size was in general very weak, it is possible that because the two groupings based on post-16 provision polarised this data its effect would be intensified. The analysis of the influence of community designation on costs also showed the tendency for size to interact with the community effect. However, in this case, it was shown that it was possible that community designation was having an effect over and above that of size. Given the manifest differences in design between community and non-community institutions this is likely, but the lack of any means

of quantifying these differences makes further exploration and explanation of these differences impossible.

The same problem applies to the analysis of the effect of Area. Whilst there are differences between the Areas which are confined more to building-related costs than staffing, these are very difficult to account for without detailed knowledge of the organisation of schooling in the areas before 1974 re-organisation. The differences are complex. For example, whilst repair costs are higher in Cambridge, which has a higher proportion of older schools, maintenance costs are higher in Peterborough, which has a higher proportion of new buildings because of its New Town status. Finding links back to the pre-reorganisation era is also problematic because inertial effects are likely to interact in complex ways with current factors.

Having examined the distribution of resources between schools, the next chapter anaylses their translation into curricula.

CHAPTER 8: AN ANALYSIS OF VARIATIONS IN THE CURRICULUM BETWEEN AUTHORITIES AND CHANGES OVER TIME

8.1 Towards a new analysis of the curriculum

Chapters 6 and 7 provided a detailed analysis of the pressures the LEAs in the four case-study areas have been under since 1979 in terms of the resources at their disposal and their management of contraction. This chapter analyses the translation of these resources into the curriculum. Because of the nature of the data available this takes the form of a comparison of the structure of the curriculum in all four LEAs in 1986/7, with the addition of an analysis of change over time in Sheffield and Cambridgeshire.

The analysis of the curriculum which is given is the first such discussion in this range and detail and hence a number of innovations in classification and methods of analysis are required. It has been recognised, for example by Lawton (1989), that 'Curriculum Studies is a relatively new subject in the UK...The curriculum is often taken for granted rather than studied, and discussions tend to centre on minor adjustments to traditional timetables rather than fundamental rethinking of aims and purposes' (p.1). Although is not the purpose of this thesis to undertake such a complete rethinking, Lawton's comment does highlight the lack of attention which educationists have traditionally paid to overall curriculum structures. Lawton attributes this inattention to a dislike of theory, and we have already noted (Section 2.6) the failure of the educational policy community to confront the curriculum as a whole. 'Good teachers regarded themselves as practical people who had no need of curriculum theory...' (*ibid*, p.2). Thus Taylor and Richards (1985) have written: 'In the final analysis...the justification for, and the value of curriculum research must be its contribution to the practical enterprise of curriculum' (p.170).

This neglect has had important consequences for the literature on the curriculum since it is largely written by teachers for teachers. The literature tends to be concerned either with individual subjects (e.g. Wiegand and Rayner, 1989), with single curriculum projects (e.g. Shipman, 1974) or is highly theoretical (e.g. Young, 1971; Lawn and Barton, 1981). In general the approach tends to be overwhelmingly normative or draws upon best practice for purposes of dissemination. Empirical assessments of the overall curriculum are very rare. The surveys by HMI and DES, already discussed in Chapter 3, are not very analytical and do not seek to relate overall curriculum structures to other factors in a systematic manner. No studies have attempted to compare the curricula of schools in different authorities or to relate them to their contexts of resources and socio-economic conditions in the way they are in this thesis.

This and the next chapter analyse the results of the process of translating teaching resources into the curriculum. In order to do so the curriculum is categorised into subject groupings, which are discussed below. The thesis thus begins its exploration of the curriculum in terms of the overall structure. The analysis of subject groupings, which is the core of this chapter and the next, is a key means of breaking into what has remained the 'black box' of curriculum variations. However, it is important to recognise that this analysis of the 'surface form' of the curriculum ought to be complemented with the analysis of more detailed aspects of curriculum structure, which reflect the important nuances of curriculum differences. For this reason, the analysis of overall structure is accompanied by the analysis of a sample of key subjects.

8.2 Definitions

An examination of the curriculum in terms of subjects and subject groupings needs to bear in mind that there are important differences in the nature and role of different subjects and their place in the wider society which acts as an important constraint upon curriculum change and flexibility at local

level. For example, it is widely known that their are important differences in the numbers of boys and girls taking examinations in different subjects. More generally, there is recognised to be a *status hierarchy* in the curriculum which ensures that certain subjects are held to be of greater merit than others and which is likely not to be totally unrelated to the differences in sex. Young (1971) first drew attention to the fact that school knowledge was stratified. High status subjects were those academic courses which were based on written, individual, abstract work which bore little relation to daily experience. They were reinforced by the nature of the examination system. High status subjects are taken 'predominantly by middle-class and male pupils' (Reid, 1986, p.70).

As we saw in Chapter 2, the curriculum has continued to be dominated by a traditional structure inherited from the grammar schools and which has changed only slowly by a process of accretion. There has been a failure to challenge inherited assumptions and to engage in whole curriculum planning. Attempts to move away from the predominance of these types of modes of learning and assessment have been unsuccessful in achieving high status, witness the introduction of integrated humanities courses.

The concept of curriculum hierarchy is important in understanding the relationship of the curriculum to society and the economy. It suggests that a link exists between socio-economic context and subjects in the curriculum which reflects their place in the curriculum hierarchy. The role of a particular subject defined in this way is likely to vary over year groups, and it is also likely that its role will vary, to greater or lesser degrees, between schools and between LEAs. The position of a subject in the hierarchy will be closely related to its status as a core or marginal subject.

Despite the theoretical identification of the basis for the curriculum hierarchy, few researchers have sought to rank school *subjects* according to their place on the hierarchy. This may be

because, as Ivan Reid (1986) notes: 'It is not difficult to see the appropriateness of this model to subjects on the secondary school curriculum' (p.69). But Reid himself merely offers the difference between mathematics and science subjects and 'lifeskills' or child care and quotes the work of W. Reid (1972). This research analysed the acceptability of A-level subjects to university entrance requirements and found the following ranking, in declining order of status:

- mathematics and pure science;
- humanities and languages;
- social science;
- RE;
- music;
- art;
- housecraft.

Obviously, this ranking is not directly applicable to the 11-16 curriculum. The following two chapters will present an exploration of the relationships between the curriculum and socio-economic context which draws upon the concept of curriculum hierarchy to examine the role of different subjects in different contexts. In so doing it presents an analysis of one of the key constraints on curriculum management, insofar as this involves change and adaptation to local needs, at local level.

Equally important to these concepts is the fact of curriculum change. The early 1980s were important years for curriculum development. A number of key threads may be identified:

- *vocationalisation:* there has been an important trend towards the introduction of courses relevant to the world of work stimulated by Callaghan's Ruskin College speech of 1976. The most important single development has been the Technical and Vocational Education Initiative (TVEI) introduced by the MSC, but there have also been a host of other courses designed to

raise awareness of commerce and others to teach specific skills such as word processing.

- *new technology:* the curriculum has also adapted to technological innovations. Computing has become increasingly common in schools. Whilst the new technology has prompted vocationally-oriented courses such as information technology and word processing, it has also led to less vocational computing courses with close ties to mathematics.

- *relevance to daily life after school:* not unrelated to the trend to vocationalisation is the trend to make the curriculum more relevant to life in general. This has encouraged the advent of new courses such as 'lifeskills' and the reorientation of subjects such as home economics away from the simple preparation of, in this case, girls for a specific role (see Jepson, 1989).

- *integration:* integrated subjects in science and the humanities in particular have become increasingly common in schools. They encompass new approaches to their respective fields, but unfortunately have not achieved the same status as the separate subjects they replace; they have failed to avoid being cast in the role of substitutes for the less able.

- *equal opportunities:* there have been concerted attempts to move away from the traditional secondary school curriculum which encouraged the sexual divisions discussed above. Subjects such as Craft, Design and Technology (CDT) had, as part of their rationale, the need to make the skills in the traditional subjects they superseded available to all pupils (see Penfold, 1989).

These threads have been woven together in complex ways to affect the curriculum, and form an important part of the specific context for the research which follows. Key subjects have been selected for analysis with these trends in mind: they are

important indicators of the pace and direction of curriculum change.

8.3 The curriculum data

The curriculum data used in this chapter are derived from annual returns made by the schools to their respective LEAs. Whilst increasingly common, these returns have yet to be subject to systematic collection or academic analysis. It is this lacuna of research which this thesis addresses.

The returns vary in form and complexity. Those for Sheffield and Cambridgeshire use the Sheffield Notation System developed in the advisory service of that LEA (Wilcox and Eustace, 1977, 1980). However, its origins lie in a system developed by Davies (1969) which has formed the basis for the more widely known COSMOS system promoted by HMI (COSMOS being the convenient acronym of the Committee for the Organisation, Staffing and Management of Schools). Wilcox (1985) outlines the advantages of his own system, chief amongst these being its ability to contain a more comprehensive description of the curriculum and to summarise a schools curriculum on one sheet of A4 paper (though the clarity of this will depend on the care of the person completing the return, and schools with large intakes clearly have difficulty).

The Sheffield returns are the simplest, consisting of the return, plus some explanatory notes where necessary (Figure 8.1). The Cambridgeshire returns were supplemented with some additional questions, particularly in the first few years, though these have since been jettisoned for reasons of economy. The Newham returns (first used for the 1986/7 school year) are based on COSMOS and require a sheet for each year (Figure 8.2). The Leicestershire system is the most detailed and bulky of all (Figure 8.3). It was first introduced in 1985/6 and, like the Cambridgeshire return, has been slimmed down to reduce the burden on those required to complete them.

Figure 8.1 Sheffield curriculum return

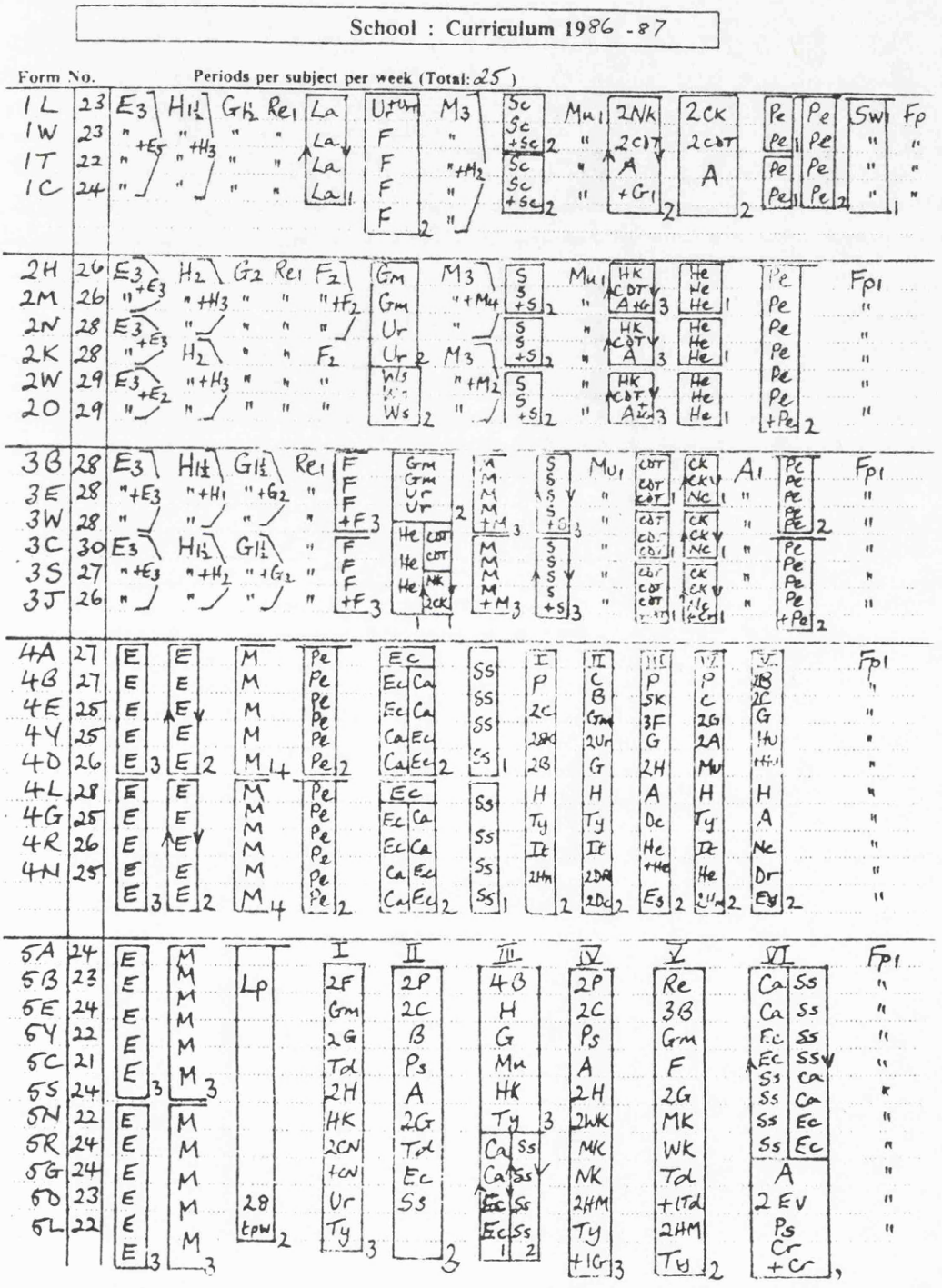


Figure 8.2 Newham curriculum return

SCHOOL: YEAR 1986 - 87

LENGTH OF PERIODS = 65 Min.
LENGTH OF TIMETABLE CYCLE = 1 week

FORM/CLASS NAME	NOS. OF PUPILS B	G	DETAILS OF CURRICULUM PROVIDED	NB 1	NB 1	NB 1	NB 2	NB 3		CHEC TOTA
3L	13	12	17/12 Fr2	Sc2 En3 Mu/Drl	Ca/Re 1	Hi/Ge 3	10/10 Tx 3	19/0 Pe 2	13/8 Ma3	
				+ Rm 1 1/0 Rm1	+ Rm 1	+ Rm 1		20/0 Pe 2		
3I	16	9	12/10 Fr2	" En3 "	"	"	15/5 Tx 3		12/8 Ma3	
				+ Rm1			11/9 Tx 3	20/0 Pe 2		
3S	15	10	11/10 Fr2	" En3 "	"	Hi/Ge 3		0/20 Pe 2		
				1/0 Rm 2			12/7 Tx 3		10/6 Ma3	
								0/20 Pe 2	20/6 Ma3	
3T	15	9	14/5 Fr2	Sc2 "	"	Hi/Ge 3	11/9 Tx 3		6/7 Ma3	
				+ Rm2						
3E	15	11	21/10 Fr2	" En3 Mu/Drl	"	"	12/8 Tx 3	0/15 Pe 2	15/9 Ma3	
				2/0 Rm 1 + Rm 1						
3R	17	10	12/11 Fr2	" + En 3 Rm 1 "	"	Hi/Ge 3 + Rm 1	13/7 Tx 3	0/15 Pe 2	14/9 Ma3	
							13/7 Tx 3	17/0 Pe 2		
3C	18	9	13/7 Fr2	" " "	"	"	12/8 Tx 3	17/0 Pe 2	14/10 Ma3	
				+ Et2				16/0 Pe 2	6/3 Ma 3	
			Lessons: 173 in horizontal groups + 4Li & 3Et (vertical grouping) =180							
			NB 1 These pairs of subjects rotate fortnightly; period allocation is weekly							
TOTALS	109	70	NB 2 These pairs rotate half-termly; they take Po Ar De Gc Nk and Hk							
	179		NB 3 These groups are NOT mixed - they take the following activities: Boys- football; basketball; volleyball and Rugby; Girls - Netball; hockey; gym; dance and volleyball.							

Figure 8.3 Leicestershire curriculum return

Curriculum Description (Main School)

Year 1		English	Social Studies	Language	Mathematics	Science	Design	Music	Physical Education	Remedial Education		

Pastoral Groups		E_8	G_4	L_4	M_6	Sc	A_6	A_2	P_4	RO_1		
1 HL	28	037 E01 8 28	024 606 4 28	046 604 4 28	053 M01 6 28	031 S16 6 28	037 A05 6 18	016 A01 2 28	009 P01 2 20	006 R01 4 -		
1 Ns	25	005 E01 8 25	004 606 4 25	005 604 4 25	004 M01 6 25	026 S16 6 25	002 A05 6 19	006 A01 2 25	023 P01 2 22	006 R01 2 -		
1 Pg	27	073 E01 4 27	027 606 4 27	008 604 4 27	015 M01 6 27	006 S16 6 27	002 A05 6 22	016 A01 2 27	024 P01 2 25	001 R01 4 -		
1 Gn	26	017 E01 4 26	024 606 4 26	024 604 4 26	053 M01 6 26	028 S16 6 26	012 A05 6 18	006 A01 2 26	002 P01 2 19	001 R01 2 -		
1 Hn	26	022 E01 4 26	029 606 4 26	013 604 4 26	062 M01 6 26	027 S16 6 26	019 A05 6 19	016 A01 2 26	005 P01 2 19	005 R01 2 8		
1 WC	27	063 E01 8 26	034 606 4 27	015 604 4 27	058 M01 6 27	010 S16 6 27	030 A05 6 20	016 A01 2 27	027 P01 2 24	006 R01 4 -		
		016 E01 4 27	006 Sup 4 -	006 Sup 2 -	006 Sup 2 -	005 Sup 2 -	018 A05 6 22	014 Sup 2 -	011 P01 2 20			
		024 E01 4 26		001 Sup 2 -	001 Sup 4 -	057 Sup 2 -	021 A05 6 21		011 P01 2 20			
		073 E01 4 26		024 Sup 4 -		006 Sup 2 -			014 P01 2 22			
		010 Sup 4 -				010 Sup 2 -			009 P01 2 21			
						001 Sup 2 -			023 P01 2 27			
									027 P01 2 20			
									009 P01 2 19			
									023 P01 2 18			
									027 P01 2 22			

Notwithstanding these differences, it is possible to derive the same information from the four areas. All the returns indicate for each year group the numbers of periods per subject and the number of groups for each subject. Thus, it is possible to look at the curriculum in two key ways:

(i) in terms of the number of periods allocated to each subject for each child out of a total number of periods (say 40) in a conventional school week (the usual basis of school organisation). This may take the form, for example, in Year 4 of 20 periods of core subjects and 20 periods of options. The unit of measurement in this case is the pupil period.

(ii) in terms of the staffing committed to each subject. This is calculated from the number of periods allocated to each subject and the number of groups through which that subject is taught. The result is known as teacher periods. This is given thus:

$$TPWx = Px.Gx$$

Where TPWx = teacher periods per week for subject x
Px = number of periods per week for subject x
Gx = number of groups for subject x

Since our interest is principally in resource issues, the second approach is clearly the most appropriate for our purposes. Examining the curriculum in terms of pupil periods is also of value but this is unfortunately impossible in the cases of Years 4 and 5 in Sheffield and Cambridgeshire where data on the numbers of pupils taking the various option subjects is not available. Hence the analysis here is of teacher periods.

By expressing each subject as a proportion of total teaching periods per week (TPW) for each year group it is possible to build up curriculum profiles for each school. This is the approach adopted in the paper by Wilcox (1985) already referred

to. Wilcox considers the variation in the curriculum profiles of secondary schools in Sheffield in one year. The approach has also been used by Harrold and Hough (1988) to analyse the distribution of teaching resources across year groups in one school in Leicestershire. This chapter and that which follows greatly extend the analysis of the curriculum using the teacher periods methodology.

8.4 Categorising the curriculum

Because of the very large number of named subjects in the curriculum - 240 here alone - some categorisation into subject groupings is essential to reduce the data to manageable proportions. The approach adopted is to place the subjects named on each curriculum plan under twelve heads:

- English Studies
- Maths Studies
- Religious Studies
- Humanities
- Languages
- Sciences
- Physical and Leisure subjects
- Aesthetic subjects
- Education for Personal and Social Competence (EPSC)
- Occupational Skills and Crafts (OSC)
- Cross-curricular subjects
- Remedial and Special Needs provision

A full listing of the subjects found under each head is given in Appendix 3.

This categorisation is not without its problems. Indeed, the whole notion of establishing frameworks through which to penetrate the complexity of the curriculum has absorbed educationalists for many years. DES and HMI have grappled with defining the curriculum and their definitions have passed through a number of different forms. For example, in 1977 HMI

(DES/HMI, 1977) produced the following classification according to eight 'areas of experience':

- aesthetic and creative
- ethical
- linguistic
- mathematical
- physical
- scientific
- social and political
- spiritual

In 1985, the DES (1985) produced a nine-fold classification of 'areas of learning and experience':

- aesthetic and creative
- human and social
- linguistic and literary
- mathematical
- moral
- physical
- scientific
- spiritual
- technological

Concerned with normative conceptions of curriculum entitlement, HMI have warned against equating these areas with named subjects. Elsewhere, however, where this concern is not paramount, HMI (DES/HMI, 1988, Appendix 4, pp.106-7) have used the following categories:

- sciences
- humanities
- creative and expressive arts
- craft/technology
- languages
- vocationally related courses
- city and guilds courses

- traffic education programme
- community service/personal and social development courses

This approach to curriculum categorisation has the advantage that it can be easily related to named subjects. The disadvantage is that subject names tell us little, within very broad parameters, about what is taught, and still less, how. What is taught within subjects of the same name can vary from school to school for reasons of both pupil ability and teacher background. Moreover, some subjects may be taught within others or taught separately, depending on the school (careers, for example, may be taught alone or subsumed in a general life skills course), though in this instance it is possible to argue following Wilcox (1985) that subjects taught separately make a distinctive contribution. Whatever the category used, overlap is bound to occur; in some schools, indeed, an 'integrated' curriculum occupies a sizeable proportion of the school day.

To overcome these problems, subjects were placed under categories according to their *main* orientation, established through an analysis of options booklets and prospectuses from the schools in question, from discussions with officers in the authorities and by drawing on categories used by Wilcox (1985) and Hurman (1978). This means that whilst subjects are placed in definite categories, it is recognised that they may contain elements of other groupings. This necessarily entails placing subjects according to a general definition rather than that of specific schools. Wilcox (1985) was able to obtain his categorisation from the schools themselves. Whether this is an outright advantage over the method used here is doubtful since it relies on senior staffs' own interpretation of terms such as 'aesthetic'.

A number of categorisations were possible here. Weston (1977, pp.112-3) presents an early example of a now common approach, identifying:

- English

- Maths
- Languages
- Sciences
- Humanities
- Aesthetic/Practical
- PE
- Pastoral

Unfortunately, the aesthetic/practical grouping is very gross. Wilcox (1985) uses a more satisfactory classification:

- English Studies
- Maths Studies
- RE
- Traditional Humanities
- Integrated Humanities
- Lifeskills
- Languages
- Sciences
- Creative/practical
- Aesthetic
- Vocational
- Physical and leisure

However, a number of objections can be lodged against this categorisation. Firstly, the need for a division of integrated from traditional humanities is unusual and is not necessary for our initial purposes. Secondly, the 'life skills' category appears to cover newer subjects on the curriculum rather than older ones such as home economics, which may well be included under creative/practical but which are arguably as orientated towards life beyond school. Thirdly, the division of creative/practical from vocational subjects is one that is increasingly difficult to sustain given the increasingly vocational orientation of crafts subjects.

For these reasons, use is made of Hurman's (1978, pp.75-76) classification which recognises aesthetic subjects, occupational

crafts, and education for personal and social competence. This avoids the grouping together of subjects like home economics and needlework with metalwork and technology and reflects a different side of these subjects which avoids the generality of creative/practical. The classification used here, which is listed at the start of this section, therefore represents a combination of Wilcox's and Hurman's schemes.

Two additional subject groupings were added, however. *Cross-curricular subjects* encompass general areas of work which do not fall automatically into any one category, such as project work, private study and modular pursuits. Many of these subjects involve some form of independent study or choice on the part of pupils.

Remedial and special needs provision is also identified as a separate category. This is in contrast to Wilcox's (1985) decision to allocate remedial periods to the subject to which it is related, or, where withdrawal operates, to English and Maths in the ratio 6:4. This is highly arbitrary and masks important differences between schools in the levels of staff allocated to remedial which can reach significant proportions. Unfortunately, however, the Sheffield Notation System cannot cope easily with remedial provision, apart from where this occurs as identifiable remedial groups. In the case of Sheffield, remedial withdrawal was only recorded as additional notes, the reliability of which cannot be guaranteed. Even where respondents did note the existence of remedial periods, they sometimes found it impossible to estimate the number of TPW's committed to this, because withdrawal was on the basis of needs and teaching loads varied during the year. Other schools enjoyed the advantage of special needs units not staffed from the mainstream allocation of teachers and therefore not included on the return. In view of this, it was decided to count only those remedial periods allocated to particular subjects. The result is to underestimate the amount of remedial/special needs provision in Sheffield and this needs to be borne in mind in the results which follow. In the case of Cambridgeshire, the other

LEA to use the Sheffield system, an additional return fortuitously ensures a more accurate representation of the subject. Even here, however, remedial provision can be made through the allocation of a number of TPWs across all years. In such instances, the TPWs are simply divided equally amongst the years. This type of provision is differentiated in the results which follow from the remedial periods attributed to particular subjects. This is because in Cambridgeshire many schools are able to identify periods of remedial English and remedial maths, for example. For Newham and Leicestershire, the returns specify fully the staff commitment to the area, though it is not always clear when remedial/special needs is attached to particular subjects. In a few schools, remedial banding was identified. Where this occurs, the subjects offered were automatically included under their appropriate curricular headings. This was very rare however.

Problematic areas of the curriculum

Having described the rationale behind the choice of curriculum areas, a word needs to be said regarding the technicalities of the data collection form the original returns. In the vast majority of cases this was straightforward. However, in one or two instances special rules had to be applied.

Integrated curricula. Problems arise for the method of analysis used here from the occurrence of creative arts and/or crafts circuits and integrated humanities courses in a number of schools. The creative arts and crafts circuits involve to varying degrees elements of subjects included under the aesthetic, OSC and EPSC headings. It was decided to split TPW equally amongst these headings according to the subjects specified by the school. This is not a significant problem and affected only parts of the curriculum in some year groups in three schools in Cambridgeshire, two in Newham and none in Sheffield or Leicestershire. In Sheffield one school provided a creative studies course consisting of art, drama, music and English. This was split equally between English and Aesthetics.

As far as integrated humanities courses are concerned, these occurred at two schools in Cambridgeshire, two in Sheffield, three in Newham and three in Leicestershire. In all cases TPW was split equally between English studies and humanities. Whilst these courses may well contain elements of RS and EPSC courses, the contribution of these is unknown and it was felt preferable to recognise the existence of English rather that conceal it within humanities.

Minor subject aggregation. Instances of this were rare. For example, one Cambridgeshire Village College records the provision of agriculture and building studies together. In cases such as these each subject is disaggregated and placed under its own heading. Where subjects were taught across years (most commonly in physical education and general studies) the TPW was divided between year groups in proportion to the number of classes in each year. All of these instances were rare.

Subjects outside the timetable and provided by other schools. Where subjects were taught outside of the timetabled curriculum (in lunch hours, for example) or provided by other schools, they were excluded from analysis. The reasons for this approach is that although these periods are important from the viewpoint of a pupils' experience, our concern here is with the deployment of a school's own resources.

Form periods and assemblies. Following Wilcox (1985) these are included only where they are part of the timetable. It is reasonable to suggest that where a school gives up part of its finite resource of time to these practices then the contribution is potentially very different to where it occurs outside of the timetable.

In the analysis which follows, the subject groupings are treated as proper nouns and individual subjects are given in lower-case characters, except in obvious instances where this is not

possible (English, French, etc.). Similarly, school year groups are treated as proper nouns, and referred to as 'Years'.

8.5 Inter-LEA comparisons

8.5.1 Variation in curriculum profiles

Given the very different social, economic and political contexts of the four case-study LEAs, it might be expected that these differences would have some consequences for the curriculum structure in the authorities. To permit comparison between the authorities, average curriculum profiles were calculated using the means of the percentage shares of TPW in each subject area in each school. Remedial provision is not included at this stage because of the problems with the Sheffield data described above. Figure 8.4 presents the results of this analysis for each subject grouping across Years 1, 3 and 5. In addition, Tables 8.1 and 8.2 presents the median number of subjects taught in each subject grouping and in total across the four case studies in Years 3 and 5 respectively.

The most striking feature is the overall uniformity between the average curriculum in the four LEAs. In general all four show similar shares of TPW for each subject grouping and similar trends over the three Years. There are, however, some exceptions to this and I shall return to these below. The other general patterns to note are that the main variations are between subject types and between year groups. In the following section, each subject grouping is dealt with in turn, describing the similarities and differences between the LEAs in each case.

In the areas of **English Studies** and **Maths Studies**, the share of TPW is roughly consistent throughout Years 1 to 5 and the median number of subjects is equal across LEAs. This is what would be expected given its core status in the curriculum. Maths Studies has a slightly higher share in all three years, probably due to the fact that this grouping encompasses subjects such as computing rather than a higher level of teacher input

Figure 8.4 Curriculum structure in terms of shares of TPW in constituent subject groupings, Years 1, 3 and 5, by LEA, 1986/7

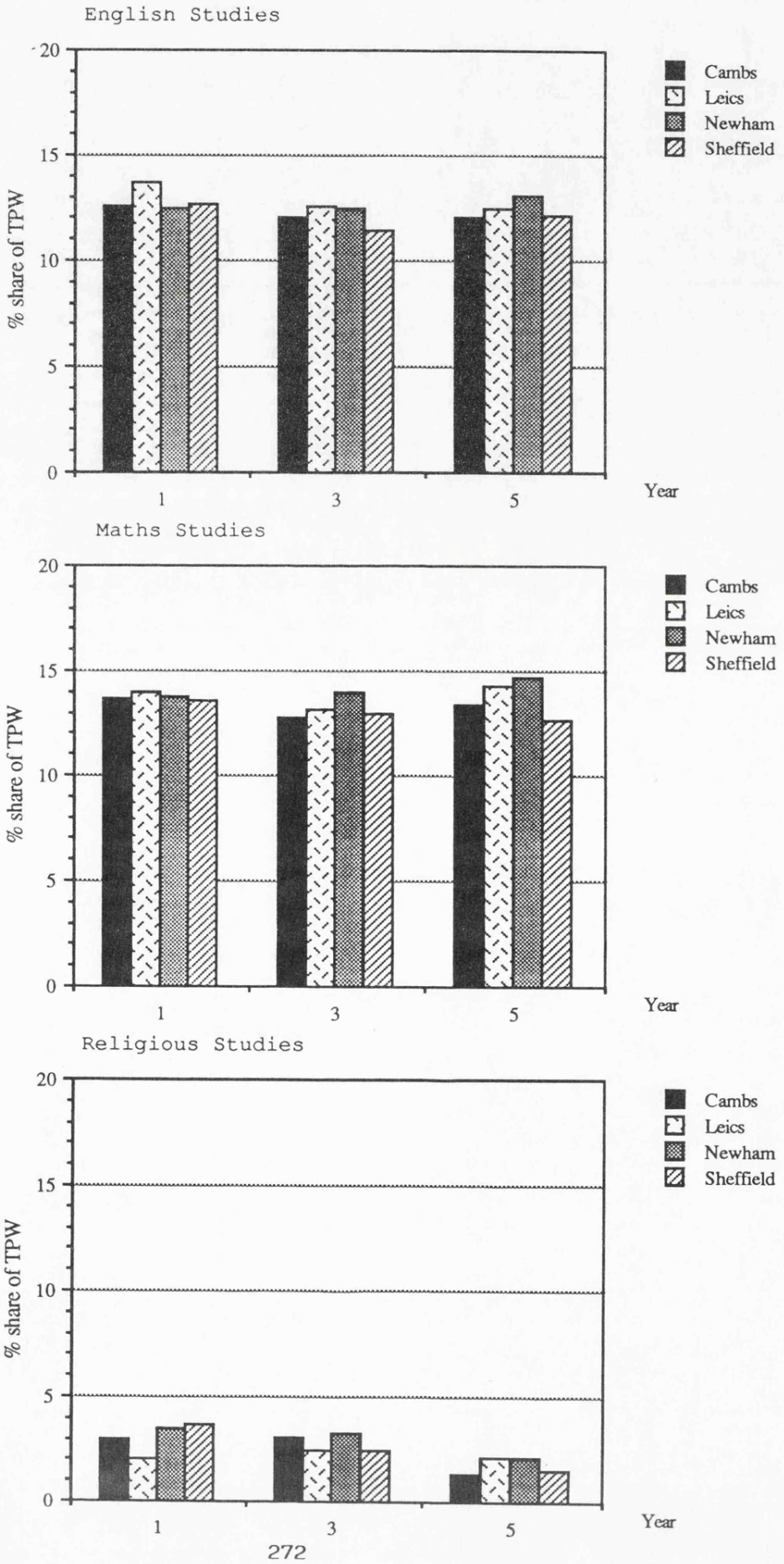
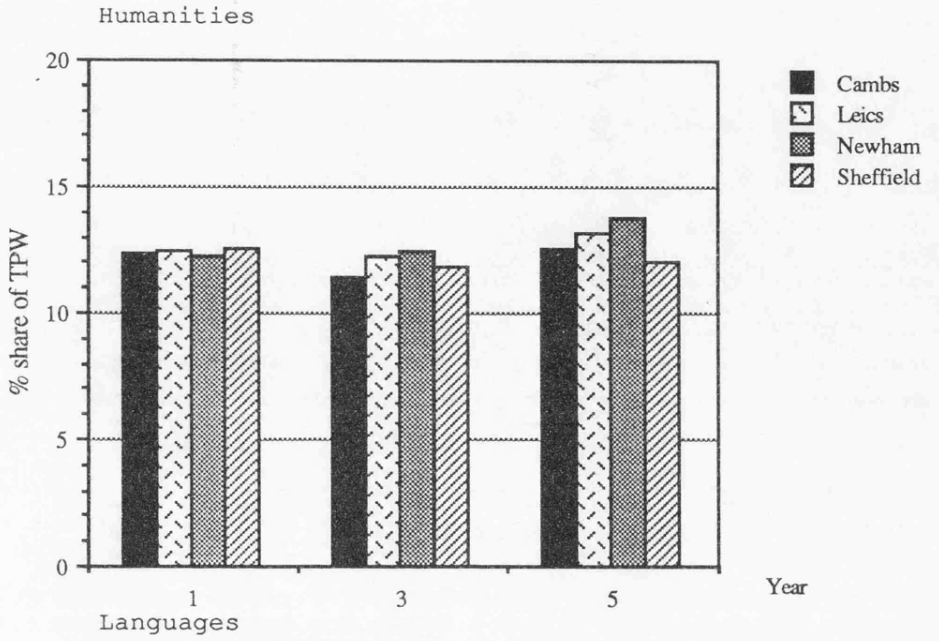
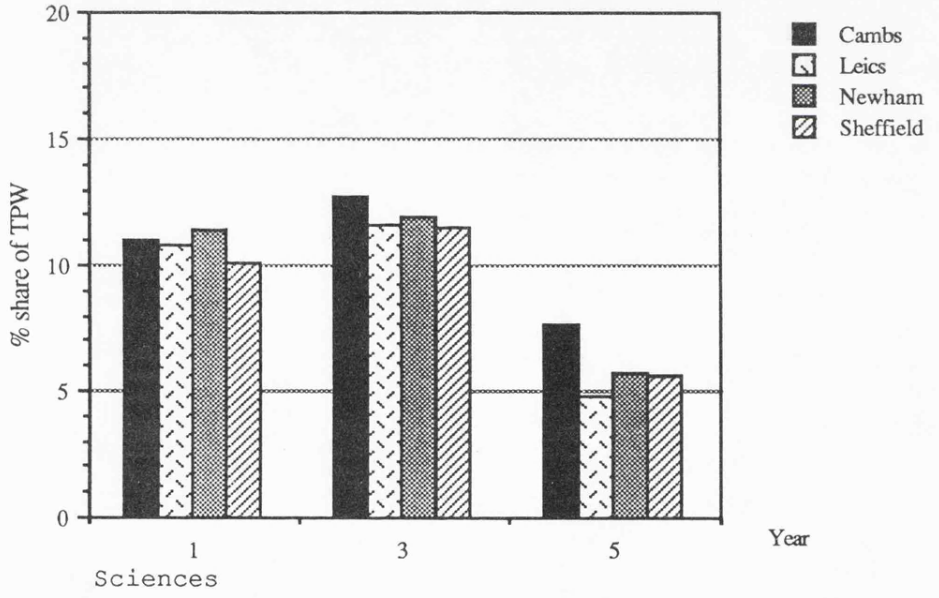


Figure 8.4 contd.





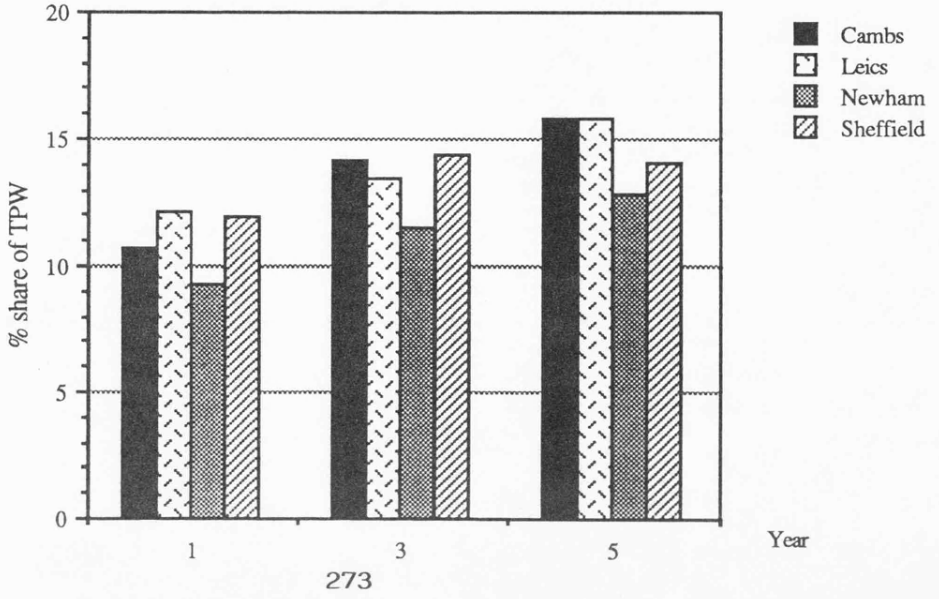
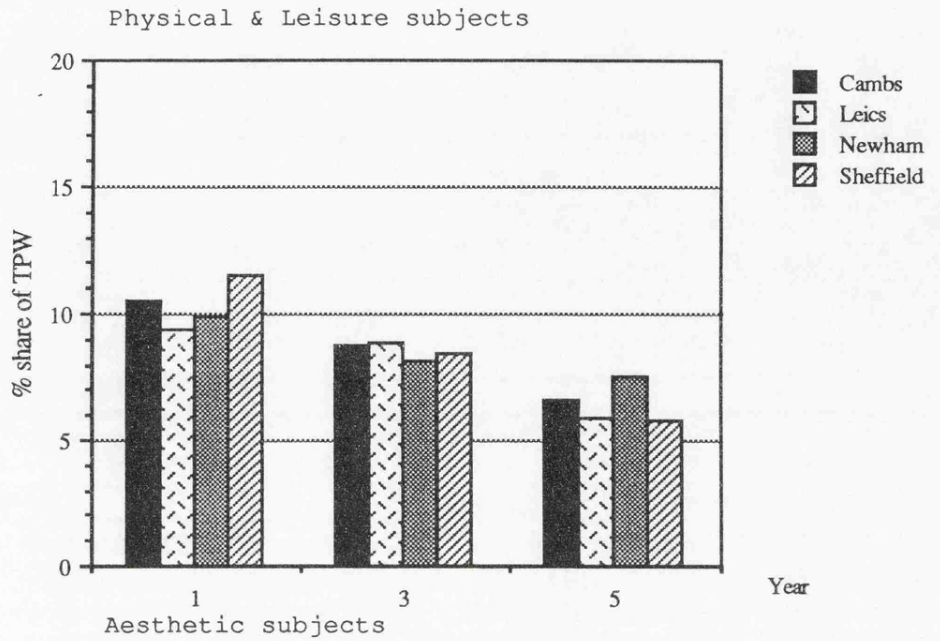
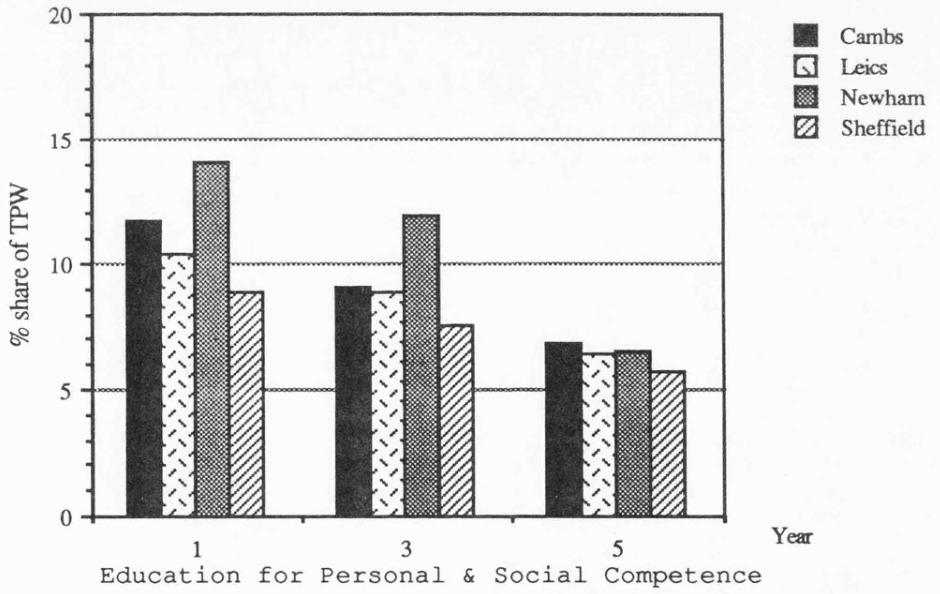


Figure 8.4 contd.





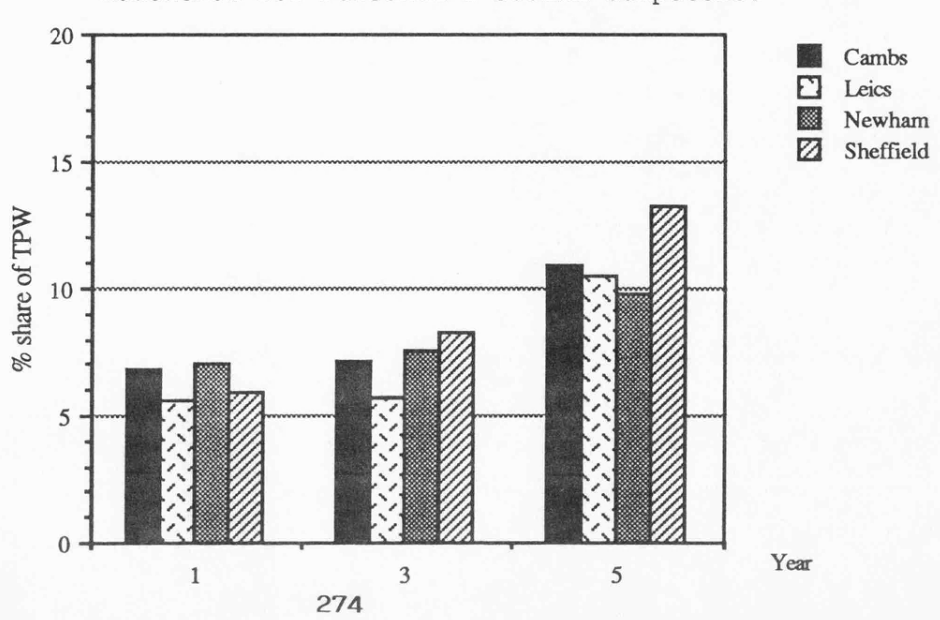
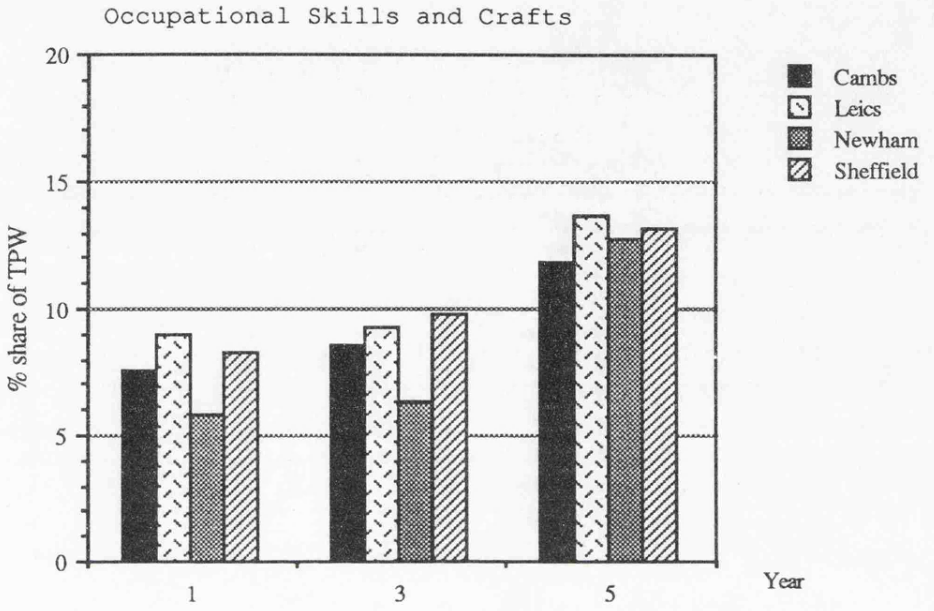


Figure 8.4 contd.



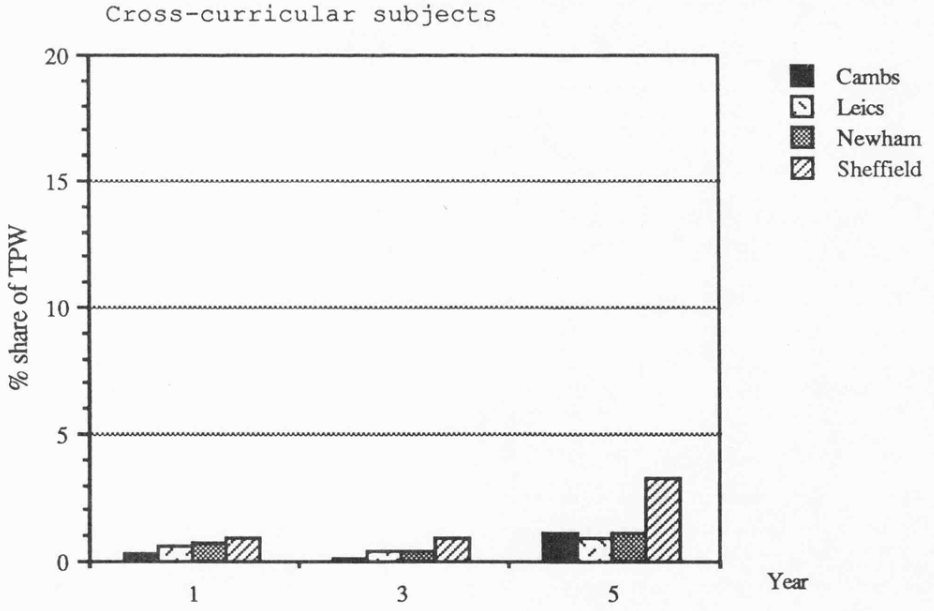


Table 8.1
Median number of subjects in each subject grouping, Year 3, 1986/7, by LEA.

	Cambs.	Leics.	Newham	Sheffield
English Studies	1	1	1	1
Maths Studies	1	1	1	1
Religious Studies	1	1	1	1
Humanities	2	2	2	2
Languages	2	2	2	2
Sciences	3	3	1	3
Physical & Leisure	1	1	1	1
Aesthetic	2	3	3	2
EPSC	2	2	2	2
OSC	2	2	1	1
Cross-curricular	0	0	0	0
Remedial/SN*	1	1	1	0
Unknown	0	0	0	0
Total	19	19	18	17

Note: * This category will under-represent provision in Sheffield because of the problems described in the text.

Table 8.2
Median number of subjects in each subject grouping, Year 5, 1986/7, by LEA.

	Cambs.	Leics.	Newham	Sheffield
English Studies	1	1	1	1
Maths Studies	2	2	2	2
Religious Studies	1	1	0	1
Humanities	3	4	4	3
Languages	3	2	3	3
Sciences	4	5	4	4
Physical & Leisure	1	2	1	1
Aesthetic	2	3	3	3
EPSC	4	4	4	4
OSC	6	6	5	5
Cross-curricular	0	0	0	0
Remedial/SN*	1	1	1	0
Unknown	0	0	0	0
Total	27	31	28	27.5

Note: * This category will under-represent provision in Sheffield because of the problems described in the text.

into Maths itself. The classes and number of periods devoted to English and Maths tends to be the same in many schools (see HMI, 1988).

Even within this overall uniformity, however, differences emerge. Leicestershire has the highest share in English studies in years 1 and 3, closely followed and then overtaken by Newham in Years 3 and 5. This reflects the operation of two different factors: in the case of Leicestershire, the traditional arts/humanities bias of the county schools (see Chapter 4) and in Newham and the city of Leicester, the need for more resources to provide basic literacy in the face of high urban deprivation and large ethnic minority populations. For Maths Studies, it is Leicestershire and Newham which again emerge as marginal leaders. For Newham this is because of the need for basic numeracy courses; for Leicestershire the reason is partly a similar need in Leicester. Interesting to note is the marginally lower priority accorded to these core areas in Sheffield. However Sheffield has a smaller English language problem than Newham and, as we shall see below, concentrates more of its resource in the EPSC and OSC fields.

In the area of **Humanities**, the share of TPW tends to dip slightly in all LEAs in Year 3, rising again in year 5. The changes are, however, of the order of one or two percentage points at most. Once again, it is Leicestershire and Newham which tend to accord this grouping the greatest priority in years 3 and 5. These trends are reflected in the numbers of subjects in each grouping. The number rises in Year 5 from Year 3 with the most substantial increase (a doubling) in Leicestershire and Newham. Taken with the findings for TPW shares, these results clearly speak of a diversification in subject choice within a largely fixed proportion of TPW, although the absolute amount of TPW will increase because of the increase in total TPW over Years. This corresponds to the introduction of option systems after Year 3.

In all the other subject groupings, significant changes take place in their relative priority over the year groups. Between Years 1 and 5 the subject groupings which lose staff resources are: Religious Studies, Languages, Physical and Leisure and Aesthetics. Those which gain are Sciences, EPSC, OSC and, of marginal significance, Cross-curricular subjects. This overall shift quite clearly reflects the growing influence of the world outside school in the latter years of schooling and, in the case of Cross- curricular subjects, the availability of time for independent study. For some of the groupings it is the break after Year 3 which is critical to their change in TPW. This applies to Religious Studies, Languages, EPSC, OSC and Cross-curricular subjects. In these areas, it is the options system and the associated examination courses which contribute to their increase or decrease in TPW. In the other areas - Physical and Leisure subjects, Aesthetics and Sciences, the change in TPW is spread across the Years. In many of these areas outside of the core of English Studies and Maths Studies there is scope for considerable variation in provision. These are manifest in the appearance of some significant differences between LEAs.

In the case of **Religious Studies** , these differences are marginal in terms of the overall total TPW but important within the grouping itself. Thus, whilst the grouping never absorbs more than 4% of total TPW in any LEA, Sheffield devotes twice as much TPW to Religious Studies as Leicestershire in Year 1. This may well be because forms of religious education may occur as parts of humanities course and would therefore not appear under Religious Studies. This may well account for the fact that uniquely amongst the case studies, RS shows a value of 0 in Year 5 for the median number of subjects in this category. At the same time, it is open to question how far religious education occurs separately or under humanities as a result of school *policy* or due to resource constraint. This is an important issue as it affects to what extent religious education is congruent with the aims of the rest of a school's curriculum. A further factor accounting for the differences is the percentage of church schools in the LEAs, being highest in Newham. In all

cases, the share of total TPW accounted for by Religious Studies declines after Year 3.

Although the share of **Languages** TPW falls between Years 1 and 5, roughly halving in three of 4 LEAs, it shows the unique feature of rising from Years 1 to 3 in all the case studies. Despite the fall in TPW share by Year 5, the median number of subjects taught rises between years 3 and 5 in three of the LEAs , a similar relationship to that found in Humanities. As far as individual case studies are concerned, most noticeable is Cambridgeshire whose schools, in aggregate, accord much greater priority to Languages in Year 5 than schools in the other authorities. This accords with the social and economic background of its population, given that languages tend to be a Year 4 and 5 option taken by pupils from the higher socio-economic groups, and is given a further fillip in Years 1 to 3 with the need for the provision of English as a second Language in Peterborough. The English language problem probably also accounts for Newham's marginally higher share of TPW in Year 1.

Physical and Leisure and **Aesthetic** subjects show an increasing marginalisation over Years 1 to 5. In the case of Physical and Leisure subjects, no case studies are particularly noteworthy since relative positions tend to shift over the Years. But in terms of median subject numbers, Leicestershire is noteworthy for its larger number in Year 5. For Aesthetics, however, Newham is salient with a relatively high priority accorded to this grouping in Years 1 and 3. In Sheffield, in contrast, this is accorded a relatively low priority, being over 5% of total TPW below Newham's mean share in Year 1, and around 4% below in Year 3. Attention also needs to be drawn to the marginally higher priority accorded to Aesthetic subjects in Cambridgeshire in terms of shares of TPW compared to Leicestershire, but the greater subject choice available in the latter. A comparison of Year 3 in Leicestershire and Newham also stresses the fact that Leicestershire, whilst according markedly less TPW to Aesthetic subjects, provides on average similar subject choice. Leicestershire's county arts tradition

is clearly at work here, providing what is, on the face of it, similar breadth of experience for a lower allocation of TPW. Although direct comparisons of PTRs are not possible because of Leicestershire's dual school system, it is possible to suggest that Leicestershire provides a similar number of subjects without the opportunities presented to Newham by its more favourable PTRs. However, this may well be at the expense of contact ratios and/or class size.

The principal gainers of TPW over Years 1 to 5 are the Sciences, EPSC and OSC. All three also show major increases in the number of subjects taught. In the case of the **Sciences** there is a steady increase over Years from an inter-case study range of 9.3-12.1% in Year 1 to 12.9-15.8% in Year 5. Throughout the Years Newham has the lowest share of TPW and in Year 3 exhibits a much lower average number of subjects, reflecting the delivery of the subject through a general science course rather than biology, chemistry and physics. Sheffield has a high share in Years 1 and 3, but it is overtaken in Year 5 by Cambridgeshire and Leicestershire, the latter of which also provides the greatest number of science subjects in Year 5.

In **Education for Personal and Social Competence** (EPSC) the rise in TPW share is from at most 7% to upwards of 9.8%, with the principle increase taking place after Year 3, in contrast to the steady increase in Sciences. The number of subjects doubles in all LEAs. Sheffield emerges with the highest share of TPW accorded to EPSC for Year 3 onwards, being markedly out of line with the rest in Year 5, although this makes no difference to the average *number* of subjects delivered. Leicestershire accords the grouping relatively low priority in the first three Years, but the differences are marginal.

In **Occupational Skills and Crafts** (OSC) the range of values rises from 5.8 - 9% in Year 1 to 12.8 - 13.7% in Year 5. As with EPSC, OSC subjects show their main increase in TPW share after Year 3. This is accompanied by the largest increase of

all groupings in numbers of subjects between years 3 and 5 - a trebling in the shire counties and a five - fold rise in the two urban authorities. As far as differences between the case studies are concerned, there is a narrowing of variation in provision in terms of TPW after Year 3, such that in Year 5 differences are marginal. In Years 1 and 3, however Newham is noticeable for the low priority attributed to OSC, whilst this applies to Cambridgeshire throughout the Years. Such findings stand in contrast to those for subject numbers. According to these, it is the shire counties which provide a wider range of subjects in Years 3 and 5.

These latter three subject areas have been dealt with together since they are revealing of key differences between the four case-studies as they represent areas of the curriculum where there is considerable scope for choice and variation. Moreover, given the trend of central government policy on the curriculum towards making schooling more 'relevant' to the world of work, these are important subject groupings. A number of points need to be noted. Firstly, the greater priority accorded to Sciences in the Shire Counties in Year 5 in terms of TPW compared to the urban LEAs is revealing of the higher status of these subjects on the curriculum hierarchy. Of those subject areas which might be said to have a vocational element, it is the Sciences which have the highest academic standing. In the case of Year 5 in Leicestershire the large share of TPW is accompanied by the highest number of subjects in the category of all the LEAs. Secondly, given the much greater problems of unemployment and deprivation in Newham and Sheffield we might have expected these authorities to have accorded greater priority than the Shires to the EPSC and OSC groupings. This is by no means true across all Years. Especially noticeable is Newham's low percentages in Years 1 and 3 in OSC and in Year 5 in EPSC, which stands in marked contrast to the strong orientation of the Sheffield curriculum to these areas. Also noteworthy is the fact that in EPSC the average number of subjects is invariant between LEAs, whilst in OSC it is the shires which provide more individual subjects. Although Newham seems to accord less priority to OSC

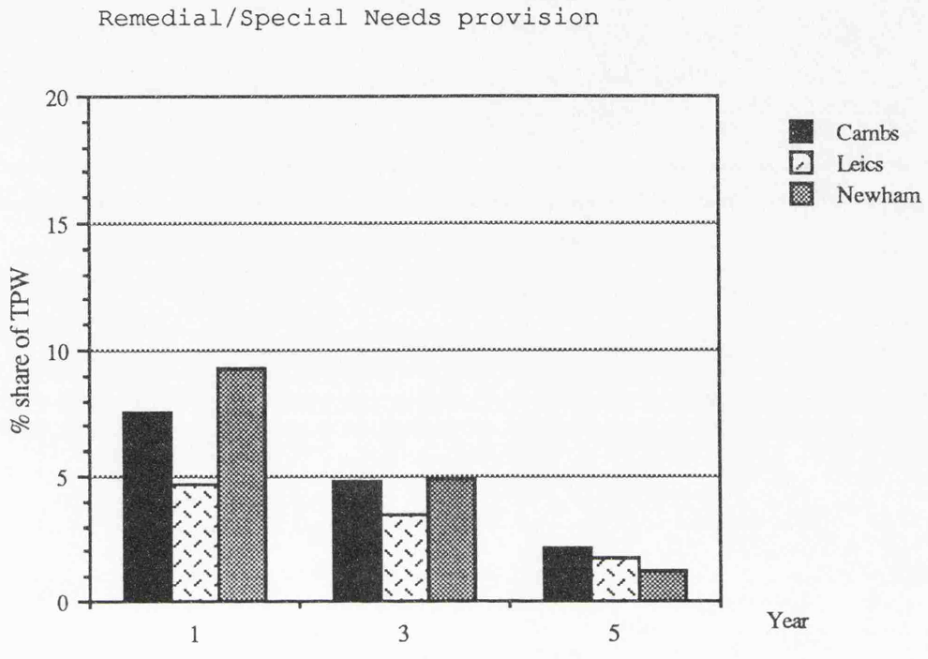
and EPSC than Sheffield, it faces very different problems to the Yorkshire authority and has to provide considerable resources for basic literacy and numeracy courses; this is borne out by its figures for English and Maths studies. However, considerable resources are also devoted to Aesthetic subjects in Years 1 and 3 and , to a much lesser extent, to Physical and Leisure subjects in Year 5.

Finally, a mention must be made of the area of **Cross-curricular studies**. In general this represents a very small proportion of total TPW. As we would expect, the scope for cross-curricular work is higher in Year 5 than Years 1 and 3. But only in Sheffield in Year 5 might this be said to constitute an important marginal area of the curriculum.

It was stated above that, due to problems with data from Sheffield, TPWs were calculated excluding **Remedial/Special Needs provision** in order to facilitate comparison across all four LEAs. However, for three of the case studies it is possible to compare the shares in this category. As Figure 8.5 shows, the importance of Remedial/Special Needs declines over Year groups in all 3 authorities, being of marginal significance in Year 5. The largest absolute differences between the authorities is in Year 1 where Remedial/Special Needs provision is clearly a significant absorber of teaching resources in Newham. Remedial/Special Need's share of TPW is also high in Cambridgeshire but this may be due in part to the way Remedial/Special Needs was recorded in English and Maths as a identifiable subject - in other LEAs it may have remained hidden. The share of TPW accounted for by this grouping in Leicestershire is around half of what it is in Newham in Year 1.

Taken as a whole the curriculum profiles of the LEAs reveal important differences between the authorities. The average profile for **Cambridgeshire** shows a curriculum with few distinguishing features compared to the other LEAs. It tends towards a relatively large share for Aesthetic subjects in all three Years but more important is the higher priority accorded

Figure 8.5 Proportion of total TPW accounted for by Remedial/Special Needs provision, Years 1, 3 and 5, 1986/7



to Languages in Year 3 and especially Year 5. In Year 5 high priority is also accorded to Sciences. This high priority in Languages and Sciences is achieved at the expense chiefly of OSC. This pattern reflects in part the status hierarchy of the curriculum and perhaps a more traditional orientation of the curriculum in Cambridgeshire, a finding reinforced by the very small proportion of TPW absorbed by Cross-curricular subjects in Year 1 and 3.

The average curriculum profile for **Leicestershire** shows important contrasts to these patterns. Whilst high priority is accorded to Sciences in Years 1 and 5, this is accompanied by high priority in OSC in the same Years. High shares of TPW in these areas are traded off against low shares for Physical and Leisure subjects and, in Year 5, Languages. Leicestershire also accords high priority to English Studies in Years 1 and 3. Given the sharp contrasts between the urban and rural parts of the county in socio-economic conditions and school organisation it is difficult to draw conclusions regarding the links between these factors and the curriculum at the LEA level. These are explored in Chapter 9. However, there is clearly a significant bias towards science and the vocational aspects of the curriculum. This emerges more strongly than the emphasis on the arts and humanities which is a feature of the Leicestershire Plan schools, and which is reflected in the results for English Studies.

Newham curricula show, in aggregate, a clear priority for Aesthetic subjects in Years 1 and 3, which leads to a low share for OSC and Sciences. This shows the need to provide for a highly deprived, educationally-alienated inner city population which has little chance of achieving success in the traditional mainstream curriculum. The low TPW share for Sciences reflects, once again, its high status in the curriculum hierarchy. The needs of Newham's multi-cultural population also dictate a strong emphasis on Languages in Year 1, and there is also a high priority accorded to EPSC. Fortunately, given the high levels of resourcing in the borough, it is likely that these needs are

satisfied without an adverse effect on the rest of the curriculum. In Year 5 there are important changes to the curriculum structure. Basic needs lead to a high share of TPW in English and Maths Studies and Humanities, whilst the low share of Science TPW continues.

In **Sheffield** there is a clear trade-off in Year 1 between Physical and Leisure and Aesthetic subjects, whilst in Year 3 the small TPW share in Aesthetic subjects does not lead to a large share in one particular grouping, but is spread between the Sciences, EPSC and OSC. The relatively large share for Cross-curricular subjects continues throughout all Years. The clear bias to a curriculum oriented towards science and vocational subjects and the needs of life after school is not so apparent in Year 5. But there is a clear priority to EPSC, accompanied by a small TPW share for Maths Studies, Humanities, Physical and Leisure subjects, and Aesthetic subjects. There are important contrasts here with the curricula of Newham which reflect the very different characteristics of the populations being served.

8.5.2 Variation within the authorities

The above section compared the average curriculum profiles of the four case study LEAs. The chief variations are between subjects and between year groups; there is surprisingly little variation between LEAs. However within the LEA averages, there are considerable variations between schools inside each authority. To facilitate the analysis of this, coefficients of variation were calculated from the % TPW shares for each subject grouping in each authority and the results displayed in Figure 8.6. Because this analysis is of internal variation it includes Remedial/Special Needs provision. Figure 8.6 permits the identification of the relative variation of each subject grouping and also indicates how this variation differs between authorities. For ease of comparison, each graph is based upon the same vertical scale, with the exception of those for Religious Studies, Cross-curricular subjects and

Figure 8.6 Coefficients of variation for subject groupings' shares of TPW, Years 1, 3 and 5, by LEA, 1986/7

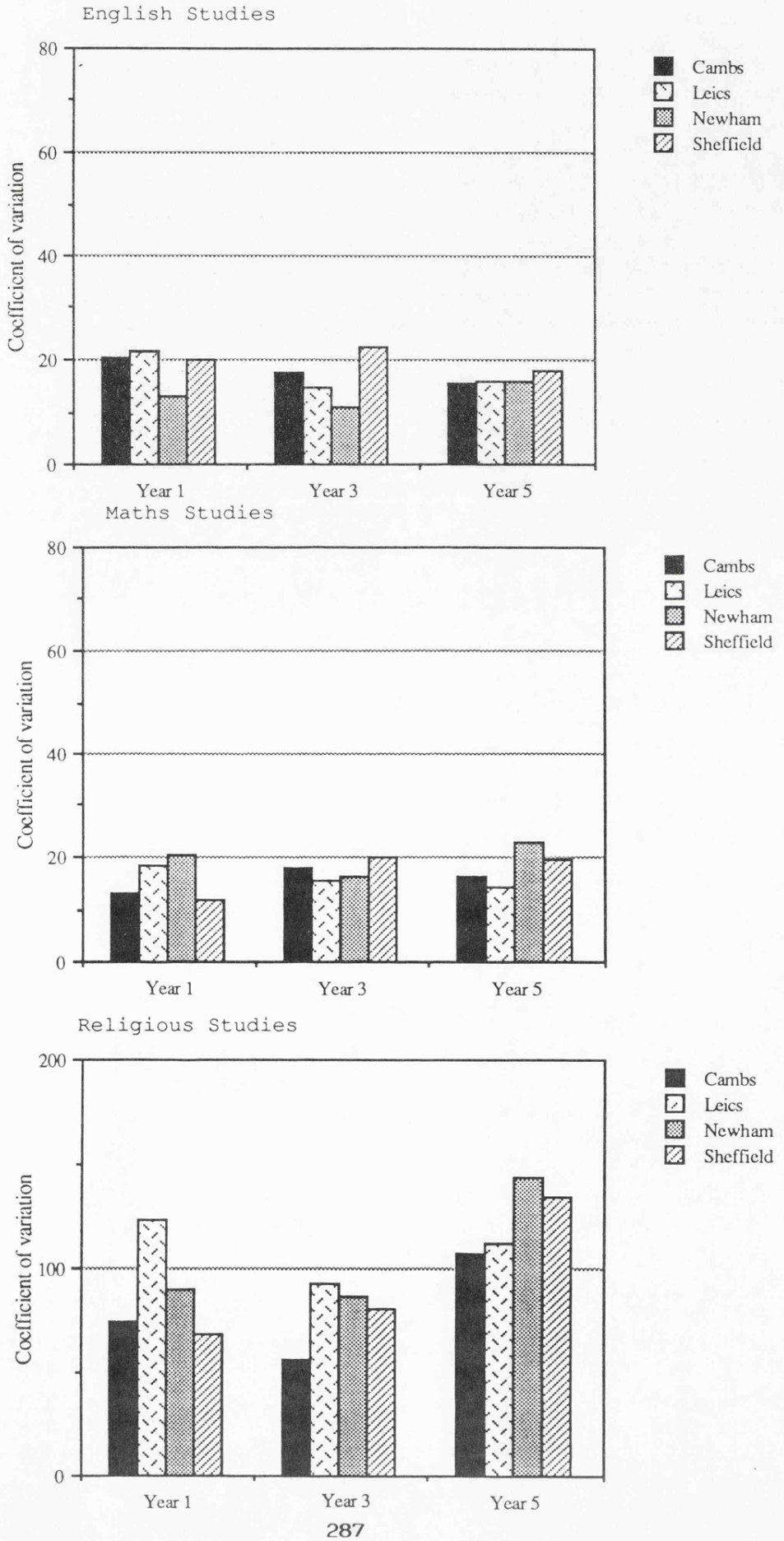
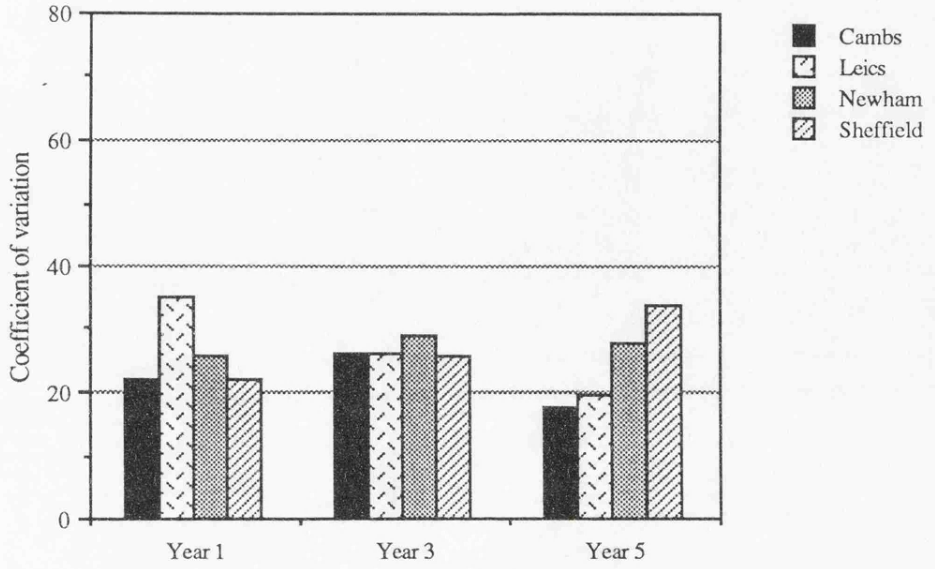
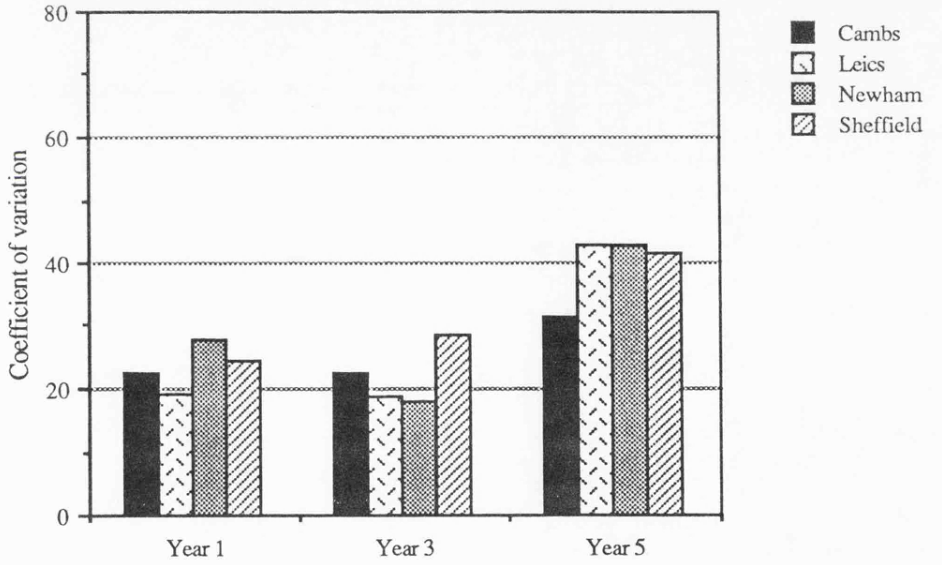


Figure 8.6 contd.

Humanities



Languages



Sciences

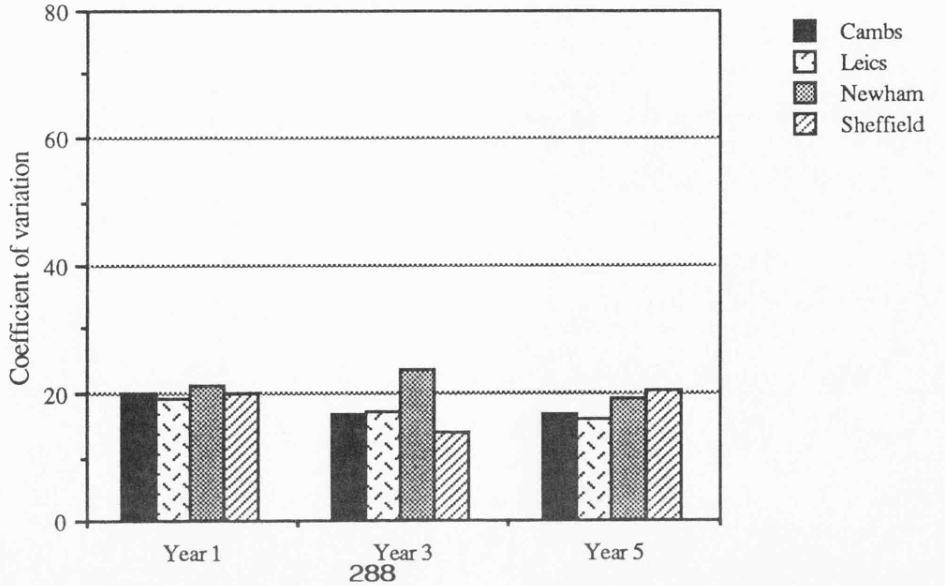
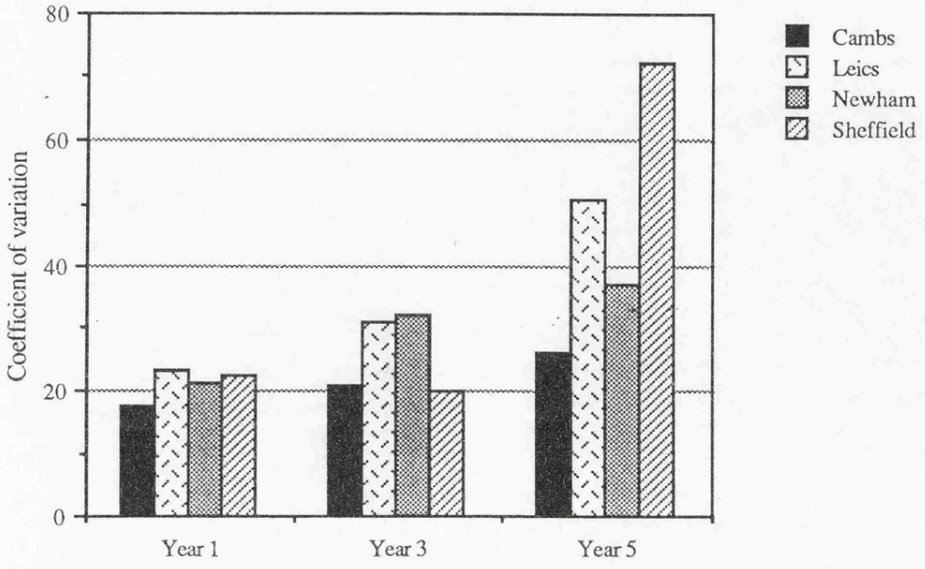
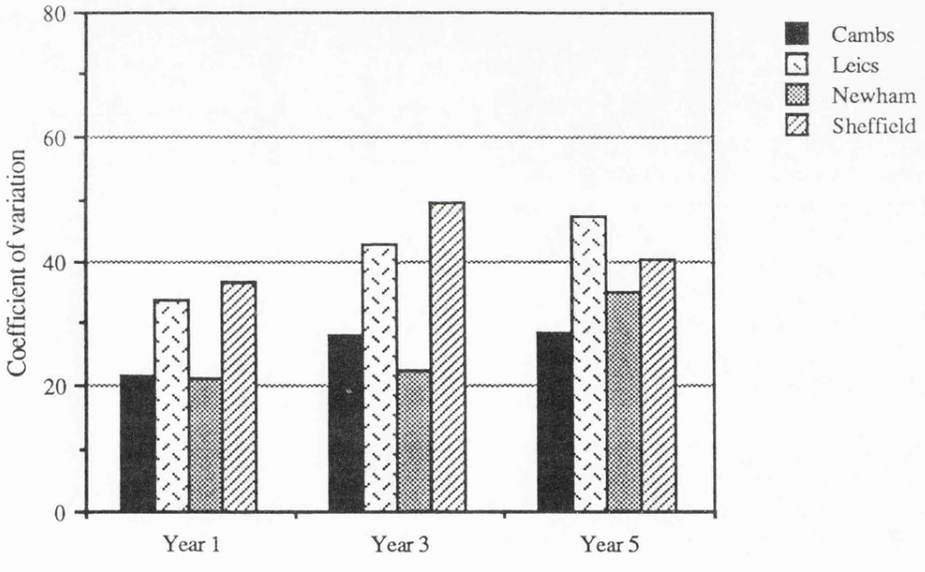


Figure 8.6 contd.

Physical & Leisure subjects



Aesthetic subjects



Education for Personal & Social Competence

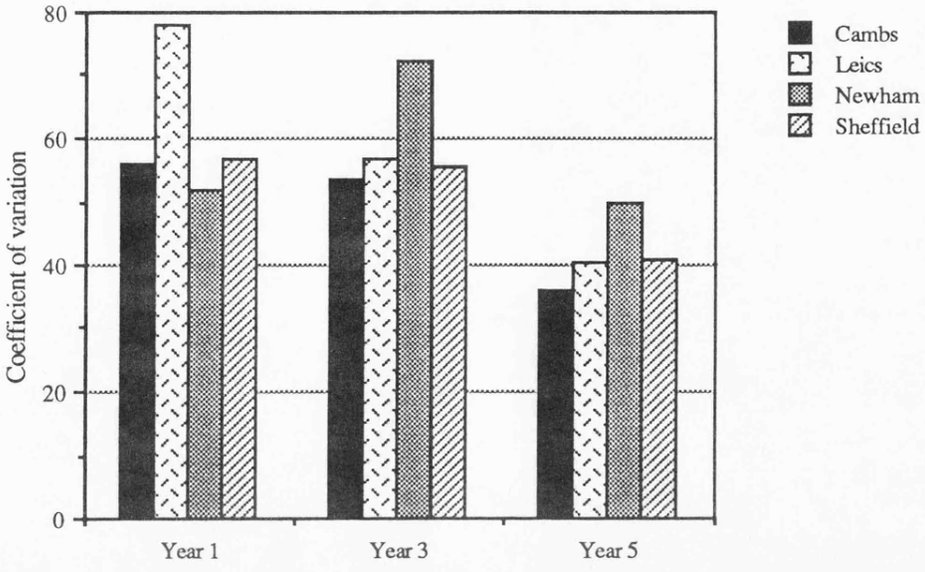
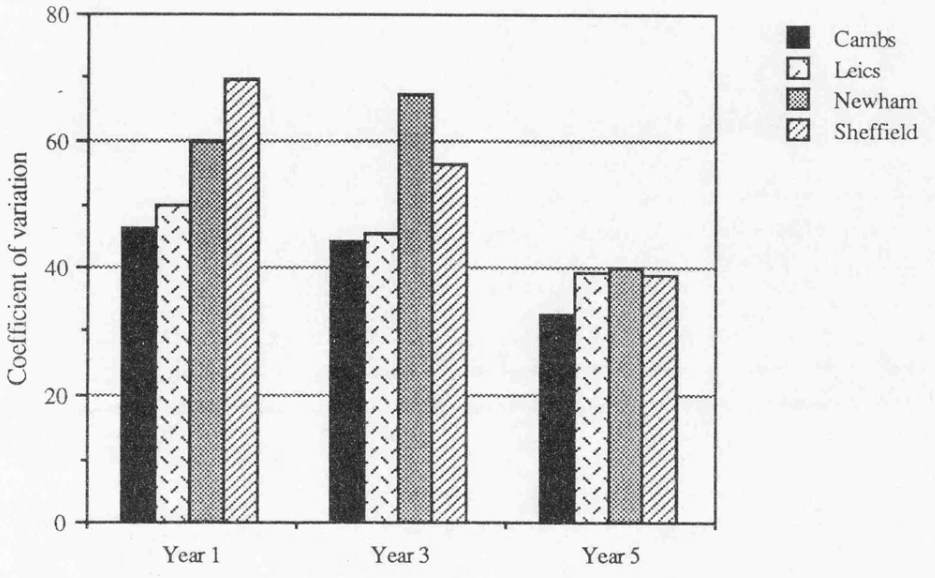
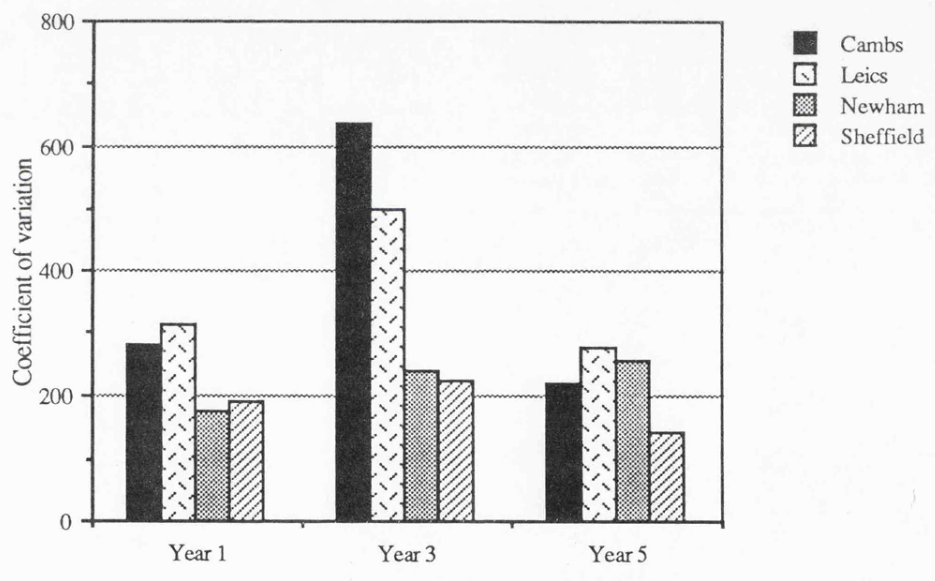


Figure 8.6 contd.

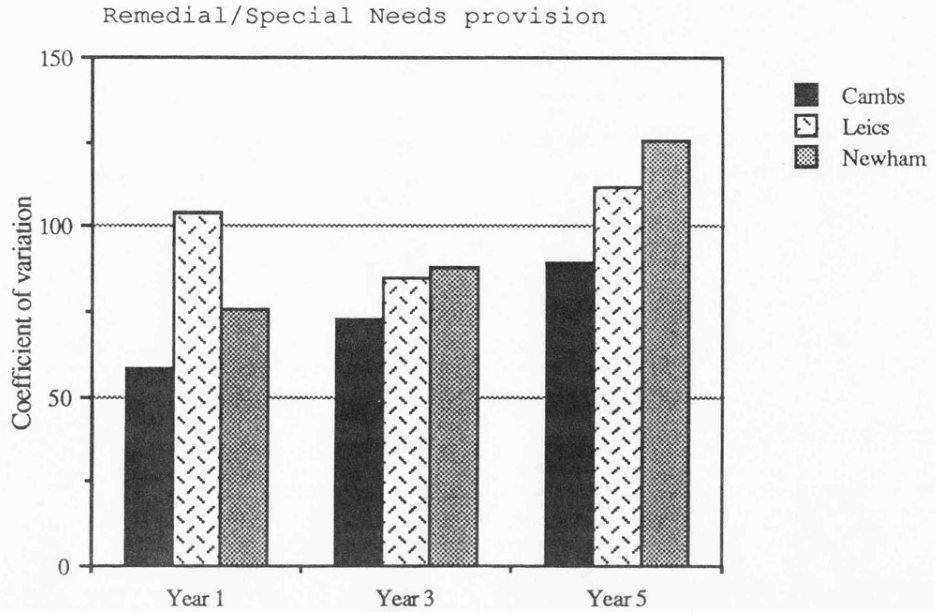
Occupational Skills and Crafts



Cross-curricular subjects



Remedial/Special Needs provision



Remedial/Special Needs. In order to indicate what the coefficients of variation mean in practice, Table 8.3 displays the inter-quartile ranges for the percentage TPW shares of the subject groupings by Years and LEAs. Taken with Figure 8.6, this figure allows one to assess the importance of variation in a particular subject grouping to the overall structure of the curriculum.

Not surprisingly, given their core status, **English Studies** and **Maths Studies** tend to show the least relative variation of all subject groupings in all three Years. This is true across all four LEAs. Minor differences occur between the LEAs in the extent of variation between their schools, but these are inconsistent over Years although the greater uniformity amongst Newham's schools in English in Years 1 and 3 stands out, in contrast to its relatively greater variation in Maths Studies in Years 1 and 5. Low levels of variation also hold for **Sciences**. However, as Table 8.3 reveals, even in these three groupings of least variation, the variation between the top and bottom quartiles can be in excess of 4% of total TPW which can mean significant differences between schools.

Humanities subjects tend to show greater variation within the LEAs than English and Maths Studies and the Sciences. As with this group, how this variation changes over Year groups depends upon the LEAs in question: there is little consistency between authorities. In Years 1 and 5 there are significant differences between LEAs. Leicestershire shows noticeably greater variation in Year 1 than all other authorities, perhaps reflecting the urban/rural contrasts in the county. In Year 5, the LEAs show a spread of coefficients, with Sheffield exhibiting the greatest variation. As Table 8.3 shows, this difference is due more to Sheffield's lower bottom quartile than its top quartile.

Languages exhibit comparatively little variation in Years 1 and 3. However, in Year 5 all LEAs show a marked increase in the degree of variation compared to Year 3; in the case of Leicestershire and Newham the coefficient more than doubles. As

Table 8.3
Interquartile ranges of shares of TPW by subject grouping, Year and LEA.

English Studies

	Yr 1	Yr 3	Yr 5
Cambs.	9.9-13.0	10.0-13.0	10.2-13.4
Leics.	11.1-14.4	10.8-13.4	10.9-13.6
Newham	10.4-12.7	10.9-13.0	11.1-14.4
Sheffield	11.6-15.0	10.4-12.7	10.0-13.8

Maths studies

	Yr 1	Yr 3	Yr 5
Cambs.	11.6-13.8	10.8-13.7	11.5-14.5
Leics.	11.4-14.9	11.2-14.3	12.7-14.9
Newham	10.9-15.0	11.4-15.2	11.3-16.7
Sheffield	12.1-15.1	11.4-14.9	11.2-14.1

Religious Studies

	Yr 1	Yr 3	Yr 5
Cambs.	0.0-4.5	2.1-4.4	0.0-1.7
Leics.	0.0-4.1	0.0-4.1	0.0-3.5
Newham	0.0-4.5	0.0-4.5	0.0-4.1
Sheffield	1.6-4.9	0.0-3.7	0.0-2.4

Humanities

	Yr 1	Yr 3	Yr 5
Cambs.	9.2-13.5	9.0-12.9	11.0-14.5
Leics.	10.1-13.8	9.8-13.3	11.1-14.4
Newham	8.6-12.8	8.3-13.6	11.2-15.4
Sheffield	9.8-14.5	8.9-14.1	9.1-13.8

Table 8.3 contd.

Languages

	Yr 1	Yr 3	Yr 5
Cambs.	8.7-11.6	10.4-13.6	5.5-8.9
Leics.	8.8-11.5	9.8-12.8	3.3-6.0
Newham	8.3-12.7	10.5-13.1	3.9-8.2
Sheffield	8.8-11.2	8.8-13.5	3.6-7.6

Sciences

	Yr 1	Yr 3	Yr 5
Cambs.	8.6-11.2	12.4-14.6	13.3-17.1
Leics.	9.9-13.0	11.5-14.5	13.9-17.0
Newham	7.1-9.3	8.7-13.6	11.2-14.4
Sheffield	9.6-13.5	12.9-15.5	12.6-16.1

Physical & Leisure subjects

	Yr 1	Yr 3	Yr 5
Cambs.	8.4-10.6	7.0-9.8	5.4-7.3
Leics.	8.1-9.8	7.3-9.6	3.7-8.3
Newham	7.6-10.5	5.5-10.3	5.2-9.0
Sheffield	9.6-13.3	7.0-10.0	2.1-8.5

Aesthetic subjects

	Yr 1	Yr 3	Yr 5
Cambs.	9.2-12.1	7.7-9.6	5.3-7.6
Leics.	7.3-12.3	5.6-11.6	4.7-7.4
Newham	11.5-15.1	9.1-13.5	4.5-8.1
Sheffield	6.1-11.2	4.4-10.0	4.4-6.9

Table 8.3 contd.

Education for Personal and Social Competence

	Yr 1	Yr 3	Yr 5
Cambs.	3.7-9.2	4.4-7.9	8.1-12.6
Leics.	2.8-6.7	4.1-10.1	7.2-13.6
Newham	4.2-9.4	4.6-8.9	6.3-13.6
Sheffield	4.2-8.6	4.9-11.6	9.1-16.9

Occupational Skills and Crafts

	Yr 1	Yr 3	Yr 5
Cambs.	4.3-9.4	5.9-10.2	9.3-12.8
Leics.	5.8-11.0	6.1-12.1	9.8-15.3
Newham	4.5-6.7	3.8-9.7	8.9-16.2
Sheffield	4.7-13.5	5.8-13.2	8.8-16.0

Cross-curricular subjects

	Yr 1	Yr 3	Yr 5
Cambs.	0.0-0.0	0.0-0.0	0.0-0.1
Leics.	0.0-0.0	0.0-0.0	0.0-0.7
Newham	0.0-2.0	0.0-0.0	0.0-1.1
Sheffield	0.0-1.3	0.0-0.0	0.0-6.6

Remedial/Special Needs

	Yr 1	Yr 3	Yr 5
Cambs.	5.0-10.4	2.3-6.4	0.1-3.4
Leics.	0.0-7.1	0.3-5.3	0.0-2.7
Newham	0.0-14.6	0.0-8.1	0.0-2.8
Sheffield	N/A	N/A	N/A

Table 8.3 reveals, whilst the value of the inter-quartile range remains broadly the same over the Years, the median falls, producing the rise in the value of the coefficient of variation. This phenomena is clearly related to the fact that after Year 3 languages become an option choice, an issue which will be pursued in more detail in the individual LEA analyses below.

Physical and Leisure subjects also exhibit this trend towards increased variation after Year 3. This is true of all LEAs, but more noticeable in the case of Leicestershire and Sheffield than Cambridgeshire and Newham. For Leicestershire and Sheffield, the much greater internal variation in Year 5 is due to lower bottom quartiles rather than higher upper quartiles. In the case of Sheffield, variation is such that the upper quartile school devotes more than four times as much TPW to this subject grouping than the lower quartile. By contrast, the multiplier for Cambridgeshire is just 1.35.

Aesthetic subjects also show higher internal variation in Leicestershire and Sheffield than in the other two LEAs, but in this instance across all Years. In three of the four LEAs, variation is once again greatest in Year 5 the exception being Sheffield, which peaks in Year 3. The greater variation in Leicestershire and Sheffield reflects greater variation between school backgrounds.

By far and away the most significant internal variations are found in the **EPSC** and **OSC** groupings. (Although the Remedial/Special Needs and Religious Studies groupings show higher coefficients, their more marginal position in the curriculum in terms of TPW means that in absolute terms they are less significant. They are dealt with below.) Although the degree of variation in these groups reduces after Year 3, it still remains high compared to the other subject areas and is particularly high given the fact that in Year 5 the two areas each consume in excess of 10% of total TPW. Whilst the level of variation in Year 5 in Languages, Physical and Leisure subjects and Aesthetic subjects is not dissimilar to that of EPSC and OSC

(although this depends very much on the LEA) their smaller shares of TPW reduce their importance to the overall curriculum. A comparison of the Year 5 inter-quartile ranges of EPSC and OSC with those for English and Maths Studies, which possess similar shares of TPW, is revealing of the importance of the variations in EPSC and OSC. In the case of EPSC, the upper quartile is typically around twice as great as the lower quartile in Years 1 and 3 and between 1.5 and more than twice as great, depending on the LEA, in Year 5. Similar figures are recorded for OSC, with the added complication of greater variation between LEAs in Years 1 and 3. Even within these general patterns, there are, of course, differences between LEAs. For EPSC, Leicestershire exhibits unusually high internal variation in Year 1 compared to the other three, whilst its position is superseded by Newham in Years 3 and 5. For OSC, it is Sheffield which stands out for its variation in Year 1, followed by Newham, which once again exhibits the largest coefficient in Year 3. In Year 5, the LEAs show similar results. Analysis of the coefficients of variation needs to be balanced with the information on inter-quartile ranges. This is clear, for example, with Leicestershire's coefficient for EPSC in Year 1. Although this is the largest coefficient, its inter-quartile range is smaller than that for Cambridgeshire, its high coefficient resulting from the fact that this is a *relative* measure of dispersion. The results for Newham are perhaps surprising given its socio-economic homogeneity.

The largest coefficients of variation are to be found in the **Religious Studies**, **Cross-curricular** and **Remedial/Special Needs** categories. Already high in Years 1 and 3, the coefficients for Religious Studies and Remedial/Special Needs tend to be greatest in Year 5. However, because of the very small percentage of TPW dedicated to these areas in Year 5, the variation is perhaps of greatest importance in Years 1 and 3. In Cross-curricular subjects, the greatest variation tends to be in Year 3. On the whole, variation in these three categories is of less significance than in other areas, although for individual schools the high level of inter-school variation can

be very important. In Newham , for example, the Year 1 inter-quartile range for Remedial/Special Needs can make the difference between 0 and 14.6% of TPW being allocated to this grouping.

It is clear from the foregoing discussion that the degree of variation can vary considerably within LEAs. This between-school variation is the subject of the next chapter, which will look at each case study in turn. Because of problems of data comparability, which are discussed more fully below, it is not possible to carry out detailed comparisons of internal variations *between* LEAs. However, at this point it is possible to draw out differences in the *extent* to which the curriculum varies within LEAs between the four case studies. This will place what follows in context.

The first point to note is the tendency for variation to be smallest in **Cambridgeshire**. In 9 of the 11 subject groupings in Year 5 this is the case. In none of the other Years does it emerge as having a highly varied curriculum compared to the other LEAS. Such comparative homogeneity is perhaps surprising given the diversity across the county in terms of socio-economic background (see the case study descriptions in Chapter 4), particularly compared to an authority such as Newham which exhibits great uniformity. In contrast, the other county authority in our sample, **Leicestershire**, stands out for its considerable variations in a number of instances. In 6 of 11 Year 1 subject groupings it shows the highest coefficient. This is probably due to the two systems which co-exist within the county. The explicit curricular aims of Leicestershire Plan schools suggests an *a priori* rationale for high variation in Year 1 with the decline by Year 5 being due to the unifying influence of the examination system. The fact that this does not take place for Aesthetic subjects may be due to the more general trend apparent elsewhere towards greater variation through greater discretion in later Years. The high variation amongst EPSC subjects in Year 1 may be due to the important urban/rural cleavage in the county, corresponding broadly to the

Leicestershire Plan/Leicester City split. These differences are explored more fully in Chapter 9.

Sheffield is also an authority of contrast. In Years 1 and 3 it has the highest or second highest coefficient in six and five groupings respectively out of the 11 for which data is available. In Year 5 it has four of the highest coefficients and four of the second highest. Especially notable is the high variation in Year 5 Physical and Leisure subjects and Year 1-3 Aesthetics.

Newham also exhibits high internal variation. It shows the highest variation in 6 of the 11 Year 5 groupings. Salient amongst its large coefficients are those for Religious Studies in Year 1 (due to its high proportion of Church schools), EPSC in Years 3 and 5 and OSC in Year 3. Significantly, the comparatively high variation in EPSC in Year 5 and OSC in Year 3 coincides with relatively low shares of TPW in these areas. The same relationship is true of the Sciences in Year 3. This suggests that the generally lower priority accorded these groupings in the borough as a whole is accompanied by significant variation. In general, such substantial variations are surprising given the socio-economic homogeneity of the borough.

8.5.3 A comparison of key subjects

So far attention has been concentrated upon describing the nature of variations in the overall curriculum structure. The subject groupings on which this analysis is based are derived from 240 subjects, so these groupings, whilst essential as a starting point for study, contain a wealth of information on the detail of curriculum patterns, not all of which can be explored through the method used above.

In this section, comparisons are drawn between the case studies in terms of the occurrence of a number of key subjects. It ought to be noted that, despite the wide range of named

subjects, most schools concentrate their activities in a narrow range of predictable subjects: English, maths, history, geography, the sciences, art, music, drama, RE, languages (usually French or German), crafts subjects, home economics etc. The huge variation identified in this thesis stems partly from courses of similar content being given different names by different schools - sometimes arbitrarily in non-examined subjects - and also from the occurrence of a large number of minor subjects. However, minor variations of nomenclature *can* embody genuine differences. Take the example of environmental education. When taught as part of the humanities, this is known as environmental *studies;* when part of natural sciences, as environmental *science*. The difference may be overblown, but it is reasonable to suppose that both course content and pedagogy will be very different depending on whether humanities or science staff are delivering the subject. A number of subjects are minor in total curriculum terms. However, these subjects are a key expression of school *difference,* a manifestation of ethos, of approach. They occur in the margins of school activity where curricular discretion can be exercised.

Unfortunately, because of their large variety, these minor subjects are intrinsically difficult to analyse at the LEA level of aggregation. However, these variations do find expression in certain subject groupings and certain Years in particular. This is particularly true of EPSC and OSC. It is in these areas where schools exercise considerable flexibility and thus where major variation is to be found, as already shown. In addition, particular subjects are indicative of the key trends identified at the start of this chapter. It is these subjects which are focused on here. The previous section has also shown the importance of the Years after Year 3 to curriculum variation. It is in these Years that schools can introduce variations through options systems and move away from the more basic provision of Years 1-3. The following section therefore concentrates upon key subjects in Year 5.

At the outset, it must be noted that the four case study authorities based their curriculum returns on three different curriculum notation systems. It is important therefore, to guard against the possibility that subjects which are essentially the same are coded under different headings. However, this is much less of a problem for the common subjects, and it is these which have been chosen for analysis where possible. Where this is clearly a difficulty, groups of like subjects have been chosen instead. We shall look at each in turn to show why they were selected.

We have already seen the importance of EPSC and OSC subjects for variation in the curriculum. These are likely to contain important individual subject differences. Moreover, these areas have been the locus for major curriculum innovation in recent years as shown at the start of this chapter and their subjects are likely to reveal both the most innovative and pro-active schools and authorities and those which are more attuned to providing more vocationally-orientated curricula. With this in mind, careers and personal and social development (PSD) courses were selected for examination from EPSC. From OSC were selected technology, information technology and a group of subjects related to one of the most important economic sectors of recent years, the service sector. (This group consists of typing, shorthand, shorthand and typing, office practice with typing, word processing, keyboarding, commerce, business studies and information technology). It was also possible to examine the penetration of CDT, design, design and craft, and design technology courses into the curriculum and the extent to which these have replaced the traditional craft, metalwork and woodwork subjects. A similar line of analysis was pursued with respect to technical drawing and graphical communication subjects and to needlework and the new textile, fashion and fabric courses.

Given recent concerns, it was also apposite to examine the occurrence of computing courses. Whilst these may take place within maths lessons, where they are timetabled separately it is

reasonable to assume that they make a distinctive contribution to the curriculum. For example, separate computing courses are arguably more likely to be taught by specialist computing staff rather than by mathematics teachers.

In order to obtain an indication of curriculum innovation outside of these areas, the Humanities grouping was selected to ascertain the frequency with which subjects other than the traditional history and geography appeared in the curriculum. This was carried out for both Year 1 and Year 5. For reasons of brevity these are referred to as 'non-traditional humanities'. Integrated humanities courses (consisting of humanities, integrated studies, world studies, world and community studies and social studies/science) have also been drawn out for analysis.

Tables 8.4 and 8.5 show the proportion of schools in each LEA providing these subjects and groupings of subjects in Year 5. The Year 1 results for Humanities are shown in Table 8.6 whilst the Year 5 results appear in Table 8.4.

It was also possible to indicate in a more sophisticated manner the priority accorded to a wide group of occupationally-related subjects in terms of resources. This group comprises those subjects embraced under the service sector-related heading along with motor vehicle studies/crafts, building, agriculture, world of work, understanding industry and commerce, commercial maths, catering, nursing, automobile engineering, personal and business finance and construction. Table 8.7 shows the percentage of total TPW and OSC TPW devoted to these subjects for each LEA.

The results of these analyses reveal important differences in the occurrence of the key subjects. *Careers education* is provided as a separate subject in nearly half the schools in Newham and Cambridgeshire, a third in Sheffield and less than a quarter in Leicestershire. There is more uniformity in the occurrence of *PSD - type courses*, around two thirds of schools provide them in three authorities, whilst in Newham under one

Table 8.4
Percentage of schools providing key subjects in Year 5, 1986/7, by LEA.

Key Subject	Cambs.	Leics.	Newham	Sheffield
Careers	46	23	47	35
PSD[1]	66	63	47	65
Information technology	5	8	0	12
Computing	66	97	47	65
Technology	56	62	7	68
Service sector-related[2]	83	69	87	76
CDT, etc.[3]	68	79	53	68
Woodwork, etc.[4]	61	51	20	53
Needlework	49	54	27	76
Textiles, etc.[5]	32	31	47	18
Technical drawing	49	31	20	38
Graphics, etc.[6]	20	49	53	6
Non-traditional humanities	61	95	93	79
Integrated humanities[7]	39	87	80	44

[1] PSD comprises Ls, Se, Core, PSE.
[2] Service sector-related subjects comprise T, Sh, St, Ot, Wp, Kb, Co, Bs, It.
[3] CDT, etc. comprises CDT, D, Dt, Dc.
[4] Woodwork, etc. comprises Wk, Mk, Cr.
[5] Textiles, etc. comprises Tx, Ft, Fb.
[6] Graphics, etc. comprises Gc, Gx, TG, GxD.
[7] Integrated humanities comprises Hu, Is, Ws, Wc, Ss, and in Leicestershire 'other humanities'.

Table 8.5
Percentage of schools providing both subjects in three transitional pairs, Year 5, 1986/7, by LEA.

	Cambs.	Leics.	Newham	Sheffield
CDT, etc. & Woodwork, etc.	29	33	7	24
Needlework & Textiles, etc.	2	0	7	6
Technical drawing & Graphics etc.	5	3	7	0
(Neither)	(27)	(18)	(20)	(56)

Note: For subject definitions see Table 8.4

Table 8.6
Percentage of schools providing: Year 1 humanities subjects apart from and/or instead of history and geography; and integrated humanities subjects only in Year 1[1] , 1986/7, by LEA.

	Cambs.	Leics.	Newham	Sheffield
Humanities subjects apart from/instead of history and geography	37	84	47	29
Integrated humanities courses[2] only	34	64	47	24

Table 8.7
Mean percentage of total TPW and OSC TPW devoted to occupationally-related subjects*, Year 5, 1986/7, by LEA.

	Cambs.	Leics.	Newham	Sheffield
% total TPW	3.3	2.8	6.0	3.9
% OSC TPW	26.4	21.3	50.6	29.1

* Occupationally-related subjects comprise T, Ot, Mv, Bd, Ag, Co, Bs, WW, Ic, Sh, Mc, Cg, Nurse., AuEn, PBF, Con, Si, St, It.

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[1] Year 2 in Sheffield since not all schools have Year 1.
[2] comprising Hu, Is, Ws, Wc, Ss, and in Leicestershire 'other humanities'.

half of schools do. Taken together, Cambridgeshire emerges as the most well-provided LEA in this area.

In the 'high technology' areas *computing* shows a much wider and deeper penetration into the curriculum than *information technology*. Almost all secondary schools in Leicestershire provide computing as a separate subject, whilst of the remaining three LEAs only Newham has less than 50% of its schools doing so. In contrast, information technology has yet to make much headway as a distinct subject anywhere.

The transitional pairs also show varied degrees of change. Most schools in all the LEAs provide one of the *CDT-type courses*, whilst far fewer schools provide *textiles courses* or *graphics courses*. However, in three of the authorities, most schools also provide one of the older crafts subjects such that in these LEAs approximately one quarter to one third of schools were providing both types of subject in 1986/7 (Table 8.5). This type of overlapping is not apparent in the two other transitional pairs, where one type of subject has unambiguously replaced the other in the vast majority of cases.

In every authority except Newham, virtually every school provides some form of CDT or craft subject - only two-thirds of Newham's schools do. Most schools also provide some form of needlework or textiles subject. Technical drawing or graphics is provided as a separate subject in most schools in three LEAs, but in under half in Sheffield. *Technology* occurs in most schools as a separate subject except in Newham where it is provided in just one institution.

Turning to the more specifically vocational subjects, most schools in all four LEAs make some provision in the field of *service sector-related subjects*, Newham's schools being particularly forward in this respect. This is borne out by the data in Table 8.7 which draws on the entire range of *occupationally-related subjects*. As can be seen, Newham schools on average devote a significantly greater proportion of their

total TPW to subjects in this area. They also dedicate over 50% of their OSC TPW to these subjects, whilst the figure common to the other LEAs is around 20-30%.

Outside of these vocational areas in *humanities*, there is important variation between the LEAs. The vast majority of schools in Leicestershire and Newham make provision beyond the traditional history and geography in Year 5, and this is reflected in their higher median number of subjects noted above. Moreover, most of these schools include some form of integrated humanities course. In Cambridgeshire and Sheffield, on the other hand, whilst most schools provide non-traditional humanities the proportion is lower than in the other two LEAs. Moreover, around half the proportion of schools compared to Leicestershire and Newham provided integrated courses (although it needs to be noted that in Sheffield 8 of the 17 schools which provide other humanities courses but not integrated humanities provide environmental studies - in Cambridgeshire this is true of only 2 schools). Not dissimilar differences emerge in Year 1 (Table 8.6). Leicestershire stands well above the other authorities in terms of the provision of non-traditional humanities. In Newham, Cambridgeshire and Sheffield, those schools which provide subjects other than history and geography almost always provide an integrated humanities course *only*. In Leicestershire, this is true of only three quarters of schools providing non-traditional subjects.

Taken-together, these indicators of 'progressiveness' and 'relevance' paint a complex picture of the case studies. None is markedly more 'progressively' or 'relevant' than any other across all indicators. As a whole, it is perhaps **Cambridgeshire** which emerges most favourably from this analysis, closely followed by **Sheffield**. It scores well on each indicator without being markedly more pro-active than the other authorities, with the exception of technical drawing/graphics on which it fares poorly and its maintenance of a more traditional approach in Humanities. Sheffield also fares well, with the caveats already noted regarding needlework and

careers. With regard to the latter, the prevalence of timetabled form and guidance periods in Sheffield may account for its low percentage, the careers function being carried out during these periods. **Leicestershire** and **Newham** provide interesting contrasts. Newham performs particularly well on the indicators of more specifically vocational subjects, whilst Leicestershire tends to do better in the more general fields, especially PSD, technology and computing. In CDT, Leicestershire has a higher percentage of its schools providing these subjects than Newham, but the ratio between those schools with CDT courses and those with woodwork and/or metalwork and/or craft is much better in Newham. Leicestershire, however, is clearly in a state of transition, as indicated by the one third of schools which provide both CDT and metal- or woodwork (Figure 8.5). Newham has probably passed through this phase earlier. Nevertheless, it is clear that Newham curricula are orientated much more than the other LEAs to specifically vocational subjects as is evidenced by the fact that only two-thirds of its schools provide some form of CDT or craft course. With respect to technical drawing/graphics, Leicestershire and Newham occupy similar positions but Newham is clearly in advance in the needlework/textiles transition. In terms of humanities provision there are similarities between the two in Year 5, but in Year 1 Leicestershire leads the field.

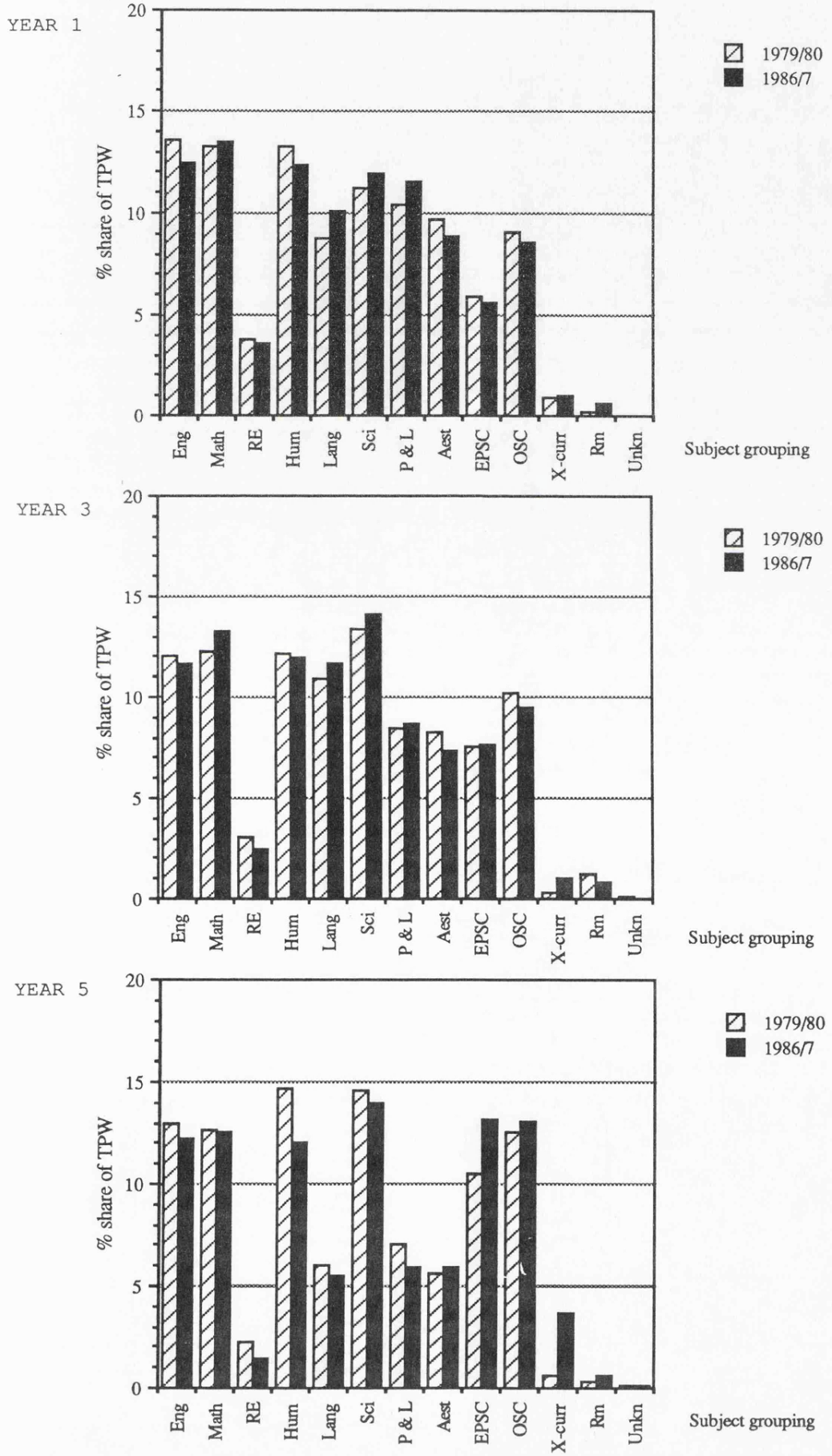
8.6 Changes in the curriculum over time

It was possible to explore changes in the curriculum over time in only two of the authorities in the sample, Sheffield and Cambridgeshire. In Sheffield it was possible to compare the 1986/7 curriculum with the curriculum in 1979/80 and in Cambridgeshire with that for 1982/3. In view of the longer time span available the discussion starts with Sheffield.

8.6.1 Sheffield

Figure 8.7 shows the percentage shares of TPW allocated to individual subject groupings in 1979/80 and 1986/7, and Tables

Figure 8.7 Changes in curriculum structure in Sheffield, 1979/80-1986/7 (Key overleaf)



Key to Figure 8.7:

Eng = English Studies

Math = Maths Studies

RE = Religious Studies

Hum = Humanities

Lang = Languages

Sci = Sciences

P & L = Physical & Leisure subjects

Aest = Aesthetic subjects

EPSC = Education for Personal and Social Competence

OSC = Occupational Skills and Crafts

X-curr = Cross-curricular subjects

Rm = Remedial/Special Needs provision

Unkn = Unknown

8.8 and 8.9 the median numbers of subjects and inter-quartile ranges over the same period.

English Studies have declined in importance in all three Years whilst *Maths Studies* have managed to increase their share of TPW in Years 1 and 3 (probably because of the advent of computing courses - see Table 8.10), and held its own, more or less, in Year 5, where it also experienced an increase in subject numbers. *Religious Studies* and *Humanities* have obviously been the losers during this period. These are the only groupings apart from English to have registered a decline in TPW across all three Years and in Year 5 their demise is especially marked. These patterns are reflected in the shifts towards the provision of fewer named subjects shown in Tables 8.8 and 8.9. Importantly, there are no groupings which show clear gains over all Years except for *Cross-curricular* subjects. Though of marginal importance to the curriculum as a whole in Years 1 and 3, these subjects represent an increasingly important area in Year 5.

In the other humanities area, *Languages*, an increase in priority has been recorded in Years 1 and 3 but a loss in Year 5; subject numbers have remained more or less the same. The other areas showing this pattern of gains in Years 1 and 3 and losses in Year 5 are *Sciences*, and *Physical and Leisure* subjects. In the case of Year 3 Sciences, it is important to note the shift towards fewer subjects noted in Table 8.8 which illustrates the trend towards restructuring in favour of general science courses. *Aesthetic* and *OSC* subjects show *losses* in Years 1 and 3 and *gains* in Year 5. This is especially noticeable in Year 3 OSC in Table 8.8 where there has clearly been a restructuring of the field towards integrated courses. Unlike the Sciences, however, this has been accompanied by a relative *loss* of TPW. In Year 5, however, the same restructuring is evident, along with a broadening of individual school experience as shown by the inter-quartile range, but this has taken place in the context of relative TPW *gains*. In Aesthetics, in

Table 8.8
Comparison of number of subjects in each subject grouping between 1979/80 and 1986/7 in Sheffield, Year 3.

	1979/80		1986/7	
	Median	Interquartile range	Median	Interquartile range
English Studies	1	1-1	1	1-1
Maths Studies	1	1-1	1	1-1.25
Religious Studies	1	1-1	1	0-1
Humanities	2	2-2	2	1.75-2
Languages	2	1-3	2	1-3
Sciences	3	1-4	2.5	1-3
Physical & Leisure	1	1-1.25	1	1-1
Aesthetic	2	2-3	2	1.75-3
EPSC	2	1.75-3	2	1-3
OSC	3	1.75-3	1	1-2
Cross-curricular	0	0-0	0	0-0
Remedial/SN	0	0-0	0	0-1
Unknown	0	0-0	0	0-0
Total	18	16-22.25	17	14-19

Table 8.9
Comparison of number of subjects in each subject grouping between 1979/80 and 1986/7 in Sheffield, Year 5.

	1979/80		1986/7	
	Median	Interquartile range	Median	Interquartile range
English Studies	1	1-1	1	1-1
Maths Studies	1	1-2	2	1-2
Religious Studies	1	1-1	1	0-1
Humanities	4	3-4	3	3-4
Languages	3	2-3.75	3	2-3
Sciences	4	4-5	4	4-5
Physical & Leisure	1	1-2	1	1-1
Aesthetic	2	2-3	3	2-3
EPSC	4	3-4	4	3-5.75
OSC	6	4-6	5	3.25-6.75
Cross-curricular	0	0-0.75	0.5	0-1
Remedial/SN	0	0-0	0	0-1
Unknown	0	0-0	0	0-0
Total	26.5	25-29.75	28	26-31.75

contrast, the TPW gain has been used to shift the median number of subjects *upwards* in Year 5.

EPSC deserves individual attention. In Year 1 it registers a slight loss of priority, in Year 3 a very slight gain but in Year 5 it shows the most significant increase of all groupings. The numbers of Year 5 subjects provided has also shown a tendency to increase, as evidenced by the inter-quartile range.

Curricular shifts are complex. The link between TPW share and number of subjects has varied over time because of the degree of independence of curricular initiatives from resources. Overall, there has been a fall in the number of subjects provided in Year 3, and a rise in Year 5, a trend more apparent from the inter-quartile ranges than the medians. An indication of the pace and extent of innovation can be obtained from the analysis of the percentages of schools providing key subjects at the two time points. These are shown in Table 8.10.

The subjects which have shown the most rapid adoption are technology, computing, PSD courses and CDT. Importantly, the traditional craft subjects have not quite been shed at the same rate as CDT courses have been adopted, leading to a degree of overlap. In the needlework/textiles area innovation has taken place at a much slower rate and in the area of technical drawing and graphics there have been losses from the former and few gains for the latter, suggesting that the CDT and design locus has absorbed this part of the curriculum. This integration accords with the picture of OSC painted above.

In information technology and Years 2/3 non-traditional humanities the small number of schools providing these subjects has remained, whilst in service sector-related subjects and Year 5 humanities the already high levels have been maintained.

In careers there has been a surprising fall in the number of schools providing the subject. It is reasonable to hypothesise

Table 8.10
Comparison of the percentage of schools providing key subjects in 1979/80 and 1986/7 in Sheffield, Year 5 (except where indicated).

Key Subject	1979/80	1986/7
Careers	79	36
PSD	21	61
Information technology	4	11
Computing	18	61
Technology	14	61
Service sector-related	79	79
CDT, etc.	11	61
Woodwork, etc.	93	57
Needlework	93	75
Textiles, etc.	0	21
Technical drawing	82	46
Graphics, etc.	0	7
Non-traditional humanities	89	86
Non-traditional humanities Year 3	27	30

Note: For definitions see Table 8.4

that careers has become a function of the form and guidance periods which are prevalent in Sheffield.

Changes in inter-school variation

Table 8.11 shows the coefficients of variation of individual subject groupings, based upon TPW shares, in 1979/80 and 1986/7, which can be used to assess if there has been a broadening or narrowing of curricular variation over this period.

In general, whether variation has increased or decreased depends on the subject grouping; there is no general trend. In Year 1, five of the 12 groupings show increased variation whilst in Years 3 and 5, six and seven groupings respectively show this trend. Only two groups show a broadening of variation over all three Years: Religious Studies and Aesthetics. In addition, English shows a broadening over Years 1 and 3. A consistent narrowing in variation over Years is exhibited in Languages, Sciences and Remedial subjects and in Years 1 and 3 in EPSC (though in Year 3 the trend is more accurately represented as 'no change'). In the other subject groupings, the trend in variation changes from Year to Year and the degree of change in the coefficient is not substantial on the whole. However, in Year 5 Physical and Leisure subjects registers a major increase in variation.

8.6.2 Cambridgeshire

Figure 8.8 shows the percentage TPW shares for the subject groupings in 1982/3 and 1986/7 and Tables 8.12 and 8.13 the numbers of subjects for the groupings in the same years. 1982/3 was the earliest year for which curriculum data was available. Unfortunately, fewer schools made a return in 1982/3 than in 1986/7 (this was not a problem in Sheffield), so in order to ensure that the same groups of schools were compared over time, schools for which data were available were nonetheless excluded

Table 8.11
Comparison of coefficients of variation of curriculum subject groupings in 1979/80 and 1986/7 in Sheffield.

	Year 1		Year 3		Year 5	
	1979	1986	1979	1986	1979	1986
English Studies	18	21	15	21	19	18
Maths Studies	18	12	13	19	14	19
Religious Studies	67	71	58	88	98	155
Humanities	29	22	21	24	26	33
Languages	42	25	36	27	56	44
Sciences	25	20	20	14	22	20
Physical & Leisure	19	23	27	25	35	71
Aesthetic	29	37	37	51	33	38
EPSC	63	58	56	55	35	39
OSC	70	67	38	59	39	40
Cross-curricular	178	186	261	206	240	136
Remedial/SN	332	246	328	208	234	168

Figure 8.8 Changes in curriculum structure in Cambridgeshire, 1982/3-1986/7 (for key see Figure 8.7)

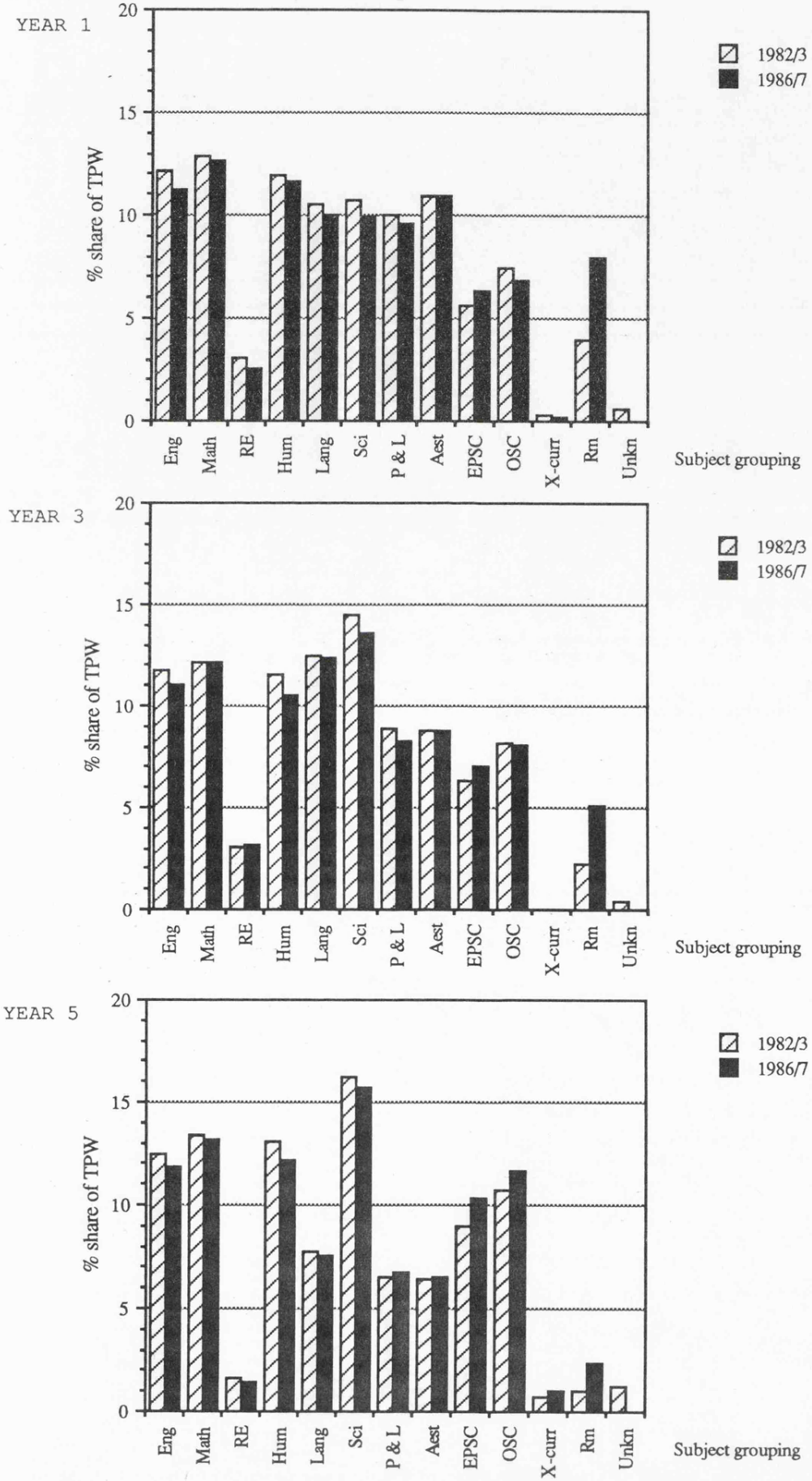


Table 8.12
Comparison of number of subjects in each subject grouping between 1982/3 and 1986/7 in Cambridgeshire, Year 3.

	1982/3		1986/7	
	Median	Interquartile range	Median	Interquartile range
English Studies	1	1-1	1	1-1
Maths Studies	1	1-1	1	1-1
Religious Studies	1	1-1	1	1-1
Humanities	2	2-2	2	2-2
Languages	2	2-3	2	2-3
Sciences	3	3-4	3	1-3
Physical & Leisure	2	1-2	1.5	1-2
Aesthetic	2	2-3	2	2-3
EPSC	2	1-3	2	1-3
OSC	2	1-3	2	1-3
Cross-curricular	0	0-0	0	0-0
Remedial/SN	1	0-1	1	0-1
Unknown	0	0-0	0	0-0
Total	20	18-21.25	20	17-21

Table 8.13
Comparison of number of subjects in each subject grouping between 1982/3 and 1986/7 in Cambridgeshire, Year 5.

	1982/3		1986/7	
	Median	Interquartile range	Median	Interquartile range
English Studies	1	1-1	1	1-1
Maths Studies	2	1-2	2	1-2
Religious Studies	1	0-1	1	0-1
Humanities	3	2-4	3	2-4
Languages	2	2-3	3	2-3
Sciences	4	3-5	4	4-5
Physical & Leisure	1	1-2	2	1-2
Aesthetic	2	2-3	2	2-3
EPSC	3	2.5-4	4	3-5.5
OSC	4	3-6	6	5-7
Cross-curricular	0	0-0	0	0-0.5
Remedial/SN	0	0-1	1	0-1
Unknown	0	0-1	0	0-0
Total	25	23-28	27	25.5-32

if the data were not collected in both years. This reduces the number of schools in the analysis to 33 but ensured that the observed shifts were genuine *changes* and not merely due to the inclusion or exclusion of certain schools.

Figure 8.8 shows that most of the curriculum shifts have been marginal. The most significant change has taken place in Remedial provision, which in all Years has shown a doubling, or more, of its share of TPW. Apart from Remedial the only grouping to register an increasing share of TPW over all Years is EPSC. In Year 5 this increase is accompanied by a rise in the average number of subjects provided. The results for Remedial tend to swamp all the other groupings with the result that most groups in most years show relative losses of TPW over time. The exceptions are, in Year 3, RS, a very surprising result given what has often been held to have been a decline in this area during the period of resource constraint; and in Year 5, OSC, with very small increases in Physical and Leisure subjects and Cross-curricular subjects. OSC, like EPSC, shows an increase in subjects numbers in Year 5 to accompany its increasing share of TPW, as does Physical and Leisure subjects.

Tables 8.12 and 8.13 show important changes not apparent from the TPW analysis. Total subject numbers show little change in Year 3, though the inter-quartile ranges show evidence of a slight contraction. In Year 5, there has been an increase in the numbers of subjects provided. In Year 3 minor contraction in subject numbers are recorded in Sciences and Physical and Leisure subjects, and no grouping records an increase. By contrast, in Year 5, no grouping shows a loss of subjects. Apart from the increase in EPSC, OSC and Physical and Leisure subjects already mentioned, minor increases also occur in Languages and Sciences.

Table 8.14 gives an indication of the pace of innovation in Cambridgeshire in key subjects. The most rapid adoption has taken place in PSD subjects and CDT. However, the rate of shedding of traditional courses has lagged considerably behind

Table 8.14
Comparison of the percentage of schools providing key subjects in 1982/3 and 1986/7 in Cambridgeshire, Year 5 (except where indicated).

Key Subject	1982/3	1986/7
Careers	58	52
PSD	15	58
Information technology	3	3
Computing	52	64
Technology	24	64
Service sector-related	81	85
CDT, etc.	12	67
Woodwork, etc.	76	67
Needlework	79	55
Textiles, etc.	0	30
Technical drawing	64	58
Graphics, etc.	3	27
Non-traditional humanities	45	61
Non-traditional humanities Year 1	39	42

Note: For definitions see Table 8.4

the rate of innovation of CDT. In the other two areas of change, there has been slower progress but less discontinuity between the rate at which the older subjects (needlework and technical drawing) have been lost and the new (textiles and graphics) adopted. Steady progress has been made in technology, but in computing only a few more schools have begun to provide the subject, although the initial baseline was high. The high percentage of schools providing service sector-related subjects has continued. Information technology has remained moribund. The number of schools providing non-traditional humanities subjects in Year 5 has increased but little change has occurred in Year 1. As in the case of Sheffield, careers registers a contraction, though this is slight.

Changes in inter-school variation

The degree of inter-school variation shows a definite tendency towards a narrowing over time (Table 8.15). In Years 1 and 3 only four subjects show an increase in variation , and in Year 3 only Maths Studies shows a change which could be called significant. In Year 5 only two subject groupings show an increase in variation and neither is substantial. In contrast, a number of groupings show important decreases in variation. Remedial provision shows a contraction in all three Years and Language in Years 3 and 5 which accords with the results in Sheffield. Aesthetics exhibits a narrowing of variation in Year 1. In Year 5 substantial trends to greater conformity are recorded for Humanities, Physical and Leisure subjects, EPSC and OSC. These findings stand in contrast to the clear tendencies to greater variation found in the same groupings in Sheffield.

8.6.3 Changes in the two LEAs compared

Putting together the results for Sheffield and Cambridgeshire highlights both the important elements of curriculum change during the first half of the 1980s which transcend the LEAs and important differences between the two authorities. To begin with, it must be stated that less change would be expected from

Table 8.15
Comparison of coefficients of variation of curriculum subject groupings in 1982/3 and 1986/7 in Cambrideshire.

	Year 1		Year 3		Year 5	
	1982	1986	1982	1986	1982	1986
English Studies	18	17	17	16	17	16
Maths Studies	13	14	13	19	17	16
Religious Studies	68	77	51	48	94	105
Humanities	23	23	25	26	28	21
Languages	26	22	38	24	43	32
Sciences	23	21	16	16	16	17
Physical & Leisure	16	18	24	22	33	26
Aesthetic	30	23	29	30	29	28
EPSC	59	56	53	54	46	36
OSC	48	47	49	44	44	34
Cross-curricular	273	275	N/A	N/A	239	232
Remedial/SN	108	54	114	67	160	84

the Cambridgeshire data for the simple reason that they cover a shorter time span. Nevertheless, it is clear that in both LEAs the largest shifts in the curriculum have occurred in Year 5; the curriculum in Years 1 to 3 has remained comparatively unchanged. Overall, there has been a contraction in the total number of subjects provided in Year 3 and an increase in Year 5. This represents a complex interweaving of curriculum developments - nationally and locally - and the deployment of resources. The reasons for these shifts are different in different areas. In Sheffield, the decrease in total number of subjects in Year 3 is due to losses mainly in OSC and the Sciences, whilst in Cambridgeshire it is due to Physical and Leisure subjects and the Sciences. In Year 5, the increase in subject numbers in Sheffield is due to gains in Maths Studies, Aesthetic subjects and Cross-curricular subjects, and in Cambridgeshire to OSC, EPSC, Remedial/Special Needs, Languages and Physical and Leisure subjects. This is the result of the meshing of local and national curriculum priorities. In Cambridgeshire the interaction between curriculum and resource change has clearly led to a decrease in the variation between individual schools - in Year 5 ten of the twelve subject groupings exhibit a narrowing of inter-school differences - whilst in Sheffield the number of groupings showing a decrease is roughly the same as those showing an increase across all Years. Such diversity may reflect difficulties in deploying a tightening pool of resources and concurs with the finding of a polarisation in individual school experience found in the survey (Chapter 5).

In detail, it is clear that the most important developments have been in EPSC and OSC. Both areas have secured increasing proportions of teaching resources over time in Year 5, and in Cambridgeshire EPSC shows an increasing share through all Years. In terms of subject numbers, EPSC shows an increase in Year 5 and the healthy state of this area is confirmed by the rapid innovation of PSD subjects. But the situation is, as always, complex, and the loss of careers as a separate subject clearly demonstrates this.

In OSC the experience of the two LEAs diverges. Sheffield exhibits a contraction in the numbers of subjects taught under OSC, although this is accompanied by increased variation between schools. In Cambridgeshire there is an increase in subject numbers. This difference is attributable to greater integration in the Sheffield curriculum. Although the rate of innovation of CDT is similar in the two LEAs, Sheffield has shed the traditional crafts more rapidly and has lost technical drawing without the widespread introduction of separate graphical subjects. It has also shown a slower rate of introduction of textiles subjects.

The area of the curriculum exhibiting the largest loss of TPW share in Year 5 is Humanities. In Sheffield this corresponds to a reduction in the median number of subjects, and in Cambridgeshire to a stable number. In Cambridgeshire there has been an increase in the proportion of schools providing Humanities subjects apart from history and geography, whilst Sheffield has maintained its high percentage. Together these trends are indicative of a trend towards integration accompanying a relative decline in priority in the curriculum.

8.7 Conclusions

The case studies examined in this chapter have allowed the key features of variation in the curriculum to be examined in terms of individual subject groupings. The chapter has shown how these variations are woven into the curriculum as a whole in different areas. It has also been possible to show the nature of change over time in two areas up to 1987. The results show the boundaries of local discretion and adaptation to change in the curriculum.

The greatest variations occur between subject groupings and Years. In particular, the change after Year 3 to systems of options and cores results in significant changes to curriculum structure, the most important being an increase in priority

accorded to EPSC and OSC and less markedly to Sciences, with a concomitant loss of TPW in Physical and Leisure subjects, Aesthetics, Languages and Religious Studies. Equally striking is the high degree of uniformity between LEAs in their overall average curriculum profiles despite their very different contexts. What variation there is between the LEAs is concentrated in Sciences, Aesthetics, EPSC and OSC, but the degree of variation differs between Years. Even in these areas, differences between the case studies are in the region of at most 2-3% of total TPW. This is the margin at LEA-level within which the secondary school curriculum has been adapted to suit local circumstances. Though narrow, it can nonetheless be important.

Whilst at the level of overall curriculum structure there is a dominance of national parameters which transcend an LEA effect, there are still important differences between the LEAs. Thus, whilst Cambridgeshire curricula tend to stress the higher status subjects, Sheffield pays more attention to the vocational and personal and social development areas, and Newham to basic needs. The overall Leicestershire structure is complicated by its dual system, but the effect of an explicit curriculum policy with respect to the arts and humanities established in the Leicestershire Plan schools in the 1960s carries through to the present. Within these trends, the nature of the curriculum as evidenced by the analysis of key subjects bears out the complexities of curricula within LEAs. No LEA has markedly more 'progressive' or 'relevant' curricula than any other. LEAs have innovated in different areas of the curriculum at different rates in a largely uncoordinated way. The analysis of changes over time shows that at the level of overall curriculum structure changes have been slow and minor on the whole and variable between LEAs and over Years, often moving in different directions in Years 1 to 3 against Years 4 and 5. But they also show the extent to which two very different LEAs have been subject to similar curriculum trends and the manner in which these have been interpreted through existing patterns in a complex interweaving of local and national priorities. The

increasing importance of EPSC and OSC is the dominant feature and transcends local influences.

The curriculum shows important adaptation at the margins to local conditions which reflects the place of the constituent subject groupings in the curriculum hierarchy. But the correspondence is far from automatic. Aside from reflecting socio-economic traditions, there is also a relationship to resources. The additional resources available in Sheffield and Newham clearly give scope to increase the priority of certain groupings without necessarily damaging others. It is also particularly interesting to note that the much better PTRs available to schools in Newham are not used to broaden the curriculum in terms of subject numbers and so must be used in other ways such as to reduce class size. This could be the result of the organisation of schools or the need to provide smaller classes for less able pupils. But also important is the mode of post-16 delivery which is through each secondary school and consortia arrangements: this is an expensive means of provision. In Cambridgeshire the high priority accorded to certain areas is more likely to be at the expense of others, whilst in Leicestershire the resource situation is complicated because of the dual system. But the availability of resources is no guarantee of 'progressiveness' or 'relevance'. The picture of innovation is patchy at the LEA level and the reasons for a given curriculum structure complex. For example, the advent of integrated humanities courses may indicate either progressiveness, the adaptation to a high proportion of low ability pupils or lack of resources (since it can be cheaper to staff one subject rather than two) - or to some or all of these. In CDT, the advent of GCSE has sounded the death knell for traditional crafts because of the affinity between CDT and the pedagogy demanded by GCSE (Penfold, 1989). Clearly, more detailed analysis is required at school level.

This chapter has shown that there is considerable curriculum variation between schools. The greatest variation is in Religious Studies and Remedial/Special Needs. But the most

important areas, in terms of the proportion of TPW they consume, are EPSC and OSC. Important variation also occurs after Year 3 in Languages, Physical and Leisure subjects and Aesthetics, when their share of TPW also falls. Both of these factors are due to the discretion available to schools in subject provision in Years 4 and 5. In EPSC and OSC, greatest between-school variation occurs in Years 1 and 3. A strong conformity exists in English Studies, Maths Studies and Sciences and less so in Humanities in all Years.

The extent of curriculum variation between schools depends upon the LEA. This clearly reflects in part differences in the socio-economic heterogeneity within the LEAs and differences in the extent to which resources vary. Given the 'patchiness' of the curriculum there is a need to explore relationships between the curriculum and factors which might affect it at school level. This is the purpose of the next chapter.

CHAPTER 9: AN ANALYSIS OF SCHOOL-LEVEL VARIATIONS IN THE CURRICULUM

9.1 Introduction

The preceding chapter has drawn out the differences and similarities in curriculum structure between the four case studies and has begun to demonstrate the complexities of the curriculum. Having looked at the curriculum between LEAs, it is the purpose of this chapter to examine the nature of variations amongst schools within the case studies. As well as describing in more detail the shape of inter-school differences, I shall explore the relationship between these differences and both the resources available to individual schools and the socio-economic characteristics of their catchments. This chapter thus provides an important link between the resources and curriculum analyses.

To provide a framework for evaluating the curricular observed I shall draw upon the concepts of 'balance', 'breadth' and 'relevance' developed by HMI (DES/HMI, 1985b). HMI and the DES also use the concepts of 'differentiation', and 'progress and 'continuity' but it is not possible to carry out a full examination of these. An exploration of 'differentiation' at this level of analysis would require information on examination courses to be related to curriculum data which is beyond the scope of this thesis. An analysis of 'progress and continuity' would require tracing through the curriculum pathways of a selected cohort of students which is also beyond the bounds of this thesis. However, it is possible to make limited comments upon 'differentiation' insofar as this can be inferred from an analysis of integrated humanities courses; unfortunately this requires the assumption that these courses are targeted at less able pupils, which is not wholly valid either generally or for individual schools. More will be said on this point at the appropriate juncture below.

As far as balance, breadth and relevance are concerned these are key issues in a discussion of curriculum variation. Balance and breadth are closely related. Balance is assessed through the examination of how TPW is shared out between subject groupings. Breadth is explored through the analysis of subject numbers, both as a whole and within the groupings. Relevance is most clearly expressed in the fields of EPSC and OSC. It can be analysed through share of TPW and through the occurrence of specific key subjects, especially through the analysis of transitional pairs, introduced in the previous chapter

Once again, the caveat must be added that balance, breadth and relevance can be achieved through an integrated approach in which umbrella subject headings in one school deliver a range of subjects provided as discrete elements in another. It is vital therefore to be aware of the danger of sliding into normative judgements when discussing the three concepts on the basis of subject labels. A further caveat needs to be added regarding pupil experience. The method of curriculum analysis used here concerns the distribution of teaching staff and does not *directly* reveal pupils' experiences of subjects in terms of number of periods per week and class size. The concern here is to examine the curriculum as the outcome of the distribution of the key resource, teaching staff. Analysed in this way, the curriculum is an expression of school priorities. Finally, it must be stressed that balance, breadth and relevance cannot be assessed by the author against absolute normative criteria, except perhaps at the extremes of under- or over-provision. Consequently, the concepts are used here in a *relative* sense.

9.2 The relationships explored

Chapter 7 examined in detail the distribution of resources between schools in the four case studies. This provides the essential context for the analysis which follows. The sections below examine the outcome of the translation of these resources into curriculum structures. Each case study is examined in turn before the results are drawn together in the conclusion. Each

case study begins with an examination of the nature of variation within the subject groupings which comprise the curriculum, the discussion of which was introduced in Chapter 8. Attention is drawn, where appropriate, to the frequency distributions underlying the 'average' curriculum structures. The analysis then explores the relationship of the key dimensions of the curriculum analysed at LEA level in the previous chapter to the background and resourcing factors used in Chapter 7, and also explores factors particular to the selected areas which might affect the curriculum. It also tests for possible relationships between the subject groupings themselves. Throughout the chapter use is made of Spearman's rank correlations and scattergrams to identify relationships. Analysis of the plots shows that relationships begin to emerge at values of +0.4 and -0.4. However, where sample sizes are small more rigorous criteria are used. These are referred to at the appropriate point. It has also been necessary to guard against the effect of zero values, which distort the coefficients due to their effect on rankings. These are similarly highlighted where appropriate.

A priori a number of relationships can be hypothesised between the factors.

The relationship of the socio-economic characteristics of school catchments to the curriculum: The local context of a school might be hypothesised to be an important influence on the curriculum. As we saw in Chapter 3, micro-scale studies have indicated the complexity of the interactions which exist between pupils and teachers in the production of what has been termed the 'negotiated curriculum'. No studies, however, have attempted to analyse the relation between context and curriculum amongst all schools within an LEA. The notion explored here is, therefore, that school curricula will be adapted to their pupils' socio-economic background. The degree of adaptation will probably vary between schools and between subject areas. There will probably be close links between a school's curriculum, its background and the curriculum hierarchy. This

chapter explores these relationships at both the level of the overall curriculum structure and in terms of key subjects. The overall structure is explored through the analysis of shares of TPW, and also the analysis of subject numbers. Because of the categorical nature of the latter data, it was not possible to explore the data through rank correlations. Instead, plots of the data are analysed for trends. Because of their voluminous nature they are given in a set of appendices.

The relationship of levels of teaching staff to the curriculum: The availability of teaching staff may be an important factor in determining the structure of school curricula. This chapter explores whether there are particular areas of the curriculum which are systematically affected by staffing, that is those areas which are marginal in resource terms to mainstream curriculum activities. It also analyses the importance of staffing to curriculum change through the analysis of the relationship of PTRs to subject innovation. In these ways it is possible to assess the extent to which PTRs constrain or facilitate balance, breadth and relevance in the curriculum.

Relationships between different parts of the curriculum: This chapter also explores the correlations between different parts of the curriculum. The percentage TPW shares of the subject groupings are correlated to reveal if any areas of the curriculum tend to be provided in conjunction with others, or traded-off against them. The curriculum represents a finite distribution of teaching staff within which to organise learning. Given that this is so, it is possible that trade-offs will occur in those areas of the curriculum where schools can exercise the greatest choice, and that 'core' areas of the curriculum will occur together.

9.3 Cambridgeshire

Nature of curriculum variation

The previous chapter presented a notional 'average' curriculum structure for Cambridgeshire. In this section, the nature of variations from this average will be examined before proceeding to explore the relationship of these variations to the resource and background factors.

The previous chapter indicated the extent of variations in each subject grouping in Years 1, 3 and 5. There is substantial variation between schools in some groupings. In Cambridgeshire, the greatest variation across all three Years after Religious Studies took place in EPSC and OSC. In Year 3, variation was also noted in Humanities and Aesthetic subjects, whilst in Year 5 the noteworthy groupings included Languages, Aesthetic and Physical and Leisure subjects. Being the areas of most substantial variation, it is these groupings which shall receive most attention in this section.

What is the nature of the underlying frequency distributions in these areas of variety? Appendix 4 shows these distributions according to share of TPW over Years 1, 3 and 5. EPSC exhibits an outlying group of schools which throughout the Years, but most noticeably in Year 5, dedicate a much larger proportion of their TPW to these subjects than other schools. The size of this group changes over the Years. OSC also shows the presence of an upper group in Years 1 and 3, but this almost disappears by Year 5 when there are just two schools comprising this set, though they allocate approximately twice the mean proportion of TPW. Aesthetic subjects also show this tendency but only in Year 3; in the other Years the distribution tends towards normality. The distribution for Humanities are not noteworthy, apart from that for Year 1 which shows the much weaker consensus on the appropriate share of TPW allocated to this subject than for any other. The distributions for Physical and Leisure are even less noteworthy. Languages, however, exhibit a shift in

distribution over Years. In Year 1 there is a clear positive skew to the distribution, there existing a strong consensus as to the appropriate minimum level of provision. In Year 3 this breaks down somewhat, with a small group of low-providing schools, and in Year 5 the distribution becomes more normal. For any subject grouping, therefore, an observed variation can be due to very different distributions, and high variation would seem to occur in subject groupings with distributions which are not normal and where consensus as to the appropriate level of TPW is weak.

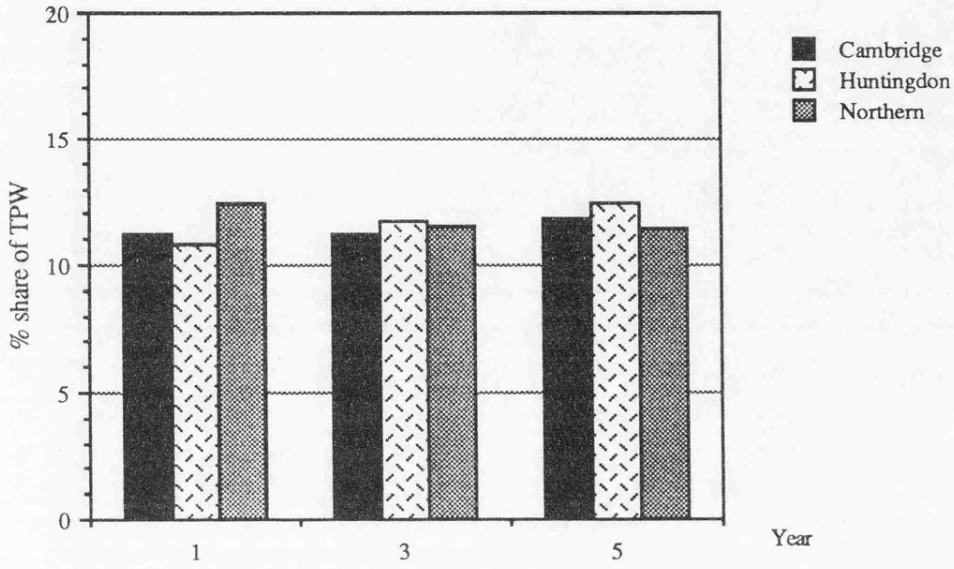
Variation between Areas

A source of variation in Cambridgeshire is the division of the county into Areas for education administration. The Area offices exercise a very limited degree of discretion over the allocation of extra staff according to need and interviews in the authority revealed that these took place on an *ad hoc* basis and would be unlikely to affect the curriculum in a systematic way. More importantly perhaps for the curriculum is the fact that the Areas correspond to the pre-1974 local authority boundaries and may therefore exhibit differences as a result of the vestigial influence of different curricular traditions in those counties. *A priori* it is not possible to identify what these differences may be to the extent that this has been possible in Leicestershire where explicit policies were pursued in the county schools. A further factor which might influence the curriculum is the manifest socio-economic differences between the Areas described in Chapter 7.

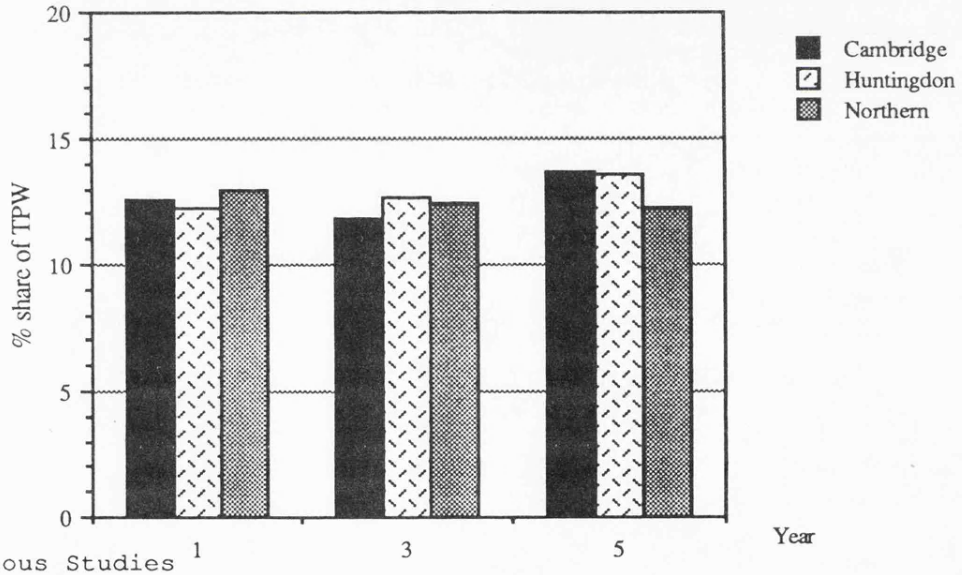
Figure 9.1 shows the percentage share of TPW for each subject grouping for Years 1-5 by Area. It can be seen that it is rare for an Area to maintain a lead or lag in a subject grouping over the Years. The exceptions to this are: the higher priority which Huntingdon accords to Languages; the higher priority which Northern accords to Aesthetic subjects; the higher priority given to Physical and Leisure subjects in Cambridge. On the

Figure 9.1 Comparison of curriculum structures in the Areas of Cambridgeshire, 1986/7

English Studies



Maths Studies



Religious Studies

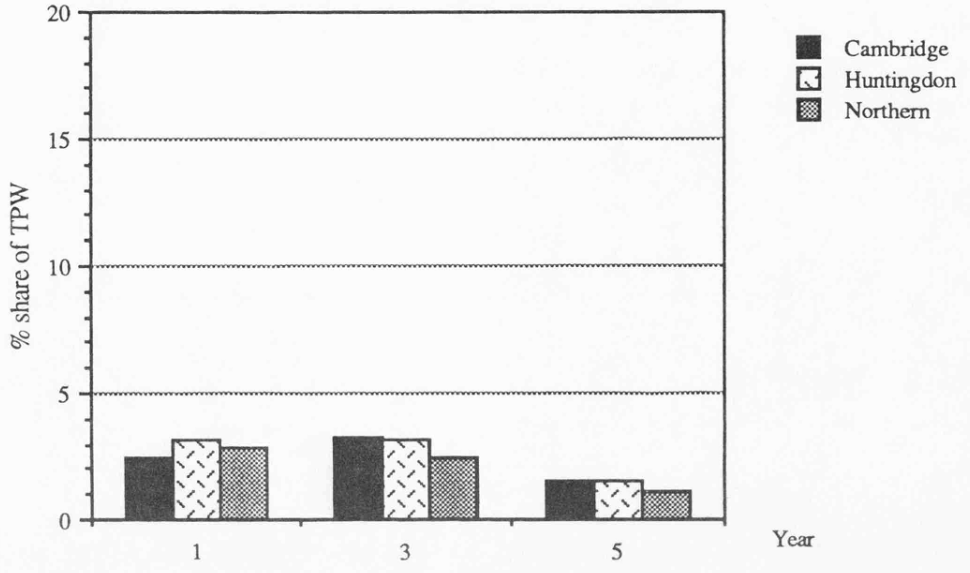
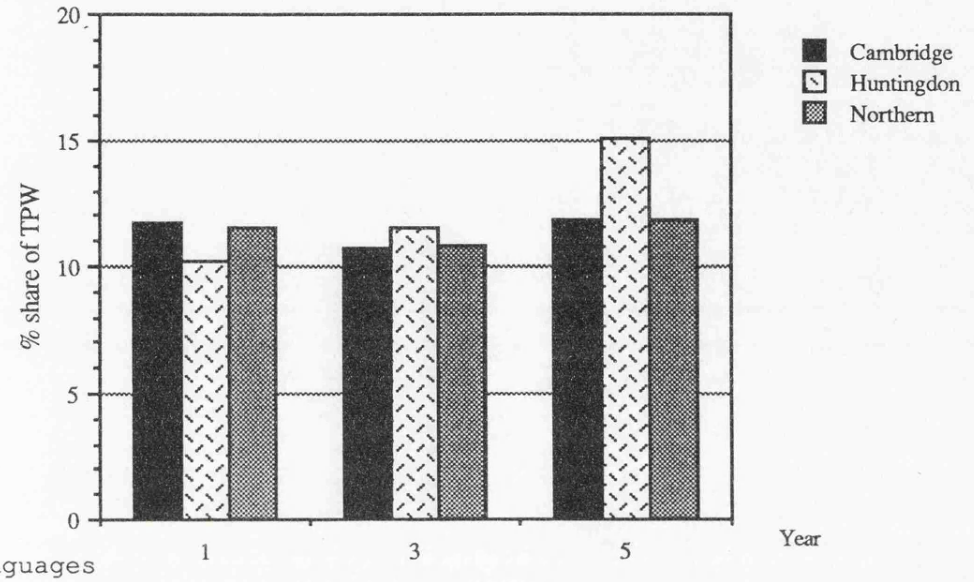
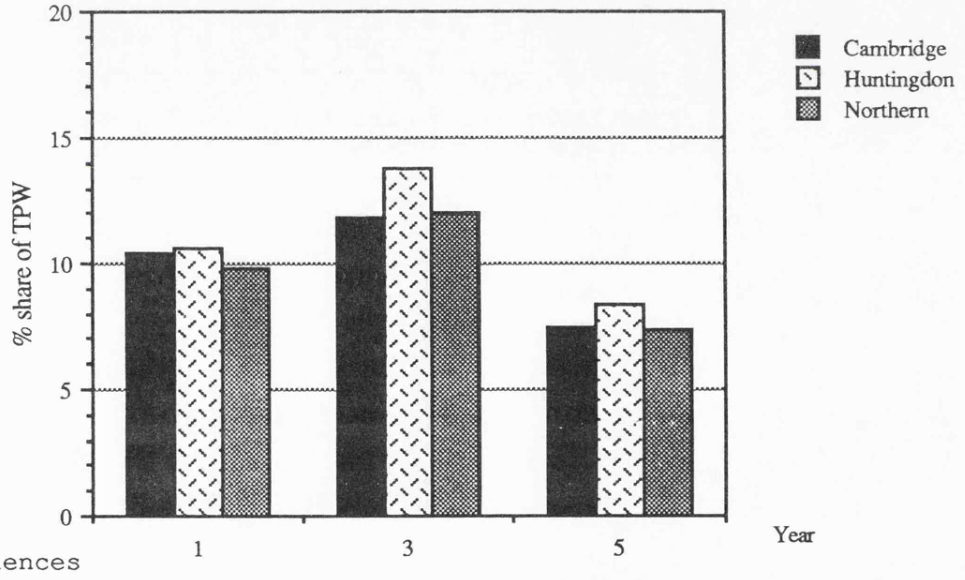


Figure 9.1 contd.

Humanities



Languages



Sciences

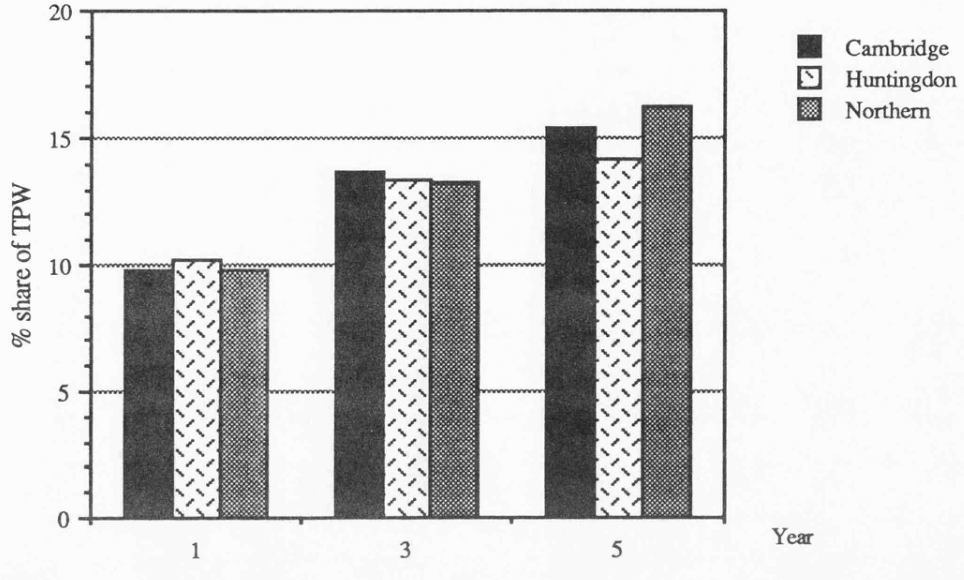
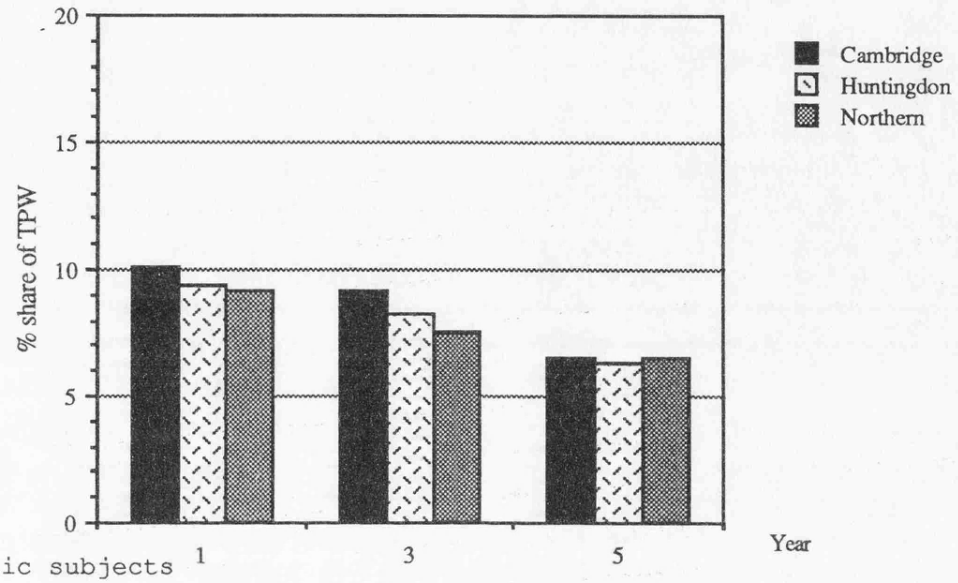
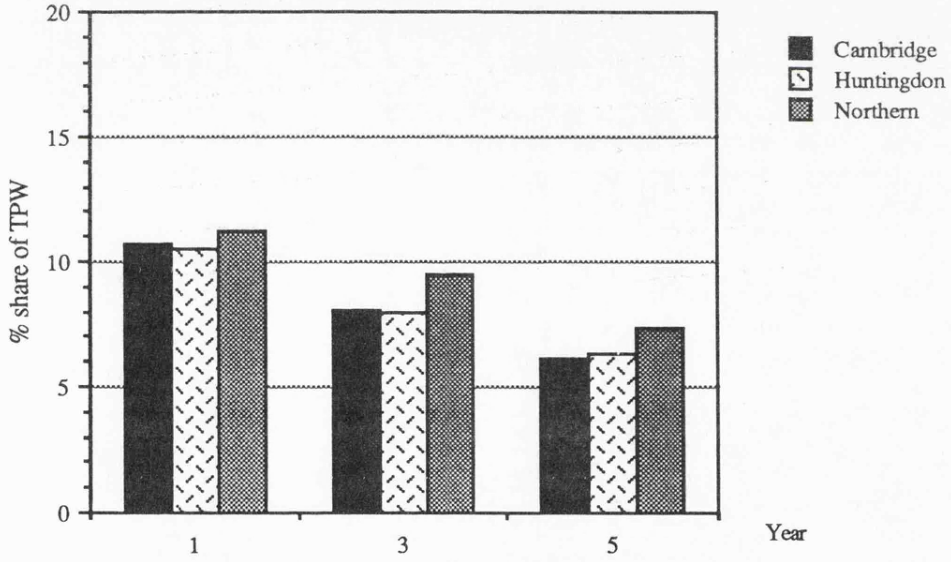


Figure 9.1 contd.

Physical & Leisure subjects



Aesthetic subjects



Education for Personal and Social Competence

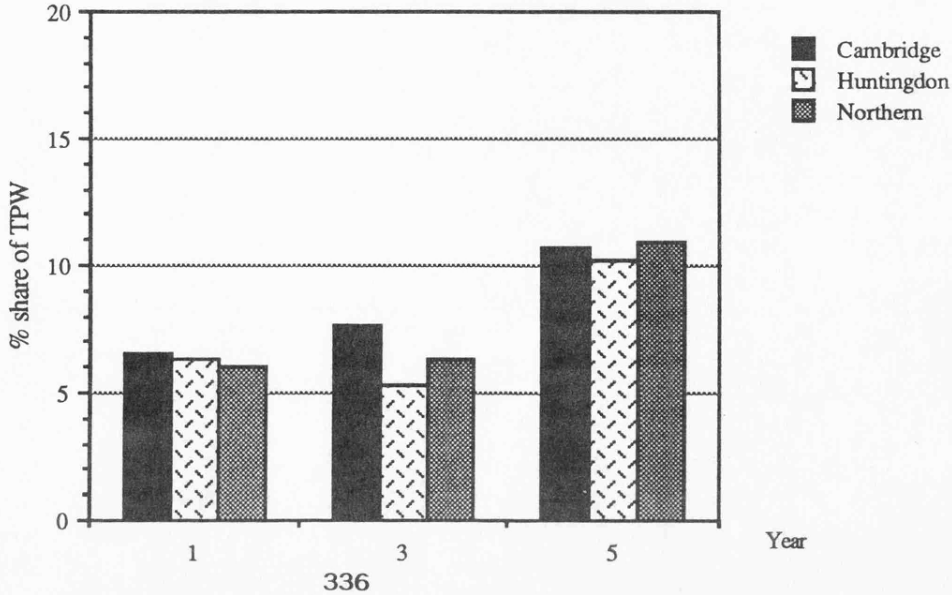
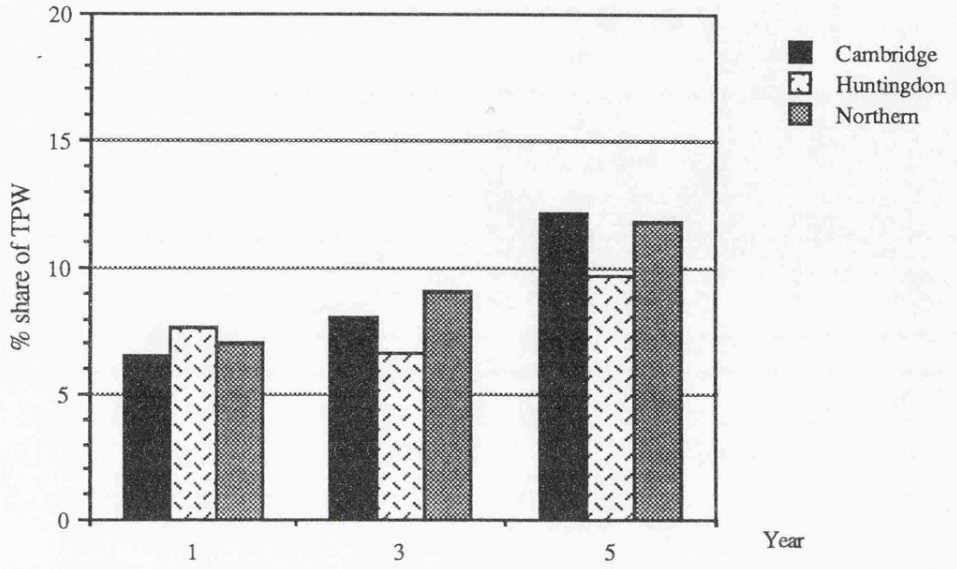
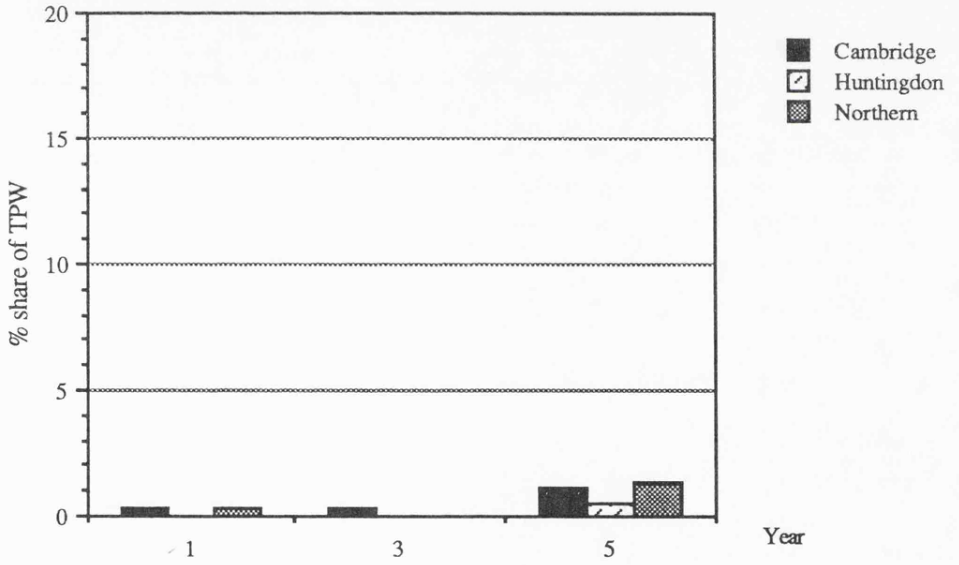


Figure 9.1 contd.

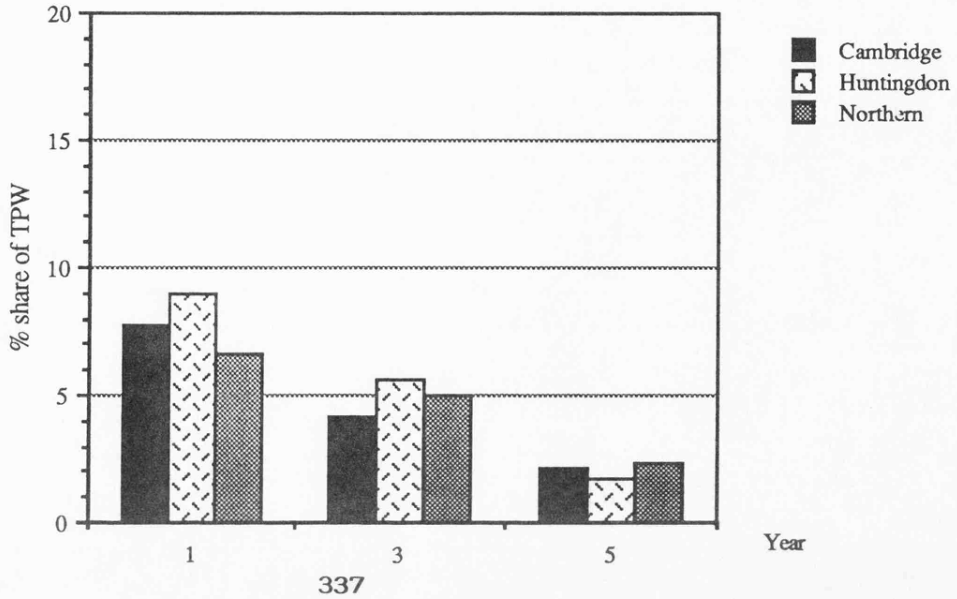
Occupational Skills and Crafts



Cross-curricular subjects



Remedial & Special Needs



whole the Areas show few consistent relationships to the curriculum, in contrast to the sub-divisions of Leicestershire.

Relationship of the curriculum to the socio-economic characteristics of school catchments

Spearman's rank correlation coefficients were calculated for the percentage shares of TPW of each subject area in Years 1, 3 and 5 against the FSM variable. No significant correlations were found (Table 9.1). Failure to find systematic relationships may be a function of the level of aggregation of the data. To circumvent this problem, the key subjects identified in the previous chapter were used. Table 9.2 shows the average FSM for schools with and without these subjects. Both the means and the medians are presented as cross-checks against one another. In every case, the difference in means is marginal, but the medians provide a useful aid to understanding the structure of the data and in a number of cases bring out important differences. In the case of careers and PSD courses it can be seen that these subjects tend to occur in more disadvantaged schools, as does Year 1 humanities subjects, which as we have seen, tend to be integrated. Year 5 humanities subjects tend to be additional to history and geography (i.e. non-integrated subjects), so in this Year it is the advantaged schools which tend to have these subjects. In terms of the transitional pairs, it is the disadvantaged schools which tend to be the most innovative, arguably because it is here where need for a non-traditional, less academic curriculum is greatest. In computing this is certainly the case; in technology the issue is less clear cut. In CDT and CDT-related subjects, disadvantaged schools have been most advanced in replacing wood- and metal-work and they have been likewise in the forefront of superseding technical drawing with graphical subjects, though such innovation is not true of the needlework/textiles area. The service sector-related group is more difficult to analyse because it includes a large number of subjects and the results are inconclusive. However, an analysis of the relationship between the proportion of total TPW accounted for by vocationally-orientated subjects and FSM

Table 9.1
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to the free school meals indicator, Cambridgeshire, 1986/7, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	0.293	0.255	-0.091
Maths Studies	0.073	0.099	-0.235
Religious Studies	-0.069	-0.207	-0.132
Humanities	0.105	0.028	-0.135
Languages	-0.348	-0.104	-0.195
Sciences	0.022	-0.245	-0.120
Physical & Leisure	-0.284	-0.357	-0.045
Aesthetic	-0.224	-0.003	0.324
EPSC	-0.028	-0.044	0.167
OSC	0.209	0.066	0.324
Cross-curricular	-0.003	-0.120	-0.066
Remedial/Special Needs	-0.125	0.213	0.231

Table 9.2
Average score on FSM variable for schools with and without key subjects in Year 5, Cambridgeshire, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	12.1	15.0	8.5	11.9
PSD	13.0	13.6	8.6	10.5
Information technology	N/A	N/A	N/A	N/A
Computing	11.2	14.6	8.3	13.7
Technology	13.8	13.1	9.0	11.5
Service sector-related	13.1	13.5	11.5	9.3
CDT, etc.	10.4	14.8	8.3	11.7
Woodwork, etc.	16.6	11.4	17.0	8.6
Needlework	14.0	12.8	9.3	10.4
Textiles, etc.	14.4	11.3	11.0	8.3
Technical drawing	14.7	12.3	13.8	8.7
Graphics, etc.	13.4	13.6	9.3	11.3
Non-traditional humanities	11.6	16.2	9.1	14.1
Non-traditional humanities, Year 1	13.3	13.7	9.3	13.7

Note: For definitions see Table 8.4

produced a coefficient of 0.028 and that between the proportion of OSC TPW accounted for by these subjects and FSM of -0.050.

There is little relationship between total number of subjects and FSM (Year 3 correlation coefficient:-0.285; Year 5:-0.064). In terms of individual groupings, the results are often inconclusive where there are not large differences in the numbers of subjects provided by schools (Appendix 5). Thus, Year 3 reveals no relationships to FSM with the exception of Languages where it is more advantaged schools which provide more subjects. In Year 5 this finding is reinforced. Amongst other groupings, relationships are unclear. In EPSC there is a slight tendency for more subjects in more disadvantaged schools. In Physical and Leisure subjects there may also be a tendency for more subjects in disadvantaged schools but the fact that most schools provide only one or two prevents firm conclusions being drawn. In Humanities, advantaged schools tend to make more subjects available.

Relationship of the curriculum to teaching resources

TPW shares were related to PTRs using rank correlations (Table 9.3). Across all Years and all groupings only one significant coefficient emerged, that for Sciences in Year 3 which produced a coefficient of 0.46. This unexpected finding means that in general increasing shares of TPW in Sciences are brought about despite *less* teaching staff.

Although PTRs seem to have no systematic effect on curriculum shares, they may affect individual subjects. Using the key subjects we can pick out those most dependent on levels of teaching staff. Table 9.4 shows the mean and median PTRs of those schools with and without the key subjects. These results need to be treated cautiously given the minor differences in the ratios. However, it can be seen that those subjects which seem to require additional resources to be taught are PSD, CDT courses and Year 1 humanities. The need for extra resources for CDT may suggest that this innovation might, in certain

Table 9.3
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to PTRs, Cambridgeshire, 1986/7, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	-0.049	0.015	0.115
Maths Studies	-0.097	0.176	0.268
Religious Studies	0.207	0.239	0.175
Humanities	-0.040	0.176	0.226
Languages	0.151	0.089	0.177
Sciences	0.190	0.460	0.298
Physical & Leisure	0.114	-0.019	-0.115
Aesthetic	0.018	-0.013	-0.219
EPSC	-0.049	-0.134	-0.172
OSC	-0.085	-0.139	-0.239
Cross-curricular	-0.019	0.241	-0.032
Remedial/Special Needs	0.019	-0.233	-0.055

Table 9.4
Average score on PTR variable for schools with and without key subjects in Year 5, Cambridgeshire, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	16.2	16.2	16.3	16.2
PSD	16.4	16.1	16.5	16.2
Information technology	N/A	N/A	N/A	N/A
Computing	15.7	16.4	16.2	16.3
Technology	16.4	16.0	16.2	16.2
Service sector-related	15.7	16.3	16.1	16.3
CDT, etc.	16.5	16.0	16.4	16.2
Woodwork, etc.	16.0	16.3	16.2	16.2
Needlework	15.9	16.5	16.1	16.3
Textiles, etc.	16.0	16.5	16.2	16.4
Technical drawing	16.1	16.3	16.2	16.2
Graphics, etc.	16.2	16.0	16.2	16.2
Non-traditional humanities	16.3	16.0	16.2	16.1
Non-traditional humanities, Year 1	16.5	15.8	16.3	16.2

Note: For definitions see Table 8.4

circumstances, be hindered in an environment of resource restraint; certainly it stands in contrast to traditional craft subjects which bear little relationship to resources. For every other subject, the results are ambiguous with differences between the direction of the relationships evidenced by the means and medians.

In the case of overall subject numbers the relationship to PTRs is weak, coefficients of 0.308 and 0.029 for Years 3 and 5 respectively being recorded. As far as the number of subjects in each grouping is concerned, results for Year 3 show that with the exception of Languages and Sciences, there is no relationship to PTR and in these instances increasing numbers of subjects are borne in spite of increasing PTRs (Appendix 6). There are no relationships in Year 5. The finding for Science fits in with the relationship between Science TPW and PTR. The result for Languages means that, taken with the negative relationship between the number of Year 3 and Year 5 Languages and FSM, there is a priority being accorded amongst advantaged schools to this area of the curriculum which overrides the potential negative influence of constrained resources.

Relationships between different parts of the curriculum

If priority is being given to particular subjects areas in schools, are other subject areas being sacrificed at their expense? Correlating subject groupings' TPW shares against one another shows that across all Years there is a strong relationship of English Studies to Maths Studies suggesting that where schools concentrate on basic education they do so in both areas (Table 9.5). Evidence of a systematic trade-off between Languages and OSC through all Years also emerged suggesting that if schools are providing Languages in the face of poor PTRs this is at the expense of the OSC grouping - clear evidence of the continuation of an academic versus vocational dichotomy in the curriculum. There was also evidence that, in Year 5, EPSC subjects were provided at a cost to Maths Studies and English

Table 9.5 Intra-curricular correlation matrices for Years 1, 3 and 5, Cambridgeshire, 1986/7

YEAR 1

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.436							
RE	0.121	0.339						
HUM	0.026	0.132	-0.115					
LANG	-0.161	-0.030	0.328	-0.204				
SCI	0.266	0.098	-0.149	-0.078	0.069			
P&L	-0.104	-0.157	-0.219	0.042	0.163	0.063		
AEST	-0.321	-0.010	0.059	0.114	0.002	-0.293	-0.117	
EPSC	-0.048	-0.270	-0.054	-0.109	0.089	0.239	-0.309	-0.126
OSC	0.165	0.037	0.100	-0.344	-0.449	-0.260	-0.065	-0.042
X-CURR	-0.397	-0.239	-0.187	-0.057	-0.057	-0.294	0.342	0.290
RM	-0.517	-0.549	-0.522	-0.019	-0.150	-0.217	0.185	-0.025

	EPSC	OSC	X-CURR
OSC	-0.275		
X-CURR	-0.242	0.149	
RM	-0.159	-0.200	0.172

YEAR 3

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.471							
RE	0.072	-0.025						
HUM	0.319	0.168	-0.177					
LANG	0.032	-0.004	0.225	-0.223				
SCI	-0.306	-0.253	0.276	0.025	-0.068			
P&L	-0.134	-0.129	0.124	0.086	-0.099	-0.100		
AEST	-0.085	-0.051	-0.170	0.126	0.059	-0.071	-0.038	
EPSC	0.005	-0.267	-0.120	-0.317	-0.005	-0.122	-0.118	-0.251
OSC	-0.092	0.042	-0.060	-0.294	-0.438	-0.158	0.068	-0.009
X-CURR	-0.200	-0.227	-0.040	0.094	-0.200	0.254	0.080	-0.040
RM	-0.398	-0.422	-0.284	-0.190	-0.017	-0.125	-0.029	-0.105

	EPSC	OSC	X-CURR
OSC	-0.209		
X-CURR	0.080	0.013	
RM	0.030	-0.143	-0.247

YEAR 5

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.686							
RE	-0.091	-0.075						
HUM	0.235	0.125	-0.278					
LANG	-0.365	-0.216	0.148	-0.171				
SCI	-0.065	-0.104	-0.087	-0.062	0.146			
P&L	-0.002	-0.110	-0.290	-0.052	0.029	0.174		
AEST	-0.054	-0.311	-0.274	0.297	-0.343	-0.027	-0.128	
EPSC	-0.496	-0.432	0.078	-0.127	0.086	-0.286	-0.189	0.163
OSC	-0.021	-0.048	-0.138	-0.270	-0.396	-0.281	0.156	0.044
X-CURR	-0.072	0.025	-0.023	-0.317	-0.004	-0.151	-0.145	-0.169
RM	-0.176	-0.141	0.214	-0.067	0.052	-0.101	-0.259	0.248

	EPSC	OSC	X-CURR
OSC	-0.078		
X-CURR	-0.200	0.009	
RM	0.181	-0.142	-0.144

Studies, that is, one group of basic education courses is replaced by those preparing for adult life.

9.4 Leicestershire

Nature of curriculum variation

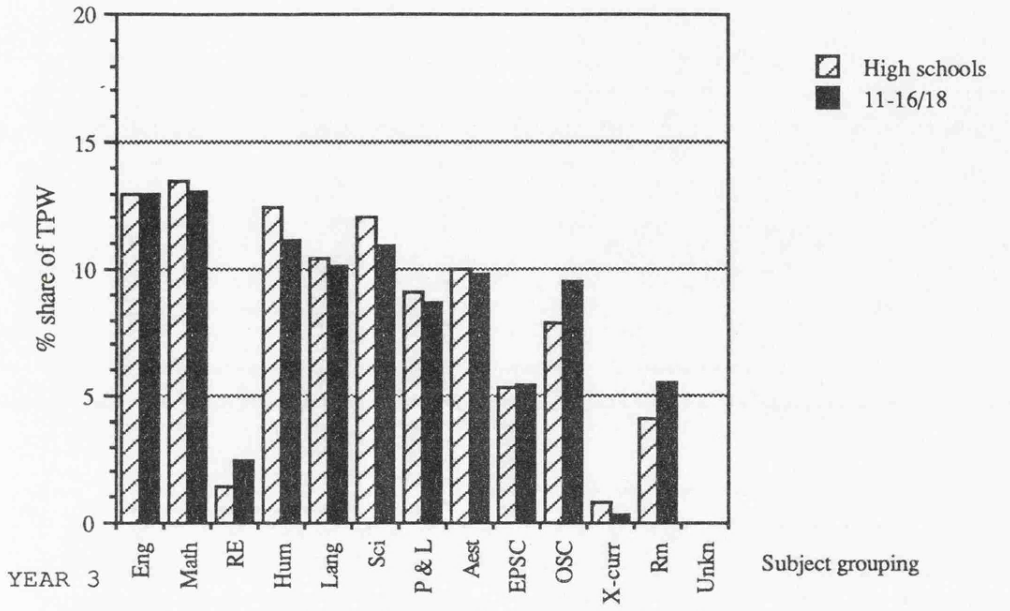
Although the previous chapter gave an average curriculum structure for Leicestershire, this conceals a dual system. The two systems which comprise secondary education in the county have different educational traditions which are likely to have repercussions for the curriculum (see Chapter 4), and also have important consequences for resources which have already been discussed (Chapter 7). The following sections begin with a detailed examination of curricular differences *between* the two systems before moving on to examine how differences *within* the two systems are related to resources and school background.

Figure 9.2 compares the curriculum between the two systems in terms of TPW shares and Table 9.6 the median subject numbers for Years 3 to 5. It can be seen from these figures and tables that the Leicestershire Plan schools devote more TPW than the 11-16/18 schools to the areas of Humanities, Physical and Leisure subjects and Aethestic subjects across all Years. In Humanities this difference is most pronounced in Years 1 and 3. In Physical and Leisure and Aesthetic subjects the greatest difference is in Year 5 where it is accompanied by differences in the numbers of subjects in both categories. The Leicestershire Plan schools also devote more TPW to Languages over all Years but the difference is slight, and perhaps more important is the difference in the number of subjects devoted to Languages in the Plan schools in Year 5.

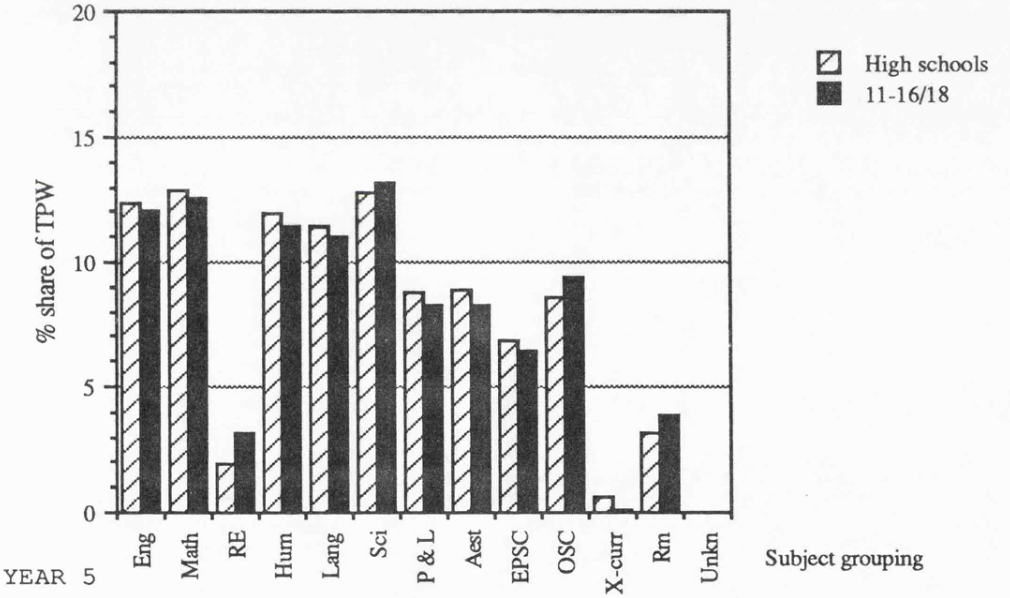
The 11-16/18 schools devote more resources than the Plan schools to OSC, Religious Studies and Remedial/Special Needs provision over all Years. The greater provision in the latter two categories is less important than the variation in OSC because these areas consume less TPW than the other area. It is likely

Figure 9.2 Comparison of curriculum structures between Leicestershire Plan and 11-16/18 schools, Leicestershire, 1986/7 (key Fig.8.7)

YEAR 1



YEAR 3



YEAR 5

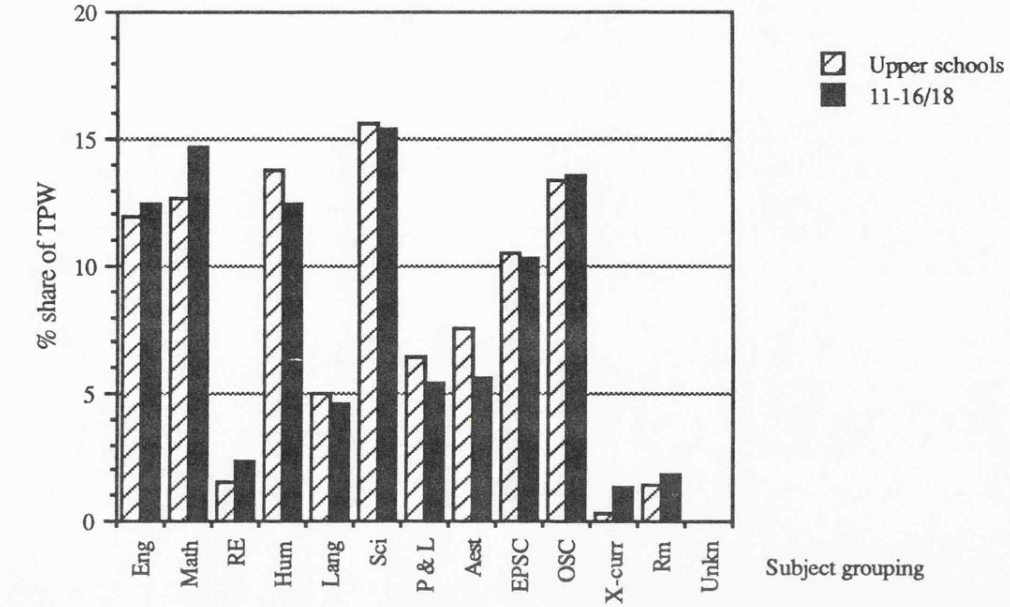


Table 9.6
Comparison of median numbers of subjects per subject grouping between Leicestershire Plan and 11-16/18 schools, Year 3 and 5.

Subject grouping	YEAR 3		YEAR 5	
	Plan	11-16/18	Plan	11-16/18
English Studies	1	1	1	1
Maths Studies	1	1	2	2
Religious Studies	1	1	1	1
Humanities	2	2	4	4
Languages	2	2	2.5	2
Sciences	3	3	5	5
Physical & Leisure	1	1	2	1
Aesthetic	3	3	4	3
EPSC	2	3	4	4
OSC	2	3	5	6
Cross-curricular	0	0	0	0
Remedial/SN	1	1	1	0

that the greater provision in Religious Studies is due to the different mode of provision, with Plan schools providing this in Humanities courses, whilst the difference in Remedial/Special Needs is due to greater need in the schools of Leicester. The difference in OSC in terms of TPW is greatest in Years 1 and 3 but throughout Years 3 to 5 the greater provision is accompanied by a higher number of subjects.

In the other groupings the differences are not consistent over the Years. For example, Maths Studies is accorded slightly greater priority in the Plan schools in Years 1 and 3, but there is significantly greater provision in the 11-16/18 schools in Year 5.

These results accord well with the areas of greatest variation revealed in the preceding chapter In particular, they account in part for the large variation relative to other LEAs found in Physical and Leisure and Aesthetic subjects. These two groupings show larger coefficients of variation in Year 5 than any other grouping. This is unique as far as the case studies are concerned. It owes much to the different traditions in the two areas discussed above. Indeed, all the differences between the two systems of schools owe something either to these different traditions or to adaptation to local circumstances, neither of these factors being mutually exclusive.

Table 9.7 confirmes the similarity between the two systems in those areas of the curriculum not substantially affected by these traditions. Amongst the key subjects, the greatest differences occurs in technology, where a significantly higher proportion of upper schools provide this subject. The other subjects show only marginal variation and neither set of schools could be said to be more progressive on all fronts. That this is so, in view of the different backgrounds of the schools in the sets, may suggest a lack of adaptation to local circumstances and the unifying effects of modern curriculum innovations. On the other hand there *is* variation in these

Table 9.7
Variation in occurrence of key subjects between upper schools and 11-16/18 schools, Leicestershire, 1986/7

	% of schools providing subject	
Key subject	UPPER SCHOOLS	11-16/18 SCHOOLS
Careers	14	28
PSD	67	61
Information technology	7	8
Computing	93	100
Technology	86	48
Service sector-related	64	72
CDT, etc.	86	76
Woodwork, etc.	43	56
Needlework	57	52
Textiles, etc.	29	32
Technical drawing	29	36
Graphics, etc.	57	48
Non-traditional humanities	100	92
Non-traditional humanities, Year 1 (high schools)	83	76

Note: For definitions see Table 8.4

subject areas, but it occurs *within*, and not *between*, the two systems. It is this variation which we now address.

Relationship of the curriculum to the socio-economic characteristics of school catchments

We saw in the preceding chapter the minor role which differences in school background as expressed through the FSM variable played in the Leicestershire Plan schools and the lack of any effect on resources. This finding is reinforced in the rank correlations of FSM with the percentage TPW share of each subject grouping (Tables 9.8 and 9.9). Because of the small sample size (14) amongst the upper schools a stricter criterion has to be used for the selection of important relationships for these schools than is used throughout most of this thesis. A threshold of 0.6 is used, along with cross-checks against the plots of the relationships. There are no important coefficients in Years 1 and 3 and in Year 5 the very restricted range of FSM values are not liable to lead to observable differences in curriculum structure. Despite great differences in background, the coefficients for the 11-16/18 schools are no better. In Year 1, Religious Studies shows that it tends not to be provided in more disadvantaged schools, there are no significant correlations in Year 3, and in Year 5 the Religious Studies correlation re-emerges, accompanied by a strong negative relationship between Languages and FSM.

The analysis of key subjects in Year 5 can only shed light on these relationships for the 11-16/18 schools, because of the lack of significant difference in background amongst the upper schools. Table 9.10 does, however, begin to reveal trends hidden by the aggregation of the subject groupings. The table shows the tendency for more disadvantaged schools to provide PSD, technology and service sector-related courses. However, correlation of the latter with FSM in terms of their share of total and OSC TPW produces rank coefficients of 0.018 and 0.029 respectively, indicating a lack of relationship beyond the point at which the subject is provided. In the CDT/craft transition,

Table 9.8
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to the free school meals indicator, Leicestershire, 1986/7, high schools and upper schools, Years 1, 3 and 5.

	High schools		Upper schools
Subject grouping	Year 1	Year 3	Year 5
English Studies	-0.083	0.203	-0.231
Maths Studies	-0.026	-0.069	0.086
Religious Studies	-0.407	-0.184	-0.675
Humanities	0.001	-0.108	0.407
Languages	0.005	0.040	-0.692
Sciences	-0.285	-0.124	-0.200
Physical & Leisure	0.019	0.039	-0.688
Aesthetic	0.174	0.162	0.398
EPSC	0.129	0.021	0.591
OSC	0.100	-0.061	-0.121
Cross-curricular	0.274	0.230	0.425
Remedial/Special Needs	-0.225	-0.095	0.166

Table 9.9
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to the free school meals indicator, Leicestershire, 1986/7, 11-16/18 schools, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	0.363	-0.050	-0.087
Maths Studies	0.005	-0.252	0.114
Religious Studies	-0.489	-0.375	-0.502
Humanities	0.100	0.125	0.287
Languages	-0.219	-0.110	-0.706
Sciences	-0.183	-0.251	-0.110
Physical & Leisure	-0.047	-0.206	-0.056
Aesthetic	0.007	0.060	0.073
EPSC	0.333	0.371	0.280
OSC	-0.068	0.070	0.085
Cross-curricular	-0.213	0.255	0.177
Remedial/Special Needs	-0.094	0.210	-0.074

Table 9.10
Average score on FSM variable for 11-16/18 schools with and without key subjects in Year 5, Leicestershire, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	19	18	15	16
PSD	19	14	15	15
Information technology	17	18	17	16
Computing	N/A	N/A	N/A	N/A
Technology	21	15	18	15
Service sector-related	20	12	17	13
CDT, etc.	19	17	16	16
Woodwork, etc.	18	18	15	16
Needlework	22	14	20	13
Textiles, etc.	14	20	13	17
Technical drawing	13	21	13	18
Graphics, etc.	22	14	21	14
Non-traditional humanities	19	9	16	9
Non-traditional humanities, Year 1	18	15	16	13

Note: For definitions see Table 8.4

however, background seems to have been irrelevant, whilst in the needlework/textiles transition, it is the more advantaged schools which appear more progressive. The figures for careers, information technology and humanities are inconclusive because of the small numbers of schools providing (or not providing) the subject.

The analysis of subject numbers allows us to comment on the Leicestershire Plan schools in more detail. The correlation of FSM with the total number of subjects in Year 3 produces a coefficient of only -0.116. Of all the groupings (Appendix 7), only Aesthetics shows anything approaching a trend, in this case towards increasing numbers of subjects with rising FSM. The same analysis for the 11-16/18 schools gives an equally inconclusive correlation for total subject numbers (-0.227), but some interesting results emerge for the individual groupings (Appendix 8), reflecting the wider range on the FSM variable. In Humanities, Sciences and Aesthetics the trend is strongly towards more subjects in more advantaged schools; in Languages, EPSC and OSC there seems to be no relationship.

In Year 5, which, once again, cannot be analysed for the upper schools, the same weak correlation with total number of subjects emerges (0.122) in 11-16/18 schools. The individual groupings show important changes on Year 3 (Appendix 8). The relationship between Humanities and FSM disappears. In Sciences, background is only important where very large numbers of subjects, six or seven, are provided, here in the more disadvantaged schools. In Aesthetics an overall trend is hard to pick out. In Languages, more subjects are now being provided in more advantaged schools whilst in Physical and Leisure subjects, EPSC and OSC there is still no relationship.

Relationship of the curriculum to teaching resources

Does the curriculum show firmer relationships with staffing levels than with school background? Tables 9.11 and 9.12 show the result of correlating PTRs with subject groupings' shares of

Table 9.11
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to PTRs, Leicestershire, 1986/7, high and upper schools, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	0.030	0.126	-0.147
Maths Studies	0.092	-0.082	0.246
Religious Studies	0.318	0.152	0.279
Humanities	0.240	0.230	0.396
Languages	0.184	0.070	0.541
Sciences	-0.239	0.130	0.796
Physical & Leisure	-0.099	0.234	0.431
Aesthetic	0.158	0.021	-0.299
EPSC	-0.190	-0.277	-0.152
OSC	-0.114	-0.108	-0.396
Cross-curricular	0.054	-0.166	-0.236
Remedial/Special Needs	-0.038	-0.136	-0.157

Table 9.12
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to PTRs, Leicestershire, 1986/7, 11-16/18 schools, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	-0.073	0.298	0.123
Maths Studies	-0.013	0.003	0.109
Religious Studies	0.371	0.131	0.415
Humanities	0.170	0.224	-0.402
Languages	-0.099	-0.196	0.518
Sciences	0.254	0.387	0.301
Physical & Leisure	0.296	0.359	0.390
Aesthetic	-0.030	-0.140	-0.074
EPSC	-0.007	-0.089	-0.074
OSC	-0.262	-0.267	-0.340
Cross-curricular	0.033	0.000	0.033
Remedial/Special Needs	-0.041	-0.275	0.083

TPW. Amongst the Leicestershire Plan schools, a significant correlation emerges only in Year 5, when Sciences are accorded greater priority in spite of rising PTRs. This follows findings in the other case studies. The 11-16/18 schools also show a lack of relationships in Years 1 and 3 and the positive correlation in Languages in Year 5.

Table 9.13 indicates the dependence of the key subjects on PTRs. In the upper schools, the provision of PSD and service sector-related courses seems to depend on staffing levels, as does the innovation of CDT and graphics. The innovation of textiles does not show a similar relationship to staffing. The other subjects do not show sufficient numbers of schools with or without the subjects for the results to be meaningful. Correlation of the percentage TPW devoted to service sector-related subjects proved inconclusive: the rank correlation coefficients for the percentage of total TPW against PTR was -0.315; and for the percentage of OSC TPW, -0.149. In the 11-16/18 schools, resources seem even more important for PSD, service sector-related courses and graphics, and are equally important for CDT (Table 9.14). Contrary to the upper schools, resources are important for both needlework and textiles provision, suggesting that to provide either course requires additional staff. The relationship of technology to PTRs is ambiguous. The few schools not providing Year 5 humanities courses other than history and geography have noticeably better PTRs than those which do, but in Year 1 this relationship is surprisingly reversed.

PTRs seem to have no effect on the total number of subjects provided in either Year 3 or Year 5 in either set of schools, the correlation coefficients being, in Year 3, 0.202 in the high schools, 0.284 in the 11-16/18 schools; and in Year 5, -0.130 in the upper schools and -0.061 in the 11-16/18 schools. As far as the individual groupings are concerned, in Year 3 high schools (Appendix 9), Science subjects show a tendency to be provided in rising numbers despite worsening PTRs , whilst in other areas the relationship is unclear. Amongst 11-16/18

Table 9.13
Average score on PTR variable for upper schools with and without key subjects in Year 5, Leicestershire, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	14.4	14.9	14.4	14.9
PSD	14.7	15.2	14.6	15.3
Information technology	13.5	14.9	13.5	15.2
Computing	14.9	13.5	15.2	13.5
Technology	14.8	15.0	14.9	15.0
Service sector-related	14.6	15.1	14.6	15.2
CDT, etc.	14.7	15.5	14.6	15.5
Woodwork, etc.	15.0	14.7	14.9	14.8
Needlework	14.8	14.9	14.9	14.8
Textiles, etc.	15.3	14.6	15.5	14.6
Technical drawing	15.0	14.7	15.2	14.9
Graphics, etc.	14.7	15.0	14.6	15.3
Non-traditional humanities	N/A	N/A	N/A	N/A
Non-traditional humanities, Year 1 (high schools)	17.5	17.7	17.8	18.4

Note: For definitions see Table 8.4

Table 9.14
Average score on PTR variable for 11-16/18 schools with and without key subjects in Year 5, Leicestershire, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	15.4	15.1	15.8	15.0
PSD	15.2	15.6	14.9	16.4
Information technology	16.4	15.1	16.4	15.0
Computing	N/A	N/A	N/A	N/A
Technology	15.0	15.3	15.3	15.1
Service sector-related	14.8	16.1	14.9	16.4
CDT, etc.	15.0	15.7	15.0	16.2
Woodwork, etc.	15.2	15.1	15.7	15.0
Needlework	14.9	15.4	14.9	15.8
Textiles, etc.	14.9	15.3	14.8	15.6
Technical drawing	15.4	15.0	16.4	15.0
Graphics, etc.	14.7	15.6	15.0	16.4
Non-traditional humanities	15.0	17.0	15.0	17.0
Non-traditional humanities, Year 1	15.3	15.1	15.8	14.9

Note: For definitions see Table 8.4

schools (Appendix 10), Sciences embody this positive relationship more strongly, and it is also manifest in Aesthetics, EPSC and OSC and less markedly in Humanities. In Languages there is no consistent trend. In Year 5, the small number of upper schools makes it hard to identify relationships (Appendix 9), and the 11-16/18 schools show no consistent trends in any grouping (Appendix 10).

Relationships between different parts of the curriculum

Tables 9.15 and 9.16 show the correlation matrices for the subject groupings in Years 1, 3 and 5 by type of school. As before, a more rigorous criterion is applied to the identification of important relationships for the upper schools because of the small sample size. It is clear from these matrices that significant correlations tend to emerge in the areas of greatest variation. Most importantly of all, there are relationships in the Aesthetic subjects which are unique to the county. Amongst the high schools Aesthetics subjects are negatively correlated with one or more subjects throughout the Years. In Year 1 there is evidence of a trend towards being provided at the expense of English Studies, Maths Studies and OSC. The trade-off with OSC continues in Year 3. The plots reveal that this correlation is due to one group of schools making a high level of provision in OSC and a further two schools making a high level of provision in Aesthetic subjects. The trade-off is perhaps not surprising given the overlap, especially in the area of design, between OSC and Aesthetic subjects. Nonetheless, the emphasis on Aesthetic subjects in the Leicestershire Plan schools clearly comes at a cost to other parts of the curriculum. In Year 5, Aesthetic subjects are positively correlated with EPSC.

Physical and Leisure subjects are negatively correlated with Remedial/Special Needs provision in Year 3 but this relationship is unreliable due to a large number of zero values. It is negatively correlated with EPSC in Year 5. OSC shows a weak negative correlation with Remedial/Special Needs in Year 1 along

Table 9.15 Intra-curricular correlation matrices for Years 1, 3 and 5, high and upper schools, Leicestershire, 1986/7

YEAR 1

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.648							
RE	0.121	0.112						
HUM	-0.140	-0.136	-0.016					
LANG	0.167	0.039	-0.110	-0.085				
SCI	0.297	0.091	0.094	-0.234	0.135			
P&L	-0.043	-0.132	-0.064	0.359	0.284	0.061		
AEST	-0.447	-0.430	-0.042	0.105	0.169	-0.228	0.131	
EPSC	0.048	-0.005	-0.177	-0.147	-0.204	-0.335	-0.357	-0.020
OSC	-0.100	0.011	-0.266	0.025	0.035	0.017	0.132	-0.423
X-CURR	-0.240	-0.265	-0.130	-0.247	-0.062	0.165	0.058	0.143
RM	-0.228	-0.237	0.169	-0.202	-0.455	-0.131	-0.260	-0.027

	EPSC	OSC	X-CURR
OSC	-0.224		
X-CURR	-0.244	0.165	
RM	0.129	-0.408	-0.128

YEAR 3

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.420							
RE	-0.004	0.014						
HUM	-0.175	-0.148	-0.150					
LANG	0.325	-0.132	-0.162	-0.177				
SCI	0.214	0.302	-0.058	-0.003	-0.045			
P&L	0.182	-0.025	0.059	0.115	0.256	-0.019		
AEST	0.059	-0.054	0.187	0.015	-0.065	-0.087	-0.093	
EPSC	-0.301	-0.243	-0.201	-0.295	0.033	-0.128	-0.366	-0.346
OSC	-0.121	0.039	-0.252	-0.213	-0.132	-0.160	-0.071	-0.492
X-CURR	0.102	-0.170	-0.095	-0.351	0.135	-0.307	0.107	0.183
RM	-0.480	-0.262	0.005	0.021	-0.070	-0.319	-0.412	-0.071

	EPSC	OSC	X-CURR
OSC	0.051		
X-CURR	-0.111	0.005	
RM	0.188	-0.003	-0.247

YEAR 5

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.024							
RE	-0.007	0.053						
HUM	-0.327	0.358	0.000					
LANG	-0.011	-0.033	0.659	-0.037				
SCI	-0.174	0.134	0.021	0.266	0.442			
P&L	0.204	0.407	0.389	-0.231	0.451	0.433		
AEST	0.059	-0.178	-0.490	0.257	-0.459	-0.398	-0.495	
EPSC	0.095	-0.095	-0.572	0.429	-0.596	-0.218	-0.626	0.688
OSC	0.015	-0.240	0.089	-0.763	-0.095	-0.305	-0.015	-0.530
X-CURR	-0.132	0.076	-0.210	-0.015	-0.070	-0.089	-0.352	-0.034
RM	-0.024	-0.126	-0.395	-0.316	0.073	0.148	0.139	-0.143

	EPSC	OSC	X-CURR
OSC	-0.459		
X-CURR	-0.266	0.291	
RM	-0.196	0.121	0.095

Table 9.16 Intra-curricular correlation matrices for Years 1, 3 and 5, 11-16/18 schools, Leicestershire, 1986/7

YEAR 1

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.004							
RE	-0.379	0.023						
HUM	0.284	0.182	-0.100					
LANG	-0.006	-0.008	-0.150	0.016				
SCI	0.100	0.126	-0.036	0.061	0.157			
P&L	-0.048	0.119	0.269	-0.023	-0.137	-0.192		
AEST	-0.056	0.081	0.272	0.043	-0.113	-0.248	-0.298	
EPSC	-0.223	-0.356	-0.084	-0.186	0.015	-0.284	-0.182	0.379
OSC	-0.053	0.031	-0.232	-0.048	0.060	0.109	-0.171	-0.468
X-CURR	-0.061	-0.041	-0.036	0.262	-0.167	-0.355	0.290	-0.123
RM	-0.168	-0.181	-0.040	-0.532	-0.177	-0.123	0.095	-0.497

	EPSC	OSC	X-CURR
OSC	-0.406		
X-CURR	-0.359	0.183	
RM	-0.128	0.112	-0.027

YEAR 3

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.180							
RE	0.257	0.295						
HUM	-0.119	-0.003	-0.477					
LANG	-0.344	-0.017	-0.198	-0.208				
SCI	0.274	0.163	0.042	0.045	-0.063			
P&L	0.236	0.515	0.278	-0.038	-0.031	0.205		
AEST	-0.151	-0.404	0.189	-0.368	0.004	-0.050	-0.112	
EPSC	-0.119	-0.603	-0.210	-0.155	-0.116	-0.372	-0.350	0.133
OSC	0.015	0.279	-0.050	0.124	-0.143	-0.108	-0.235	-0.425
X-CURR	0.198	-0.226	-0.258	0.170	0.198	-0.028	-0.057	-0.311
RM	-0.496	-0.230	-0.417	0.335	-0.109	-0.312	-0.640	-0.042

	EPSC	OSC	X-CURR
OSC	-0.439		
X-CURR	0.142	0.113	
RM	0.261	0.085	-0.312

YEAR 5

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.152							
RE	-0.193	-0.007						
HUM	-0.374	-0.270	-0.313					
LANG	0.002	-0.107	0.457	0.021				
SCI	0.012	0.218	-0.035	-0.303	0.262			
P&L	0.472	0.078	-0.152	-0.122	0.306	0.205		
AEST	-0.312	-0.193	-0.088	0.104	0.183	0.046	0.115	
EPSC	-0.038	0.028	0.191	-0.090	-0.333	-0.263	-0.238	0.221
OSC	-0.378	-0.229	-0.083	0.265	-0.330	-0.214	-0.605	-0.224
X-CURR	-0.157	-0.249	-0.177	-0.011	-0.215	-0.018	-0.154	-0.087
RM	-0.262	0.087	0.009	-0.016	-0.135	0.072	-0.163	-0.213

	EPSC	OSC	X-CURR
OSC	-0.212		
X-CURR	0.073	-0.044	
RM	-0.278	0.273	-0.153

with its relationship with Aesthetics, which continues in Year 3, and a negative relationship with Humanities in Year 5. Remedial/Special Needs provision also shows correlations, negatively in Year 1 with Languages and OSC and in Year 3 with English and Physical and Leisure subjects, although care has to be taken in interpreting these results because of a large number of zero values. English Studies and Maths Studies tend to occur together in schools in Years 1 and 3.

What of relationships in the 11-16/18 schools? Compared to the high schools, 11-16/18 schools show a different set of curricular needs and priorities. Overall there is evidence of a greater number of trade-offs between the different parts of the curriculum. OSC exhibits the most negative relationships - with Aesthetics and EPSC (both in Years 1 and 3) and with Physical and Leisure subjects (Year 5). In Years 1 and 3 Aesthetic subjects shows the same trade-off against OSC as in the high schools, with additional negative relationships with Remedial/Special Needs in Year 1 and Maths Studies in Year 3. But it shows no correlations in Year 5. Physical and Leisure subjects shows a negative relationship with Remedial/Special Needs in Year 3, and less explicable positive relationships with Maths Studies in Year 3 and English studies in Year 5. Remedial/Special Needs courses are provided at the expense of: in Year 1 Humanities and Aesthetics, and in Year 3 English, Religious Studies (although there is the problem again of a large number of zero values) and Physical and Leisure subjects. EPSC is provided at the expense of OSC in Years 1 and 3, and Maths Studies in Year 3. Notable for its lack of correlations is Languages.

9.5 Newham

Nature of curriculum variation

Chapter 8 revealed major variations in the curricula of Newham's schools in Religious Studies and, most importantly of all, in EPSC and OSC. The frequency distributions of the percentage

shares of TPW in each subject grouping are inconclusive because of the small number of schools involved.

Relationship of the curriculum to the socio-economic characteristics of school catchments

Table 9.17 shows the correlation coefficients for TPW shares against FSM. Because of the small sample size of schools for which there was curriculum data available (15) care has to be taken in the interpretation of the correlation coefficients. Relationships were identified by identifying those correlations greater than 0.6 or less than -0.6 and cross-checking against plots of the relationships. Relationships are hard to find. There is a positive correlation in Remedial/Special Needs provision in Year 1, which is to be expected. In Year 1, Aesthetic subjects also exhibit a correlation, but this is negative: less disadvantaged schools accord this area more resources. In Years 3 and 5 there are no correlations of significance, that with Religious Studies in Year 5 being spurious due to a large number of zero values.

Table 9.18 shows that unfortunately as far as as the key subjects are concerned, the small number of observations in many of the categories make the results meaningless (here shown as N/A). For those classes on which it is possible to pass comment, computing, PSD, graphics and Year 1 humanities courses show a tendency to be provided in more disadvantaged schools. Careers and CDT exhibit a reverse tendency, whilst textiles shows no trend one away or the other. An analysis of the percentage of TPW devoted to occupationally-related subjects shows that this is also not related to FSM, the correlation coefficients for percentage of Total TPW being -0.186 and that for percentage of OSC TPW -0.073.

The analysis of subject numbers shows no relationship between total numbers of subjects and the FSM variable (Year 3 correlation coefficient: -0.164; Year 5: -0.002). For individual groupings results are inconclusive (Appendix 11).

Table 9.17
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to the free school meals indicator, Newham, 1986/7, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	-0.100	0.254	0.268
Maths Studies	-0.325	0.236	0.507
Religious Studies	-0.531	-0.382	-0.778
Humanities	0.079	-0.189	0.068
Languages	0.175	-0.104	0.236
Sciences	-0.164	-0.082	-0.214
Physical & Leisure	-0.243	-0.193	-0.381
Aesthetic	-0.600	0.009	0.082
EPSC	-0.404	-0.136	0.057
OSC	-0.011	0.181	-0.143
Cross-curricular	-0.321	-0.079	0.000
Remedial/Special Needs	0.631	0.593	0.365

Table 9.18
Average score on FSM variable for schools with and without key subjects in Year 5, Newham, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	27	36	29	35
PSD	34	29	35	30
Information technology	N/A	N/A	N/A	N/A
Computing	34	30	34	29
Technology	N/A	N/A	N/A	N/A
Service sector-related	N/A	N/A	N/A	N/A
CDT, etc.	29	35	30	36
Woodwork, etc.	N/A	N/A	N/A	N/A
Needlework	N/A	N/A	N/A	N/A
Textiles, etc.	31	32	32	33
Technical drawing	N/A	N/A	N/A	N/A
Graphics, etc.	33	29	34	29
Non-traditional humanities	N/A	N/A	N/A	N/A
Non-traditional humanities, Year 1	35	29	34	30

Note: For definitions see Table 8.4

The problem here is, once again, that there are neither sufficient schools nor do they cover a wide enough range of backgrounds for the analysis to bear much fruit. However, in Year 3 Humanities does arguably show a negative relationship with FSM, whilst Languages exhibits the opposite tendency, but these are not sustained into Year 5. Languages clearly play a somewhat different role in Newham to that found elsewhere. Here provision is made to teach locally-relevant subjects like Hindi, Punjabi etc. and therefore tend not to be the preserve of more advantaged schools as they are elsewhere. We have already seen that in Year 3 more Languages subjects are provided in more disadvantaged schools.

Relationship of the curriculum to teaching resources

It was shown in Chapter 7 that 12 of Newham's 16 secondary schools fall within 1.5 pupils per teacher of one another. Given such a narrow range it would be surprising if PTR were to emerge as a significant influence on the curriculum; even in our other case studies where the range of PTRs is greater its influence has been varied. Table 9.19 confirms this. In Year 1 it is only Aesthetics which emerges as clearly related to PTR, but the positive correlation means that it absorbs more TPW with *worsening* PTRs. There are no relationships in Year 3 and in Year 5 the correlation of Religious Studies is unreliable due to a large number of zero values.

Table 9.20 shows where the provision of key subjects is influenced by PTRs. Of those subjects which tend to be provided by more disadvantaged schools, computing and PSD tend not to be related to staffing, whilst graphics and Year 1 humanities show more of a dependence on low PTRs. Careers and CDT are provided by less disadvantaged and also poorer-resourced schools, whilst textiles, once again, show little relation to PTRs.

The relationship between total numbers of subjects and PTRs is non-existent: the Year 3 correlation coefficient is 0.267 and the Year 5 coefficient 0.176. It is difficult to draw

Table 9.19
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to PTRs, Newham, 1986/7, Years 1, 3 and 5.

Subject grouping	Year 1	Year 3	Year 5
English Studies	-0.057	-0.143	0.157
Maths Studies	0.182	-0.043	-0.046
Religious Studies	0.520	0.440	0.616
Humanities	-0.314	-0.243	0.243
Languages	0.236	0.318	-0.021
Sciences	0.036	-0.150	-0.229
Physical & Leisure	-0.025	0.214	-0.029
Aesthetic	0.707	0.256	-0.068
EPSC	0.550	0.347	0.075
OSC	-0.473	-0.502	-0.321
Cross-curricular	0.261	0.212	0.105
Remedial/Special Needs	-0.425	-0.480	-0.053

Table 9.20
Average score on PTR variable for schools with and without key subjects in Year 5, Newham, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	14.9	13.6	15.0	14.1
PSD	14.3	14.2	14.5	14.9
Information technology	N/A	N/A	N/A	N/A
Computing	14.3	14.1	14.6	14.7
Technology	N/A	N/A	N/A	N/A
Service sector-related	N/A	N/A	N/A	N/A
CDT, etc.	14.7	13.7	14.8	14.5
Woodwork, etc.	N/A	N/A	N/A	N/A
Needlework	N/A	N/A	N/A	N/A
Textiles, etc.	14.4	14.1	14.6	14.6
Technical drawing	N/A	N/A	N/A	N/A
Graphics, etc.	13.7	14.9	14.4	14.9
Non-traditional humanities	N/A	N/A	N/A	N/A
Non-traditional humanities, Year 1	13.6	14.8	14.5	14.9

Note: For definitions see Table 8.4

conclusions for the individual subjects groupings because of the small number of schools in each category (Appendix 12). However, there is slight evidence that in Year 3 Humanities and Languages are provided in increasing numbers with rising PTRs; the result for Languages is similar to results in the other three LEAs. This may also be true of EPSC. In Year 5 Physical and Leisure subjects may show this type of relationship, as may Languages again, whilst OSC may show a negative relationship. But these conclusions must be tentative. None of the other groupings show straightforward trends.

Relationships between different parts of the curriculum

Neither PTR nor school background is a significant influence on the curriculum. A similar lack of results emerged from the analysis of the relationships between the TPW shares of individual subject groupings (Table 9.21). The greatest number of negative correlations occur in Remedial/Special Needs, but these results are distorted by four schools having zero values in this category. The only area to show negative correlations is Humanities, with Languages (Year 1) and EPSC (Year 3). Unlike the other authorities, there are no correlations for OSC, and there are no negative correlations at all in Year 5. Positive correlations are most common between Maths Studies and English Studies (in Years 3 and 5), with correlations also between Physical and Leisure subjects and Sciences (Year 5) and between EPSC and Aesthetic subjects (Year 1).

9.6 Sheffield

Nature of curriculum variation

Given the wide variation in school size, PTRs and schools context, it would be expected that this variation would manifest itself in the curriculum. Chapter 8 disclosed the main sources of curriculum variation in Sheffield. Apart from Religious Studies which, in general, represent only a small fraction of TPW, major variations were found in Years 1 and 3 in EPSC and

Table 9.21 Intra-curricular correlation matrices for Years 1, 3 and 5, Newham, 1986/7

YEAR 1

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.379							
RE	-0.095	0.404						
HUM	0.000	-0.182	-0.371					
LANG	0.082	-0.354	0.040	-0.654				
SCI	0.446	0.100	0.225	0.304	-0.150			
P&L	0.193	-0.004	-0.349	-0.318	0.221	-0.064		
AEST	0.054	0.389	0.509	-0.154	0.064	0.404	0.014	
EPSC	-0.179	-0.004	0.320	-0.368	0.450	0.189	0.221	0.621
OSC	0.075	0.151	-0.106	0.523	-0.577	0.122	-0.186	-0.097
X-CURR	-0.032	-0.014	0.135	-0.380	0.275	-0.413	0.206	-0.284
RM	-0.283	-0.510	-0.618	0.270	-0.065	-0.519	-0.103	-0.748

	EPSC	OSC	X-CURR
OSC	-0.337		
X-CURR	0.092	-0.235	
RM	-0.647	-0.116	0.014

YEAR 3

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.607							
RE	-0.120	-0.258						
HUM	0.329	0.039	0.098					
LANG	-0.264	-0.300	0.022	-0.471				
SCI	-0.114	-0.307	0.040	0.021	-0.171			
P&L	0.018	0.082	-0.407	0.129	0.104	-0.050		
AEST	0.148	-0.002	-0.004	-0.105	0.088	0.234	0.268	
EPSC	-0.477	-0.234	-0.089	-0.713	0.318	-0.198	-0.125	0.069
OSC	0.166	-0.030	0.095	0.597	-0.304	0.061	-0.486	-0.512
X-CURR	-0.286	-0.258	0.091	-0.426	0.378	-0.158	-0.059	-0.279
RM	0.080	0.124	-0.456	-0.382	0.022	-0.335	-0.095	-0.475

	EPSC	OSC	X-CURR
OSC	-0.522		
X-CURR	0.445	-0.254	
RM	0.078	0.091	0.169

YEAR 5

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.664							
RE	-0.290	-0.492						
HUM	-0.036	0.193	0.008					
LANG	-0.132	-0.161	-0.423	0.139				
SCI	-0.225	-0.304	0.278	-0.479	-0.246			
P&L	-0.597	-0.483	0.282	-0.218	-0.059	0.629		
AEST	0.096	-0.057	-0.105	0.161	0.243	-0.232	-0.247	
EPSC	0.104	-0.139	-0.129	-0.282	0.293	-0.314	-0.443	0.125
OSC	-0.418	-0.093	0.149	-0.296	-0.211	0.450	0.558	-0.325
X-CURR	0.023	0.050	-0.248	0.092	-0.064	-0.348	0.060	-0.390
RM	0.004	-0.192	-0.382	0.203	0.557	-0.324	-0.026	0.090

	EPSC	OSC	X-CURR
OSC	-0.429		
X-CURR	-0.133	-0.238	
RM	0.230	-0.418	0.222

OSC, followed by Aesthetic subjects, and in year 5 in Physical and Leisure subjects, followed by EPSC, OSC, Aesthetic subjects and Languages and thence by Humanities. The frequency distributions for the subject groupings reveal that many of these variations are the result of schools clustering into groups according to the percentage share of TPW (Appendix 13). This stands in marked contrast to Cambridgeshire where, with one or two exceptions, variation is the result either of differences in the range of more or less normally distributed data or of skewness. The findings for Sheffield reflect the polarisation between schools already noted in the other analyses in the thesis.

In the areas of greatest consistent variation, EPSC and OSC, distributions for Years 1 and 3 show this tendency very clearly. By Year 5 the differences between schools have become less acute, but upper and lower groups can still be identified in OSC. Aesthetic subjects, by contrast only show bi-modality in Year 3, although then in an acute form. Physical and Leisure subjects show a small group of schools making relatively high provision in Year 1, a more normal distribution in Year 3 and a large group of schools in Year 5 making relatively little provision clearly separate from the main body of institutions. Languages show the emergence of bi-modality in Year 3 which is continued in Year 5, whilst in Humanities bi-modality is a feature of Years 1 and 3, but not Year 5. In all but the case of Humanities the large variations observed in Chapter 8 stem from the grouping of schools. Moreover in no other subject grouping does multi-modality occur, and in these groups variation is comparatively slight.

Relationship of the curriculum to the socio-economic characteristics of school catchments

Having established the nature of curriculum variation, we can now examine the relationship of the curriculum to school context. Table 9.22 presents the results of correlating TPW shares of each subject grouping with the Index of Net

Table 9.22
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to the Index of Net Disadvantage, Sheffield, 1986/7, Years 2, 3 and 5.

Subject grouping	Year 2	Year 3	Year 5
English Studies	-0.200	-0.226	0.330
Maths Studies	-0.565	-0.254	0.260
Religious Studies	0.281	0.345	0.238
Humanities	0.279	-0.030	0.329
Languages	0.044	0.333	0.410
Sciences	-0.064	0.230	0.619
Physical & Leisure	-0.179	-0.309	0.021
Aesthetic	0.041	0.086	-0.067
EPSC	0.150	0.180	-0.153
OSC	-0.066	-0.167	-0.513
Cross-curricular	-0.141	-0.106	-0.424
Remedial/Special Needs	0.340	0.325	-0.158

Disadvantage (IND). Because of the fact that only some of the schools have Year 1, Year 2 correlations are presented instead. Despite the extensive variations discussed above, and despite the relationship between IND and PTR, it can be seen that few of the coefficients are significant. In Year 2 Maths Studies shows a higher priority in disadvantaged schools. In year 3 there are no important coefficients. In Year 5 a strong positive relationship emerges between Sciences and the Index, and this is accompanied by a negative relationship between OSC and the IND. Less strong correlations are also found in Languages, where the relationship is positive and Cross-curricular subjects, although this is the result of a large number of zero values. These findings can be related to the frequency distributions underlying the curriculum variations. It is clear that the groups of schools identified in EPSC, OSC, Aesthetic subjects, Physical and Leisure subjects, Languages and Humanities do not necessarily fall within narrow bands of the IND.

The curriculum can be examined in more detail. Table 9.23 shows the key subjects we have selected and indicates the average score on the IND for schools with and without these subjects. Some subjects tend to occur in more disadvantaged schools: PSD and Year 2 non-traditional Humanities courses clearly do so. The service sector-related subjects also show a relationship to the IND. In terms of the proportion of TPW allocated to the occupationally-related subjects there is no relationship (the coefficient of the correlation of the percentage of total TPW with the IND is -0.051, and of the percentage of OSC TPW 0.091). Both CDT and the traditional crafts show a tendency to occur in disadvantaged schools, but the trend is more clearly drawn in the case of CDT. In the needlework/textiles dichotomy it is the advantaged schools which tend to have remained with the traditional subjects. In the other transitional pair, technical drawing/graphical subjects, comment is not possible as only two schools provide separate graphics subjects. However, technical drawing tends to be taught in more advantaged schools. This is also true of Year 5 non-traditional humanities subjects, which

Table 9.23
Average score on Index of Net Disadvantage for schools with and without key subjects in Year 5, Sheffield, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	506	153	621	93
PSD	277	291	205	385
Information technology	N/A	N/A	N/A	N/A
Computing	415	48	418	35
Technology	288	266	211	361
Service sector-related	247	391	211	242
CDT, etc.	205	459	130	523
Woodwork, etc.	246	319	130	388
Needlework	347	76	385	205
Textiles, etc.	91	324	171	385
Technical drawing	566	119	621	93
Graphics, etc.	N/A	N/A	N/A	N/A
Non-traditional humanities	344	49	432	130
Non-traditional humanities, Year 2	-143	466	-400	391

Note: For definitions see Table 8.4

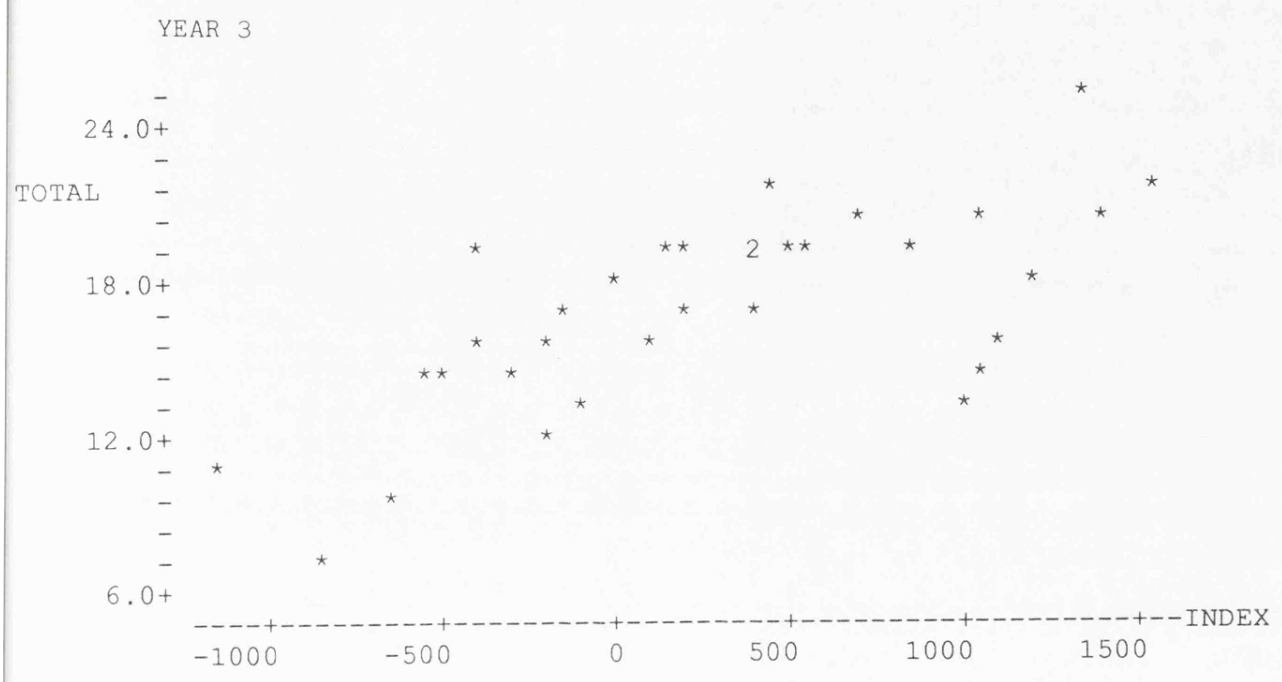
is to be expected, and, perhaps surprisingly, of careers, though this may be subsumed by the PSD subjects more prevalent in disadvantaged schools. Computing also seems to be the preserve of advantaged schools. The position of technology is less clear, and information technology cannot be commented upon.

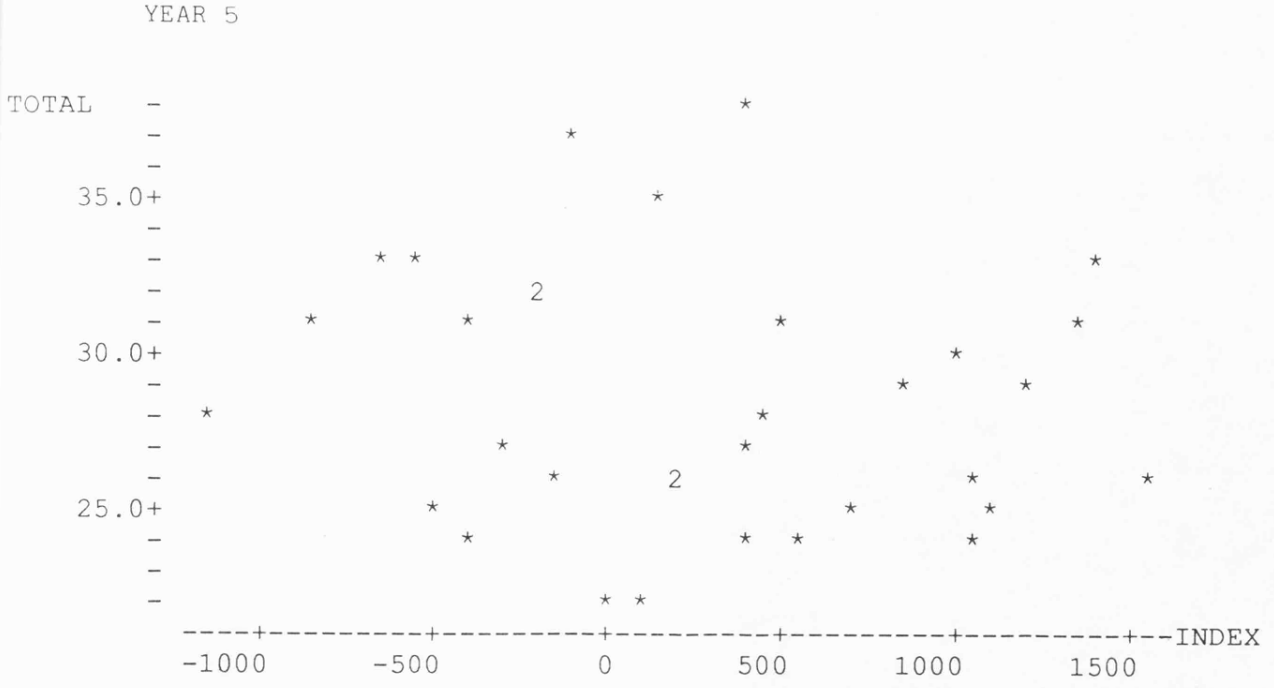
It is also possible to examine the number of subjects overall and in each grouping against the IND. These are shown graphically in Figure 9.3, which shows the relationship between the total number of subjects in Years 3 and 5 respectively against the Index, and Appendix 14, which shows the results for the groupings. Figure 9.3 shows the tendency to provide overall fewer subjects to less disadvantaged pupils in Year 3 (correlation coefficient: 0.656) and the disappearance of this relationship by Year 5 (correlation coefficient: -0.141). In Year 3, therefore, the additional resources granted to the more disadvantaged schools are not being used to provide extra subjects.

This overall relationship in Year 3 is borne out in the constituent subject groupings. In Languages, Sciences, Physical and Leisure and OSC there is a clear increase in the number of subjects provided with an increasing score on the Index. In Humanities, the medians show an upward trend between 1 and 2 subjects then dips to 3. In Aesthetics there is only a slight rise in general, whilst in EPSC the curve rises to three subjects but there are two disadvantaged schools providing four and an advantaged one providing five.

In Year 5, the general uniformity between groupings breaks down. Where it is possible to draw out the relationships (i.e. where the distribution allows) the traditional status and role of subjects clearly is influential. In Humanities and Languages subjects numbers increase in advantaged schools. In Aesthetics and EPSC, subjects numbers rise in disadvantaged schools. However in OSC, school background is irrelevant.

Figure 9.3 Relationship between total number of subjects and IND, Years 3 and 5, Sheffield, 1986/7





Relationship of the curriculum to teaching resources

If the relationship of curriculum shares to school background is weak, this is also true of their relationship to PTRs. Table 9.24 shows the results of the rank correlation of the two data sets. In Year 2 there are no major correlations. In Year 3, Maths Studies is negatively correlated with PTR. By contrast, in Year 5, and consistent with our findings from the other LEAs, Sciences is provided in spite of depleting teaching resources. Taken with our findings above, this points to the more advantaged schools applying this policy. English Studies also shows a positive relationship but this is less easily accounted for.

Table 9.25 fleshes out these gross findings with information on the key subjects. Unfortunately, because of the positive correlation of PTRs with school background it is difficult to say to what extent resources are acting as a surrogate for background or as a variable in their own right. However, where the findings run in opposite directions interesting conclusions emerge.

PSD, for example, shows that, although it tends to be more disadvantaged schools which provide this subject it is those comparatively poorly resourced schools which do so. PTR therefore does not act as a constraint on its provision. In careers, the relationship to PTR is ambiguous compared to its relation to background. As far as the transitional pairs are concerned, CDT is clearly provided in well-resourced schools whilst wood- and metalwork is much less obviously related to PTR. Needlework is also more closely related to background than to PTR, whilst the six schools provding textiles and fashion courses are comparatively poorly resourced although more disadvantaged than the remaining schools, implying that PTRs are not a constraint. Of all the key subjects it is Year 2 non-traditional Humanities which shows the strongest tendency to be provided in well-resourced schools, but it is also the subject most strongly related to the IND variable.

Table 9.24
Spearman's rank correlation coefficients for the relationship of percentage shares of TPW to PTRs, Sheffield, 1986/7, Years 2, 3 and 5.

Subject grouping	Year 2	Year 3	Year 5
English Studies	-0.263	-0.072	0.407
Maths Studies	-0.259	-0.424	0.271
Religious Studies	0.223	0.240	0.195
Humanities	0.188	0.178	0.191
Languages	-0.055	-0.045	0.240
Sciences	-0.013	0.123	0.468
Physical & Leisure	0.086	-0.119	0.089
Aesthetic	0.267	0.375	-0.062
EPSC	-0.230	0.028	-0.228
OSC	0.068	-0.037	-0.289
Cross-curricular	0.068	-0.025	-0.284
Remedial/Special Needs	0.262	0.276	-0.091

Table 9.25
Average score on PTR variable for schools with and without key subjects in Year 5, Sheffield, 1986/7

	MEAN		MEDIAN	
Key Subject	With	Without	With	Without
Careers	14.7	14.6	14.4	14.5
PSD	14.7	14.6	14.9	14.3
Information technology	N/A	N/A	N/A	N/A
Computing	14.8	14.4	14.6	14.5
Technology	14.8	14.2	14.8	13.8
Service sector related	14.6	14.8	14.4	14.8
CDT, etc.	14.4	15.1	14.5	15.0
Woodwork, etc.	14.8	14.5	14.4	14.9
Needlework	14.6	14.6	14.5	14.7
Textiles, etc.	15.0	14.6	14.9	14.4
Technical drawing	15.1	14.3	15.0	14.3
Graphics, etc.	N/A	N/A	N/A	N/A
Non-traditional humanities	14.8	13.9	14.5	14.5
Non-traditional humanities, Year 2	13.4	15.2	13.5	15.0

Note: For definitions see Table 8.4

PTRs may also be related to subject numbers. In both Years 3 and 5 the total number of subjects bears no straightforward relationship to PTRs, the rank correlation coefficients being 0.369 and -0.212 respectively. In Year 3, the individual subject groupings of Languages, Sciences and Aesthetics show the provision of increasing numbers of subjects in spite of increasing PTRs (Appendix 15). In EPSC and OSC the relationship is unclear. In Year 5, Languages maintains its positive relationship with PTRs and in Humanities schools providing four subjects exhibit a poorer PTR than those providing two or three. In Aesthetics, a positive relationship exists up to 3 subjects, but beyond this point only well-resourced schools provide four subjects. Only in EPSC is there a strong, consistent negative relationship, partly because of the larger numbers of subjects many schools provide. In OSC there is no clear relationship.

Relationships between different parts of the curriculum

Are there any systematic cases of schools providing types of subjects at the expense of or in association with others? Correlating the subject groupings against one another in terms of shares of TPW failed to throw up many relationships which were consistent over Years (Table 9.26). Languages and OSC show negative correlations in all years but with different groupings. Languages is provided in Years 2 and 3 at a cost to Aesthetics. In Year 5 the trade-off is with OSC. OSC shows negative correlations with EPSC (Year 2), and Languages (Year 5). EPSC shows trade-offs in Year 2 with OSC and Humanities. The negative correlations recorded for Cross-curricular subjects are spurious due to a large number of zero values. Positive intra-curricular correlations occur in Maths Studies (with English Studies in Year 5) and also in Year 5 between Humanities and Sciences.

Table 9.26 Intra-curricular correlation matrices for Years 2, 3 and 5, Sheffield, 1986/7

YEAR 2

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.167							
RE	0.082	-0.333						
HUM	0.050	-0.199	-0.049					
LANG	-0.011	0.325	-0.010	0.184				
SCI	0.108	-0.041	-0.039	0.071	0.014			
P&L	0.234	0.017	0.020	-0.143	-0.082	0.172		
AEST	-0.260	-0.195	0.222	-0.277	-0.452	-0.188	0.035	
EPSC	-0.238	0.005	0.113	-0.488	-0.065	-0.272	-0.237	0.148
OSC	-0.138	-0.223	-0.035	0.104	-0.208	0.153	-0.133	-0.375
X-CURR	-0.167	0.403	-0.310	-0.185	-0.032	-0.437	-0.281	0.101
RM	-0.286	-0.343	-0.244	0.237	-0.100	0.004	-0.084	-0.065

Continue?

	EPSC	OSC	X-CURR
OSC	-0.404		
X-CURR	0.036	-0.013	
RM	-0.052	0.058	-0.004

YEAR 3

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.286							
RE	-0.128	-0.307						
HUM	0.011	-0.345	-0.055					
LANG	0.138	0.298	-0.214	0.262				
SCI	-0.164	-0.054	0.053	0.034	0.015			
P&L	0.241	0.379	-0.227	-0.156	0.070	0.006		
AEST	-0.182	-0.330	0.313	-0.113	-0.436	-0.177	-0.156	
EPSC	-0.355	-0.234	-0.076	-0.267	-0.160	-0.147	-0.332	0.250
OSC	-0.032	0.232	0.171	0.016	-0.360	0.058	-0.057	-0.257
X-CURR	0.070	0.217	-0.178	-0.115	0.031	-0.354	-0.033	0.154
RM	-0.295	-0.376	0.057	0.083	-0.014	0.289	-0.322	0.039

Continue?

	EPSC	OSC	X-CURR
OSC	-0.337		
X-CURR	0.007	-0.477	
RM	-0.009	-0.138	0.087

YEAR 5

	ENG	MATH	RE	HUM	LANG	SCI	P&L	AEST
MATH	0.426							
RE	-0.056	0.092						
HUM	-0.033	-0.269	-0.060					
LANG	0.134	-0.091	0.055	0.275				
SCI	0.110	-0.117	0.307	0.476	0.244			
P&L	0.060	-0.305	0.208	-0.032	0.205	0.031		
AEST	-0.003	0.083	0.082	-0.121	-0.038	-0.094	-0.082	
EPSC	-0.262	0.120	-0.184	-0.213	-0.207	-0.329	-0.217	0.047
OSC	-0.302	-0.106	-0.068	-0.197	-0.447	-0.239	-0.300	-0.226
X-CURR	-0.051	-0.199	-0.342	-0.369	-0.332	-0.408	-0.165	-0.139
RM	0.002	-0.099	0.227	-0.417	-0.083	-0.041	-0.043	0.069

Continue?

	EPSC	OSC	X-CURR
OSC	-0.207		
X-CURR	-0.006	0.130	
RM	-0.076	0.090	0.279

9.7 Conclusions

This chapter has presented an analysis of the relationship of key features of the curriculum to resources and school context within the four case study authorities. The results from the different areas will now be drawn together. The findings lead to important conclusions regarding the nature of curriculum variation. They highlight those aspects of the curriculum which, despite major differences between the LEAs and between the schools, override those differences. The results also show those parts of the curriculum which are more sensitive to local factors and whose behaviour with respect to resources and socio-economic context therefore varies between schools and LEAs.

In terms of *balance and breadth* it is clear that in certain areas of the curriculum there is considerable variation. This variation is so substantial that it gives cause for concern since some schools dedicate only a small proportion of their curricula to certain subject groupings. In general, the chapter has identified a *de facto* core outside of which schools can exercise an important element of 'choice'. The core comprises English Studies, Maths Studies, Humanities and Sciences where a high degree of consensus exists regarding the 'appropriate' share of teaching resources. In EPSC and OSC there is major and significant variation. Languages, Physical and Leisure subjects and Aesthetic subjects occupy something of a middle position, consuming a decreasing share of TPW over the Years but exhibiting less substantial variation than EPSC and OSC. Religious Studies, Cross-curricular subjects and Remedial/Special Needs provision have a special position, being important components of the curriculum in some schools, whilst not occuring at all as separate groupings in others.

But to what extent do these variations represent local adaptation to needs - or 'relevance'? The analysis of the curriculum in terms of TPW revealed little evidence of any systematic relationship between *overall curriculum structure* and school background. There are difficulties here in using the

measure of free school meals as an indicator of context since it only reflects one dimension of the complexities of the socio-economic factors which might affect the curriculum; the results for Sheffield indicate the value of a more refined indicator, though there are problems here too. There are also problems deriving from the aggregation of data to school level since socially more heterogeneous schools would be unlikely to show adaptation at school level as more homogeneous schools might: the adaptation might take place *within* the school. But it is clear that schools at similar points on the scale of disadvantage do exhibit very different curriculum structures and this finding is upheld by qualitative information obtained from officers in the authorities.

Rather than response to need being reflected in the overall curriculum, it is to be found *within the subject groupings*. The analysis of the *numbers* of subjects provided in the different subject groupings revealed this most clearly in Languages and Humanities. In both Year 3 and Year 5, there is a tendency for more advantaged schools to provide more subjects in these groupings. This finding reflects the position in the curriculum hierarchy of subjects in these areas. The one important exception to this is in Newham in Year 3 where Languages exhibit more subjects in disadvantaged schools. This is a local adaptation to a multi-ethnic population which runs against the grain of wider curricular relationships and illustrates the way the role of subjects locally may differ from national parameters. There is also evidence from two LEAs to suggest that the Sciences tend to exhibit higher numbers of subjects in more advantaged schools in Year 3. This reflects a similar process to that noted above for Humanities by which pupils from disadvantaged schools receive integrated subjects thereby reducing the numbers of subjects in the curriculum. There is a noticeable lack of *positive* relationships between disadvantaged schools and the subject groupings, except in the case of Year 5 EPSC subjects. This is *prima facie* evidence of wider choice for disadvantaged students in this grouping and represents an important adaptation to need.

The results of this chapter also show that it is amongst subject groupings which exhibit considerable variation that trade-offs are made. This is borne out by Table 9.27, which shows the number of high correlations for each subject grouping in terms of TPW related to the other groupings. (Because of the difficulties of the correlations for Cross-curricular and Remedial/Special Needs provision caused by the large number of schools not providing these subjects, the results for only the ten major groupings are shown here). Those areas exhibiting the most correlations are OSC, EPSC, Aesthetics and Languages. Aesthetics' correlations are concentrated in Leicestershire for reasons of curriculum history. Examining these four groupings in more detail (Table 9.28) reveals that in every case apart from EPSC, most of the correlations are amongst the groupings. These are the key marginal areas, outside of the core, where choices must be made, where there is room to accommodate local needs. In contrast, English Studies and Maths Studies show a tendency to be provided in tandem: schools making substantial provision in one will tend to do so in the other (Table 9.29). The trade-offs reflect, in part, the position of subjects in the curriculum hierarchy, which, I have suggested (Section 8.2), may be closely related to a subject's status with respect to the core and margins of a curriculum. Some subjects such as maths and English are provided for all pupils and are somewhat neutral with respect to the hierarchy. Others, OSC and Languages in particular, tend to be taken by disadvantaged and advantaged pupils respectively and tend to be provided at one another's expense. In contrast, the role of EPSC is more ambiguous, and is just as likely to be traded-off against core as marginal subjects.

The analysis of key subjects shows that a number of important individual subjects are related to school background. In general, it is more disadvantaged schools which are more likely to be innovatory; it is through the introduction of new courses that schools have been able to move away from the dominance of the traditional academic curriculum. In all of the LEAs, PSD

Table 9.27
Important negative intra-curricular correlations, Years 1, 3 and 5

	Cambs.	Leics.		Newham	Sheffield*	Total
		Plan 11-16/18				
English Studies	2	1	0	0	0	3
Maths Studies	2	1	2	0	0	5
Religious Studies	3	0	1	0	0	4
Humanities	0	1	1	2	1	5
Languages	3	0	0	1	3	7
Sciences	0	0	0	0	0	0
Physical & Leisure	0	1	1	0	0	2
Aesthetic	0	4	3	0	2	9
EPSC	2	1	3	1	2	9
OSC	3	3	5	0	2	13

* Year 2 instead of Year 1

Note: The criteria selected for choosing correlations was a Spearman's rank coefficient of -0.4 to -1 in the cases of schools in Cambridgeshire, 11-16/18 and high schools in Leicestershire and Sheffield. In the case of Leicestershire upper schools and Newham schools a criterion of -0.6 to -1 was used because of the small sample size.

Table 9.28
Intra-curricular trade-offs in Languages, Aesthetics, EPSC and OSC.

Languages:
Cambs.- OSC x3
Leics. - None
Newham - Humanities x1
Sheffield - Aesthetics x2, OSC x1

Aesthetics:
Cambs. - None
Leics. - OSC x4, Maths Studies x2, English Studies x1
Newham - None
Sheffield - Languages x2

EPSC:
Cambs. - English Studies x1, Maths Studies x1
Leics. - OSC x2, Maths Studies x1, Physical and Leisure x1
Newham - Humanities x1
Sheffield - Humanities x1, OSC x1

OSC:
Cambs. - Languages x3
Leics. - Aesthetics x4, EPSC x2, Humanities x1, Physical and Leisure x1
Newham - None
Sheffield - Languages x1, EPSC x1

Table 9.29
Important positive intra-curricular correlations, Years 1, 3 and 5

	Cambs.	Leics.		Newham	Sheffield*	Total
		Plan 11-16/18				
English Studies	3	2	1	2	1	9
Maths Studies	3	2	1	2	1	9
Religious Studies	0	1	1	0	0	2
Humanities	0	0	0	0	1	1
Languages	0	1	1	0	0	2
Sciences	0	0	0	1	1	2
Physical & Leisure	0	0	2	1	0	3
Aesthetic	0	1	0	1	0	2
EPSC	0	1	0	1	0	2
OSC	0	0	0	0	0	0

* Year 2 instead of Year 1

Note: Same criteria as for Table 9.27 apply but for positive correlations.

courses tend to be provided in more disadvantaged schools. In three of the LEAs, non-traditional Humanities courses in the first Years follow a similar trend, the exception being Leicestershire. There is also evidence that CDT courses tend to occur in the more disadvantaged schools; the exception to this is Newham, where the concept of disadvantage is a very relative one, and Leicestershire where there is little relationship either way. There is also evidence that it is the more disadvantaged schools which have tended to introduce graphics subjects. The only key subjects which show evidence of occurring in advantaged schools in this analysis are careers and Year 5 non-traditional Humanities courses. It is likely that separate careers subjects are incorporated into the PSD area in more disadvantaged schools, whilst the Year 5 Humanities subjects tend to be those courses such as economics and sociology taken by more able pupils - in contrast to Year 1 and 2 Humanities subjects which are more likely to be integrated courses taken by less able pupils. The other subjects do not exhibit relationships to background in a systematic way across the LEAs

Many of these relationships between background and the curriculum suggest consequences for resources. However, it has proved difficult to establish simple relationships between subject provision and PTRs. Lower PTRs can be used by schools in a variety of ways - to lower contact ratios, reduce class sizes etc. - and not just to introduce more subjects. The analysis of subject groupings in terms of TPW shares showed that no one curriculum area or group of areas was more or less dependent on PTRs, which might have been expected given the marginal status of certain areas. Any effects of contraint are likely to be spread across the curriculum, although further investigation would be required to confirm this which looked at variations over time in the same school rather than variations between schools. The only significant conclusion to emerge - and one which was found in more than one LEA - was the tendency for Languages and the Sciences to consume an increasing share of TPW *despite higher PTRs.* Given that these subject groupings tend to

be numerically more important in advantaged schools, it is clear that these schools are making provision in the face of a poorer staffing base. This finding is confirmed by the analysis of the relationship between PTRs and subject numbers. These results clearly have rather controversial consequences for the argument that staffing should be sensitive to local needs.

If there is little relationship to PTR at the level of overall structure, are individual subjects more affected by staffing levels? In particular, do resources contrain provision? Analysis of key subjects reveals that relationships here are complex and in general uncertain. However, in both PSD and CDT there is a tendency for provision to depend to greater or lesser degrees on PTRs, with some exceptions, suggesting that curriculum change depends in these areas on the availability of resources. Provision of non-traditional Humanities in Years 1 and 2 likewise tends to depend on low PTRs, as do service sector-related courses (though in Cambridgeshire the relationship is reversed). The innovation of graphics subjects shows some relationship to better PTRs, whilst the introduction of textiles does not. Computing, information technology and technology also seem not to depend on staffing.

There is little evidence of a systematic relationship between schools' overall curricula and their backgrounds from these anaylses. There is considerable variation between schools at similar points on the indices of disadvantage. Adaptation would seem to take place within an overall curriculum structure which, the results of Chapter 8 indicate, is resistant to major, rapid change. This is not to suggest that adaptation does not occur; but change does not take place rapidly or to any major degree at this level. The relationship to staffing is one in which variations in PTRs do not work to the systematic advantage or disadvantage of particular parts of the curriculum. Taken as a whole, the results indicate those key relationships between resources, school context and the curriculum which override local differences. Results which differ from these 'norms' suggest the operation of local factors which demand further

study. In particular, where school background or resources fail to affect the curriculum, it is possible that the local authority has intervened in such a way that an equality of provision is brought about amongst its schools. But in general, the results reflect the myriad diverse needs and demands of individual schools deriving from explicit curriculum policies but also from such factors as room restrictions, inertia, and luck (the loss of staff, for example). It is these needs which cross-cut in unique ways for each school and which undermine schools' attempts to plan for rational curricula and which can lead to the obscuring of adaptation at the level of overall curriculum structure.

CHAPTER 10: CONCLUSIONS: CHANGE AND VARIATION IN ENGLISH EDUCATION

10.1 Introduction

In this final chapter I shall draw together the major findings of the empirical sections of the thesis and relate them back to the framework set up in Chapters 2 and 3. It is not intended to rehearse sequentially the conclusions to each chapter which can be found at their appropriate place elsewhere in the thesis. Instead, I shall discuss the results in the context of the themes which have emerged from the concepts and framework employed. Above all, I shall look forward to examine the repercussions of the findings for current developments in the management of resources and the curriculum. Through this approach, I shall outline worthwhile areas for further study.

10.2 Resources

This thesis has presented an original analysis of the management of resources, unit costs and the curriculum during an important period of change for the education service. It has been a central tenet of the thesis that the management of change can be understood only in the context of the relationships between the actors involved in the provision of the service. Change takes place in education in the context of significant local variations in provision which are one of the key policy outcomes of the relationships between actors established in the post-war period. The variations appear to be substantial enough to have an important bearing upon the educational opportunities available to children.

Changes have been both exogenous and endogenous to the education policy community. Throughout most of the post-war period, curriculum change was a largely endogenous process. Debates over resources, on the other hand, brought education into contact with other policy networks, although for a long time the

spending departments held the upper hand in negotiations with the Treasury. The 1970s and 1980s, however, saw both education resources and the curriculum increasingly affected by exogenous factors. Change was forced upon education from without. This thesis has assessed the impact of these changes through the analysis of resources and the curriculum in different local contexts.

10.2.1 The management of resources in the context of changing central-local relations

The 1980s saw education suffering from the effects of an explicit policy of public expenditure control and reductions implemented by successive Thatcher governments. Chapter 6 examined the consequences of the new regime for secondary education. It assessed the impact of changes to the system of central grants on local authority expenditure. It showed that different authorities managed resource constraint in ways which were shaped by their different contexts. In general, it showed that the new system brought about important reductions in the total expenditure of authorities, and that the mainstream education system was protected from the worst effects of constraint. There is little evidence from the expenditure figures of any sustained reductions in total expenditure on secondary education. The worst years were in the early 1980s. However, constraints were not spread evenly amongst the constituent items of education expenditure. Due to the nature of education costs, expenditure on teaching staff increased throughout the period in question. However, one of the central problems for education has been the need to maintain rising unit costs in the face of falling numbers of pupils simply to maintain the same standard of provision, and this renders the assessment of changing provision problematic.

But it is clear that the effects of constraint have been focused in areas of expenditure outside teaching staff, in books and equipment, premises and non-teaching staff. The most important feature of expenditure in these areas has been instability: year

to year changes have been unpredictable and planned budgeting extremely difficult. It is possible that it was this element of the way cuts were brought about rather than the cuts themselves which caused the greatest long-term damage. However, it is also clear that the protection of staffing ensured that the direct effects of resource constraint on the curriculum were attenuated, and were felt either through capitation (where whatever problems there were arose from increased demands rather than consistent cuts) or indirectly through other ares (e.g. premises staff) which are somewhat removed from the educational process itself.

The experience of individual authorities could be substantially different to national averages for their classes. Removing the averaging effects of the analysis of the national data, the case studies show the increasing divergence between authorities over time. Chapter 6 showed that these differences stem both from exogenous factors (principally falling rolls and the effects of the block grant changes) and policy choice. There were complex interactions between the two. The case studies highlight the different strategies of different types of authority in managing contraction. However, regardless of the choice of management strategy, it is clear that all LEAs faced major difficulties in coping with the changes of the early 1980s.

Changes in the resource environment created difficulties for education because they were completely unrelated to the tempo of curriculum development. As shown in Chapter 8, curriculum change occurs slowly, on a very different time scale to resources. Yet it is against this background that the most important curriculum developments since the War have been instituted: TVEI, GCSE and the National Curriculum. However, it is significant that additional resources were found for TVEI which were comparatively insulated from the types of unpredictabilities which characterised budgeting in the early 1980s by being channelled through the Training Agency. Unfortunately, commensurate support has not been forthcoming for the other two developments which involve thoroughgoing and

wholesale change. Meanwhile changes in the resource environment have become no more certain. The new system of local government finance based on the community charge and the uniform business rate seems to be starting a re-run of events a decade before, with unpredictabilities and the introduction, late in the day, of community charge-capping legislation. The need for stability in resources continues to be unsatisfied.

10.2.2 The allocation of resources to schools and implications for local management of schools

The thesis explored the nature of the distribution of teaching staff between schools in the four LEAs (Chapter 7). There was no evidence from the case studies of any discrimination in resource allocations against disadvantaged pupils. On the contrary, all the evidence pointed to some form of compensation for school background, albeit not on a systematic basis. Two reasons can be advanced to account for this. Firstly, it is unlikely that resource distributions would have revealed a systematic bias due to the intervention of a local political process. Local politics has not penetrated the resource allocation process except in a very minor way which has only a marginal impact on overall distributions. Secondly, and related to this, there would appear to be an acceptance of the need for a general equality of provision both for reasons of bureaucratic simplicity and fairness. Seen in the context of the education policy community in the post-war period, this notion ensured a general equality of provision whilst the rights of schools and teachers to determine the curriculum themselves was protected.

However, Chapter 7 makes it clear that staffing allocations to schools are only partly related to 'technical' influences, such as school size or post-16 provision. The findings present a strong *prima facie* case, on the basis of school size, for important inequalities in provision . Since the vast majority of staffing allocations are pregiven, variations are unlikely to be related to current needs, although they may be the result of past *ad hoc* allocations.

These findings have important ramifications for recent legislation. The introduction of local management of schools through the 1988 Education Reform Act is bringing about a radical restructuring of relationships based around resources in local authorities. All LEAs are now introducing formula budgeting techniques to allocate resources to their schools so that schools may be given responsibility for managing the majority of their finances. This is not without controversy. The new techniques involve the redistribution of resources amongst schools and inevitably this involves winners and losers. In some areas, including Cambridgeshire, the new approach has led to teacher redundancies in some schools. However, one of the central problems for the new systems is that it is not clear if effects such as teacher loss are due to redistribution or due to reductions in total budgets. The one can provide a convenient smokescreen for the other.

The results of this thesis have shown that school costs are highly complex (Chapter 7). There are clearly a myriad of local factors which could not be taken into account here and probably could not be taken into account in any simple allocation procedure. There are important trade-offs between the need for simplicity at LEA level (both for bureaucratic reasons and reasons of accountability and fairness) and the needs of individual schools. Historical allocations carried into the present may reflect need but it is just as likely that they have lost their relevance. Without detailed local information it is difficult to know which. It is doubtful that LEAs will have the means of taking these local school factors into account, some of which may require qualitative information. This is a lesson for all in the complexity of local management of resources which cannot be captured by rigid quantitative formula budgeting methods.

The findings from the surveys of the management context (Chapter 5) have important implications for resource allocation at LEA level. The results showed that schools within very different

authorities have moved in broadly similar directions with respect to their internal allocation of resources. This contrasts with the position in the LEAs themselves where change is much more difficult to institute. Because the process has been voluntary, the types of procedures which schools have been able to introduce themselves (*not* under the *imprimatur* of legislation) have been those which have widespread acceptance: a combination of quantitative assessments and qualitative judgements of need has proved very popular. Such principles could provide useful guidance for LEAs currently reforming their allocation procedures. But whether it is possible to incorporate qualitative assessment at LEA level is open to doubt.

10.3 The curriculum

The thesis presented important findings for both the curriculum itself and its management in the context of relationships between actors in the service. The two are closely inter-related and the following sections draw out the links between the two.

10.3.1 The role of different subjects in the curriculum

An important part of the thesis has been the establishment of the empirical relationships between the curriculum and two key factors: the socio-economic context and resources. By establishing these relationships these analyses have illuminated the role of different parts of the curriculum. The nature of some of these relationships has been found to be closely related to the concept of a curriculum hierarchy. Where this link is particularly strong the effect has been shown to transcend LEAs. In other cases the thesis has been able to shed light upon those parts of the curriculum whose roles are changing or have been ambiguous, or which are flexible enough to permit adaptation to local needs at the level of analysis adopted. There are close

links between a subject area's role and its position with respect to the 'core' and 'margins' of the curriculum.

Chapters 8 and 9 showed that of all the subject groupings Languages and Sciences showed relationships to context and resources which tended to over-ride local differences. They tended to be provided in more advantaged schools. But the results from Newham show that the role even of a subject grouping like Languages can alter depending upon context since here Languages are provided in greater numbers in more disadvantaged schools because of the great demand for the provision of languages for its diverse local ethnic communities. Humanities subjects also showed a tendency to be provided in larger numbers in more advantaged schools. These findings reflect the position of Languages, Sciences and Humanities towards the top end of the status hierarchy. English Studies and Maths Studies tended to occur together and provide the core for all pupils and in this sense might be said to have a 'neutral' status. Physical and Leisure and Aesthetic subjects occupy a similar position. Occupational Skills and Crafts (OSC) and Languages tended to be traded-off against one another suggesting that OSC might be accorded more priority in more disadvantaged schools, although it shows considerable variation. Education for Personal and Social Competence (EPSC), however, occupies a more ambiguous position, and also exhibits major variation. Whilst showing trade-offs with a number of areas it is not consistently related to one particular grouping. This suggests that its position in the curriculum hierarchy is less clear, once again more 'neutral', than, for example, OSC.

Relationships to resources showed that there was no relationship at the level of overall structure which had anything to do with the marginal status of subjects. On the contrary, the most consistent findings were in Languages and Sciences which showed the provision of more subjects despite worsening PTRs. Advantaged schools provided these subjects at a cost to other areas and this has important ramifications for the notion of

staffing according to 'need', which has had a tendency to be associated with compensation for disadvantaged children

10.3.2 The management of curriculum change and adaptation in the context of central-local relations

The curriculum findings have important implications for curriculum management. But to understand these fully we must first discuss the results with respect to central-local relations.

Chapter 2 showed that the autonomy of teachers in the post-war period was constrained by shared norms and the acceptance of a traditional curriculum structure. There was formal decentralisation from central government but the acceptance of centralisation to a system of assessment and accreditation dominated by university entrance requirements. Because this decentralisation was less formal, it was less obvious and its influence over local curriculum management more insidious. The roles of subjects were defined external to local needs. An ideology of teacher autonomy supported a decentralised, bottom-up notion of curriculum development. Throughout the post-war period LEAs were content to let responsibility for the curriculum devolve to schools. There was little in the way of whole-curriculum planning at either schools or LEA level.

These factors had important consequences for the curriculum. Chapters 8 and 9 presented, for the first time, an analysis of the impact of local autonomy on the curriculum. Chapter 8 focused on variations between the LEAs. It highlighted the striking similarity between the average curriculum profiles of very different LEAs despite the absence of formal national standards. The role of the LEA with respect to the curriculum was shown to be marginal, though this could lead to important minor adaptations. Their influence, as Chapter 8 has shown, has been through particular subjects rather than overall curriculum structures. None of the case study LEAs had well-developed policies for the whole curriculum which had been in place long

enough to have much of an effect. LEA policies have tended to be cross-curricular, for example, equal opportunities or anti-racist policies. Where LEAs do have strengths and weaknesses these tend to relate to individual subject areas.

Far from existing between LEAs, substantial variations in overall curriculum structures exist between individual schools, reflecting the decentralised nature of curriculum development. The magnitude of these differences varied between the subject groupings. In some groupings they were so substantial that they could have serious consequences for the overall balance and breadth of the curriculum. Chapter 9 sought to identify the extent to which these differences represent adaptations to local context and to resources. In general, the overall curriculum structure was found not to be systematically related to either factor.

The lack of a relationship with PTRs may be due to the myriad of factors already discussed which might influence the curriculum, but which could not be taken into account here. The reason for the lack of a relationship between the curriculum and school background may be due to the use of the free school meals indicator. This variable clearly does not capture important elements of the socio-economic characteristics of catchments which might be important elements in shaping local curricula. There is also the problem that aggregation of data to school level means that in socially homogeneous schools adaptation will occur *within* schools, not between them. More generally, there is the problem that further analysis is required to examine the curricula received by different pupils, a point I return to below.

But equally I want to argue that a key reason for the lack of relationships may be the lack of whole curriculum planning on the part of schools which has meant that schools have missed the opportunity provided by local autonomy to adapt their curricula to local circumstances. Devoid of national minimum standards of curriculum entitlement but in thrall to an examination system, a

local variation has come into being which this thesis shows is not related as a whole to local context. The adaptation which does take place occurs at the level of the individual subject rather than overall structure.

This has also meant that change has been piecemeal. As Chapter 8 shows, the overall structure of the curriculum has changed through minor alterations to an existing base. Bringing about shifts in the overall curriculum is thus a slow process. The constraint imposed by tradition has not been equally felt across the curriculum, however, and, as a result, change has been focused in the 'new' areas. Chapters 5 and 8 show that these are predominantly in OSC and EPSC.

The dominance of the traditional curriculum has also meant that change has focused on broadening the opportunities available to pupils for whom the high status curriculum was simply inappropriate. But the process of incremental growth means that there has been a reliance on *extra* resources to *add* changes rather than to alter the existing base. Chapter 9 showed the reliance of the innovation of certain key subjects on resources. Given that change has tended to concentrate on pupils who have been inadequately catered for by the existing qualifications system, it is they who probably stand to lose most in periods of resource constraint.

There are other sound practical reasons why curriculum variation and change have taken the form they have. Wholesale curriculum change is controversial and difficult. It involves entering into the micro-politics of the school. Curriculum change which is piecemeal or which does not attempt to change the overall curriculum structure does not challenge the position of teaching staff, and is much easier. Schools have existing complements of staff with fixed sets of subject specialisms which rule out of court radical changes which would require different complements. In addition, schools operate under physical constraints such as existing room capacities and so on which hamper 'rational' planning.

10.3.3 Implications for the National Curriculum

The 1988 Education Reform Act signalled the advent of the National Curriculum. The National Curriculum involves significant curriculum change on an unprecedented pace and scale. It requires all pupils to receive ten 'foundation subjects' comprising English, mathematics, science, technology (including design), history, geography, music, art, physical education, and, for 11-16 year olds, a modern foreign language. Each of these subjects is required to be taught for a 'reasonable time', which is not specified but which is likely to be tightly constrained by the requirements of the associated programmes of study, attainment targets and assessment arrangements. It is intended that all schools will be fulfilling this requirement by September 1993. It remains to be seen how much of the curriculum will be consumed by the new foundation subjects. The then Secretary of State for Education, Kenneth Baker, commented that it was felt unlikely that schools could provide the National Curriculum in less than 70% of the time available (quoted in Maclure, 1988, p.20).

This thesis has not approached the curriculum in terms of pupil time, but as the expression of school priorities through the deployment of teaching staff. As a result the implications for current changes cannot simply be read off from its findings. However, pupil experience is contained within the calculus employed and the empirical assessments presented in Chapters 8 and 9 have important ramifications.

Firstly, the thesis has illuminated the nature of variations in the curriculum which provides the context into which the National Curriculum is being introduced. It is clear that many schools and LEAs face major shifts in their curricula. In many areas of the curriculum, there has been little in the way of consensus as to the appropriate priority to be accorded to them. Variation at the level of the overall curriculum structure has been shown to be unrelated to broad measures of background in

most cases (Chapter 9), yet there are major differences in balance and breadth between schools. In this context and at this level, the National Curriculum will ensure a minimum degree of entitlement.

However, the National Curriculum omits or downplays the importance of a number of subjects by its classification of subject groups. For example, it omits from its group of foundation subjects the key area termed in this thesis Education for Personal and Social Competence. This is an important area in many schools, absorbing an important and increasing share of teaching resources, especially in Year 5. This is liable to become squeezed as the full ramifications of the Act are felt. Similarly, the field of OSC embraces a multitude of courses and, like EPSC, has been the focus of important development during the 1980s, but its only way into the National Curriculum is through technology. Whither the more vocational subjects? These are likely to be squeezed into a diminished margin. It is important that the most important curriculum changes of the 1980s occurred in two areas which are not adequately embraced by the National curriculum.

Both of these facts will be affected by the new structure of relations between actors which the Act introduces. Much has been made of the idea that LEAs lose power under the Act, and certainly there is little doubt that the Conservative government was intent on wresting power away from Labour authorities in particular. But it is more appropriate to see the Act as bringing about a *redefinition* of the role of the LEA with respect to the curriculum which does involve a loss of power, but a power they had largely foregone for the vast majority of the period up to the 1980s. As we have seen, the 'LEA-effect' on the curriculum is comparatively minor, and not consistent over subject areas. Seen in this way the Act involves a codification and a reinforcing of an existing pattern.

As far as the autonomy of the school is concerned, the Act lays down that schools (through their newly-constituted governing

bodies) can vary the local authority policy on the curriculum which it is now bound to produce. Both are beholden to remain within the terms of the National Curriculum. It remains to be seen how far authorities and schools adapt to local needs. Local authorities will still have powers to express their priorities, but schools' prime role is to stay within the National Curriculum. So long as they do this, they can avoid toeing the LEA line.

In this context of national centralisation and local decentralisation, the margins of the curriculum are likely to assume a new importance. The Act redefines the core of the curriculum in much more explicit terms than the *de facto* core which has existed up until now. This thesis has identified the 'marginal' areas of the curriculum which experience the greatest variability; but this area is far more fuzzy than the new curriculum requires. The margins of the curriculum are an important area where schools can exercise choice, and it is important that these are not lost. However, the results of this thesis suggest that at the level of overall curriculum structure the observed variation in these areas between schools does not show signs of being adapted to local needs. In this context, the other side of the new legislation which gives schools responsibility for their budgets may help to bring about a closer matching of resources to needs. It will ensure that those who provide are also those who spend.

10.4 Areas for further study

Clearly in a large research study such as this a range of further areas for study can be developed. Attention here is directed to two important developments.

First, this thesis has begun to unweave the complexities of variations in resources, unit costs and the curriculum. The nature of variation in the curriculum in particular has previously been largely a 'black box'. Chapter 3 argued the need for a hierarchical research design which moved down the

levels of the service from government to LEAs to schools. Moving between these levels I have been able to highlight the key aspects of variations in educational opportunities. The level and the type of analysis employed have been mutually reinforcing. But one level has not been analysed: variations within the school. This is justified by the presence of a considerable tradition of educational research at school level. Hence the approach adopted here goes some way to restore the balance to the other levels. Engaging in analysis at school level would have been a useful complement to the research in this thesis, but would entail a whole panoply of different research methods beyond the scope of the present thesis. However, it is clear that whilst the thesis has disclosed the nature of educational variation between schools and LEAs, it has not revealed the nature of differences in the educational opportunities actually experienced by children in the classroom. A complementary analysis of a sample of schools could examine the role of local factors in shaping resource, cost and curriculum patterns. Below that, the analysis of pupils within a school could reveal which pupils (able/less able, boys/girls etc.) are concentrated in which parts of the curriculum. This could be a major area of future research.

The research presented here has been an analysis of an important period of change in education, but it has also set a benchmark before the period of more radical restructuring which education now finds itself in. The methods of analysis used here are going to become important for monitoring the management of the curriculum and resources in the light of the Education Reform Act. A replication and development of the type of analysis carried out here, mid-way through the 1990s, will reveal the magnitude of the changes wrought on the post-war education system. This would be a major contribution to longitudinal study and would allow comment on the effects and effectiveness of the National Curriculum and associated reforms through the Education Reform Act.

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APPENDIX 1 Postal Questionnaire Survey

LSE **Department of Geography, Houghton Street, London WC2A 2AE**

DEVELOPMENTS IN THE MANAGEMENT OF SCHOOLS, 1979/80 - 1986/87: SCHOOLS SURVEY

For office use

Name of your school: _____

Your name: _____

When did you become head of this school?: _____

Section A
General background information
(1) When was your school built? ☐

(2) What was it *originally* built as? (Tick one box)

(a) a comprehensive . . . . . ☐
(b) a grammar school . . . . . ☐
(c) a technical school . . . . . ☐
(d) a secondary modern school . . . . . ☐
(e) other (specify) _____ ☐

(3) Please indicate which of the following your school possesses, and who has most contact with the pupils in a pastoral capacity (tick one or more boxes):

	Yes	No	Most pastoral contact
(a) deputy head(s) with a pastoral bias	☐	☐	☐
(b) deputy head(s) with a curriculum bias	☐	☐	☐
(c) heads of upper, middle and lower schools	☐	☐	☐
(d) heads of years	☐	☐	☐
(e) assistants to year heads	☐	☐	☐
(f) heads of houses	☐	☐	☐
(g) assistants to heads of houses	☐	☐	☐

Section B
Parental involvement
(1) Does your school have (tick one or more boxes):

(a) a Parent-Teacher Association . . . . . ☐
(b) a Parents' Association . . . . . ☐
(c) neither . . . . . ☐

IF (c) go to (2)
IF (a) or (b):

(i) In which year was it/were they founded? PTA ☐ PA ☐

(ii) What proportion of parents belong to it/them? PTA ☐ % PA ☐ %

(iii) How often does the main committee(s) meet? PTA ☐ PA ☐

(iv) How important has each of the following PTA/PA activities been to the life of your school since about 1979/80? (For each activity tick one box for importance, and state its ranking, most important numbered "1").

	Very important	Important	Not important	Ranking	For office use
(1) accompanying children on school trips					
(2) coordinated assistance with school work at home					
(3) assistance within school with academic work					
(4) assistance with extra-curr. activities					
(5) repairs to premises					
(6) decoration of premises					
(7) extension to premises					
(8) raising finance					
(9) other (specify)					

(2) Please give the total financial contributions received from parents in the following school years. If exact figures are not known please make an estimate:

1979/80	1982/3	1986/7
£	£	£

(3) Please state the approximate proportion of parents' direct financial contribution received through each of the following means in the 1986/7 school year:

	Approx. %
(a) by ad hoc donations	
(b) through a suggested minimum annual contribution (inc. covenants)	
(c) through special events/activities	

(4) Please give an estimate (in £s) of how parents' financial contributions were spent in 1979/80, 1982/3 and 1986/7 under the following headings (IF exact figures are not known, please give EITHER approximate proportions OR rank the categories in order of importance with the category accounting for most expenditure numbered "1". A mixture of rankings, proportions and figures, depending on the year, is acceptable):

	1979/80	1982/3	1986/7
(1) equipment			
(2) books			
(3) materials			
(4) premises			
(5) school visits			
(6) other (specify) _____			

(5) Please state the approximate proportion of parents attending your governors meeting during the summer term 1987:

	%

(6) How has the level of general parental interest changed since 1979/80? *

Major increase	Minor increase	No change	Minor decrease	Major decrease

*or, if you have not been head for long enough to make this assessment, from as early a date as possible (please

For office use

(7) It is important for this study to obtain an indication of the socio-economic background of your pupil intake. We believe a head teacher is in a good position to give such an assessment. Please describe the types of family background from which your pupil intake is drawn, referring, for example, to unemployment levels, the relative proportions of parents in manual, clerical and professional jobs, ethnicity, the impact of recent housing developments:

(8) What percentage of your first year intake do you estimate to have a reading age greater than 12 years?

[ ] %

Section C

Resources and the curriculum

(1) How would you describe the state of repair of the following components of your school's building stock at the given dates:

	1979/80 *					1986/7				
	Very Poor	Poor	Average	Good	Very Good	Very Poor	Poor	Average	Good	Very Good
(a) external repairs										
(b) internal decoration										
(c) furniture										
(d) hall										
(e) toilets										
(f) classrooms										
(g) workshops/craft rooms										
(h) laboratories										
(i) home economics rooms										
(j) art studios										
(k) gyms										
(l) changing rooms										

(2) Please indicate for each of the subject areas given below **firstly**, your assessment of the adequacy of the QUANTITIES of APPROPRIATE books and equipment/materials available IN THE 1986/7 SCHOOL YEAR (tick one box for books and one box for equipment/materials); and **secondly**, whether the situation has improved, worsened or not changed since the LATE 1970s. *

Note: Maths=Maths studies and includes computing; P&L=Physical and Leisure activities; EPSC=Education for Personal and Social Competence and includes home economics; Occup.= Occupational Skills & Crafts - inc. technology; Aesthetic=Art, Music, Drama etc.

	BOOKS						EQUIPMENT/MATERIALS					
	Below average	Average	Above average	Improved	Worsened	No change	Below average	Average	Above average	Improved	Worsened	No change
English												
Maths												
Humanities												
RE												
Languages												
Sciences												
P&L												
Occup.												
EPSC												
Aesthetic												

*or, if you have not been head for long enough to make this assessment, from as early a date as possible (please state).

(3) How many of the following different sorts of micro-computers does your school possess?

For office use

BBC ☐ RML ☐ IBM/Compatible ☐

Other_____ ☐ Other_____ ☐

(4) Please outline briefly your options scheme for fourth and fifth year pupils, indicating in particular the form of any core/options division, the nature of guidance offered and any rules regarding subject choice. (If preferred, include a copy of any booklets that are issued for parents and pupils).

Section D

Resource allocation procedures and school organisation

(1) How did you gather the information used to distribute capitation allowance within your school in the years given? (Tick one or more boxes for each year)

	1979/80 *	1986/7
(a) through informal soundings from department heads alone	☐	☐
(b) through informal soundings from department heads and other staff	☐	☐
(c) through formal 'bids' from department heads	☐	☐
(d) through the systematic collection of quantitative measures of needs for use in a formula	☐	☐
(e) through a combination of all or some of these depending on the item of expenditure	☐	☐
(f) other (please specify) _____	☐	☐

IF (d) or (e), please give details:

(2) What criteria did you use in the final allocation of capitation? (Tick one or more boxes for each year)

	1979/80 *	1986/7
(a) percentage additions to historical patterns	☐	☐
(b) qualitative assessments of the needs of departments and the priorities of the school as a whole	☐	☐
(c) response to individual needs	☐	☐
(d) quantified measures of need in a formula	☐	☐
(e) other (please specify)_____	☐	☐

*or, if you have not been head for long enough to make this assessment, from as early a date as possible (please state).

(3) Please estimate how YOUR capitation budget (i.e. that over which you exercise discretion in allocation) broke down into the following areas in the 1986/7 school year (state the proportion of the total budget accounted for by each area); and also indicate if the share of each area has increased, decreased or stayed the same since 1979/80.* The answer to this question is MOST IMPORTANT. Please complete as fully as possible:

	1986/87 %	Since 1979/80 * Decrease	No change	Increase	For office use
Centrally held fund					
English					
Maths. studies (inc. computing)					
Humanities					
RE					
Languages					
Sciences					
Physical and leisure activities					
Occupational Skills and Crafts (inc. technology)					
Education for Personal and Social Competence (inc. home economics)					
Aesthetic					

(4) Please indicate for each of the following areas whether a committee exists and, if so, its name, chairman (e.g. head, deputy head etc.), composition (e.g. all teachers, department heads, deputy heads etc.), and how often it meets:

	Yes	No	Name	Chair	Composition	Frequency of meetings
(a) appointments and promotions						
(b) use of parental funds						
(c) allocation of staff to classes						
(d) allocation of capitation						
(e) curriculum design for whole school						
(f) general aims and policies						
(g) extra-curricular activities						

(5) How would you describe your role in these meetings?

*or, if you have not been head for long enough to make this assessment, from as early a date as possible (please state).

For office use

(6) Please state below the names of departments and/or faculties, indicating the subjects within each department, and, if applicable, which departments are covered by which faculties.

FACULTIES	DEPARTMENTS	SUBJECTS

(7) (i) How often do department and/or faculty heads have formal meetings with *their* departmental/faculty staff?

	Department	Faculty
(a) once a week		
(b) once a fortnight		
(c) once every half-term		
(d) once a term		
(e) irregularly		
(f) varies according to department/faculty		
(g) other (specify)_____		

(ii) What are the functions of these meetings? (Tick one or more boxes)

	Department	Faculty
(a) curriculum design		
(b) allocation of capitation		
(c) allocation of staff		
(d) identification of resource/staffing needs		
(e) formulation of policy on teaching and learning methods		
(f) stock and equipment ordering		
(g) other (specify)_____		

(8) (i) How often did you meet your entire governing body during the 1986/7 school year? ☐

(ii) What areas are covered by the governing body?

(a) curriculum development	
(b) allocation of staff	
(c) allocation of capitation	
(d) allocation of premises space	
(e) other (please specify)_____	

(iii) Are these areas covered by sub-committees? Yes ☐ No ☐

IF yes please name them:

APPENDIX 2

Repricing Factors

Factors for Repricing Current Expenditure at Survey Prices

1977	100.00
1978	108.52
1979	119.48
1980	137.40
1981	170.79
1982	188.27
1983	200.80
1984	210.08
1985	218.15
1986	231.95
1987	248.10

Source: Association of County Councils, *Rate Support Grant (England) 1987/88*, Table J

Factors for Repricing Education Expenditure at Outturn Prices.

	Total education	Secondary & Primary factors:		
		Teachers	Books & equipment	Premises
1977	1.0000	N/A	N/A	N/A
1978	1.0928	N/A	N/A	N/A
1979	1.2345	N/A	N/A	N/A
1980	1.5367	1.0000	1.0000	1.0000
1981	1.7185	1.1037	1.1231	1.1578
1982	1.8351	1.1682	1.2091	1.2651
1983	1.9254	1.2264	1.2779	1.3294
1984	2.0124	1.2889	1.3518	1.3899
1985	2.1287	1.3778	1.4284	1.4780
1986	2.2810	1.5088	1.4985	1.5154

Sources:

Column 1: Association of County Councils, *Rate Support Grant (England) 1987/88*, Table I.
Columns 2-4: Lincolnshire County Council, Treasurer's Department.

APPENDIX 3 Subject listing

1	A	Aesthetic	Art
2	Ac	Maths. studies	Accounts
3	Ad	Aesthetic	Art & Design
4	Aes	Aesthetic	Aesthetics
5	Ag	OSC	Agriculture
6	AgS	Sciences	Agricultural science
7	Ah	OSC	Animal husbandry
8	AH	Aesthetic	Art history
9	Ak	Cross-curr.	General activities
10	Arch	Humanities	Archaeology
11	As	EPSC	Assembly
12	At	OSC	Architecture
13	ATx	Aesthetic	Art textiles
14	AuEn	OSC	Automobile engineering
15	Aw	EPSC	Active tutorial work
16	Ay	Sciences	Astronomy
17	B	Sciences	Biology
18	Bd	OSC	Building
19	Bg	Humanities	British government
20	Bh	Sciences	Human Biology
21	Bis	Humanities	British industrial society
22	Bs	OSC	Business studies
23	C	Sciences	Chemistry
24	Ca	EPSC	Careers
25	Car	EPSC	Caring
26	Cb	OSC	Combined materials
27	Cc	EPSC	Child care
28	Cd	OSC	Craft & Design
29	CDT	OSC	CDT
30	Ce	EPSC	Consumer education
31	Cer	Aesthetic	Ceramics
32	Cg	OSC	Catering
33	Ch	EPSC	Child studies
34	Ci	OSC	Communication & IT
35	Ck	EPSC	Cookery
36	Cm	English studies	Communication studies/skills
37	Cn	EPSC	Cookery and nutrition
38	Co	OSC	Commerce
39	Comm	EPSC	Community care/service/wk
40	Comp.	Humanities	Comparative studies
41	Con	OSC	Construction
42	Cont	Lang.	Continental studies
43	Cp	Maths. studies	Computer studies,awareness,lit.
44	CPVE	OSC	Cert. of Pre-vocational Education
45	Cr	OSC	Craft
46	CrTk	OSC	Craft Technology
47	Cs	Languages	Classical studies
48	Ct	OSC	Chemical technology
49	CTk	OSC	Control technology
50	Cu	Humanities	Current affairs
51	Cy	EPSC	Community studies or skills
52	D	OSC	Design
53	D&C	OSC	Design & Communication
54	D&R	OSC	Design & Realisation
55	Dc	OSC	Design & craft
56	DIY	EPSC	Do-it-yourself
57	Dl	EPSC	Design for living
58	Dn	Aesthetic	Dance
59	Dom	EPSC	Domestic science
60	Dr	Aesthetic	Drama
61	Ds	Humanities	Development studies
62	Dt	OSC	Design technology
63	E	English studies	English
64	E2L	Languages	English as a second language
65	Ec	Humanities	Economics
66	EcSH	Humanities	Economic & social history
67	Ed	OSC	Engineering drawing
68	El	OSC	Electrical engineering

69	Em	EPSC	Embroidery
70	En	OSC	Engineering
71	EnS	Sciences	Engineering science
72	Ep	EPSC	Enterprise
73	EPA	Humanities	Economic and Public Affairs
74	Es	Sciences	Environmental sciences
75	Et	Languages	Language service groups
76	Eu	Languages	European studies
77	Ev	Humanities	Environmental studies
78	Ex	Sciences	Electronics
79	ExA	Aesthetic	Expressive arts
80	F	Languages	French
81	Fa	EPSC	First Aid
82	Fb	OSC	Fashion & Fabric
83	FCc	EPSC	Family and community care
84	Fd	EPSC	Food
85	Fi	P & L	Fitness
86	Fl	Languages	Foreign lang. (unspecified)
87	Fm	P & L	Film studies
88	Fn	EPSC	Food and nutrition
89	Foot.	P & L	Football
90	Fp	EPSC	Form period
91	Fs	Languages	French studies
92	Ft	OSC	Fashion and Textiles
93	Fu	OSC	Furniture design
94	G	Humanities	Geography
95	Ga	P & L	Games
96	Gc	OSC	Graphical communication
97	Gd	EPSC	Gardening
98	Ge	Languages	German studies
99	Gk	Languages	Greek
100	Gm	Languages	German
101	Go	Sciences	Geology
102	Govt	Humanities	Government
103	Gp	Humanities	Government and politics
104	Gr	Languages	Modern Greek
105	Gs	Cross-curr.	General studies
106	Gt	OSC	Graphical technology
107	Gu	EPSC	Guidance
108	Guj	Languages	Gujerati
109	Gv	Humanities	Govt.,econ. and commerce
110	Gx	OSC	Graphics
111	GxD	OSC	Graphic design
112	H	Humanities	History
113	Hd	Languages	Hindi
114	He	EPSC	Health education
115	Hf	EPSC	Home and Family
116	Hk	EPSC	Home economics
117	Hl	Humanities	Local History
118	Hm	EPSC	Home maintenance/management
119	Ho	Sciences	Horticulture
120	Hs	EPSC	Home skills
121	Hu	Humanities	Humanities
122	I	Languages	Italian
123	Ic	OSC	Understanding ind. & comm.
124	Id	Cross-curr.	Inter-disciplinary inquiry
125	Init.	Cross-curr.	Initiative
126	Ip	OSC	Information processing
127	Is	Humanities	Integrated studies
128	It	OSC	Information technology
129	Kb/Ks	OSC	Keyboarding
130	Kn	EPSC	Knowing myself
131	L	Languages	Latin
132	La	Languages	Language studies
133	Law	Humanities	Law
134	Lc	Languages	Latin with classical studs.
135	Le	P & L	Leisure, leisure pursuits
136	Li	Cross-curr.	Use of library

137	Libe	EPSC	Liberal studies
138	LiCr	Aesthetic	Light crafts (jewellery etc.)
139	Literacy	English studies	Literacy
140	Ls	EPSC	Life skills
141	Lt	English studies	Literature
142	M	Maths. studies	Mathematics
143	Ma	Science	Materials science
144	MaC	Sciences	Materials chemistry
145	Mass	Aesthetic	Mass communications
146	Mc	OSC	Commercial maths.
147	Mcs	Rm/Sn	Multi-cultural support
148	Med	Humanities	Media studies
149	MEx	OSC	Micro-electronics
150	Mf	Maths. studies	Further maths.
151	Micro	OSC	Micro-processor control
152	Mk	OSC	Metalwork
153	Mm	Humanities	Mass media studies
154	Mo	Cross-curr.	Modular studies
155	Model making	Aesthetic	Model Making
156	Money matters	EPSC	Money matters
157	Mp	Cross-curr.	Modular pursuits
158	Ms	Maths. studies	Maths. with statistics
159	Mu	Aesthetic	Music
160	Mv	OSC	Motor vehicle studies/crafts
161	Nk	EPSC	Needlework
162	Num	Maths. studies	Numeracy
163	Nurse	OSC	Nursing
164	O	OSC	Office practice
165	Oe	P & L	Outdoor education
166	Orch	Aesthetic	Orchestra
167	Ot/Op	OSC	Office practice with typing
168	Ou	P & L	Outdoor activities or pursuits
169	P	Sciences	Physics
170	Pa	EPSC	Parentcraft
171	PBF	OSC	Personal & business finance
172	Pc	Sciences	Physics with chemistry
173	Pe	P & L	Physical education
174	Perf.	Aesthetic	Performing arts
175	Pg	Humanities	Political & govt. studies
176	Ph	P & L	Photography
177	Pi	Aesthetic	Printing
178	Pl	OSC	Plastics
179	Po	Aesthetic	Pottery
180	Pp	P & L	Physical pursuits
181	Pr	Cross-curr.	Project work or private study
182	Prac.	OSC	Practical studies
183	Profile	EPSC	Profiling
184	Ps	Sciences	Psychology
185	PSD or PSE	EPSC	Personal & Social Devel.
186	Pu	Languages	Punjabi
187	R	Languages	Russian
188	Re	Religious studies	Religious education
189	Rm	Cross-curr.	Remedial
190	Ro	P & L	Rowing
191	Rob	OSC	Robotics
192	Rs	Sciences	Rural studies/science
193	S	Sciences	Science
194	S&M	Aesthetic	Sound and movement
195	Sa	Humanities	Social administration
196	SCIP	OSC	Schools Council Industry Project
197	Se	EPSC	Social education
198	SEc	Humanities	Social economics
199	Sf	Science	Further science
200	Sh	OSC	Shorthand
201	Si	OSC	Silversmithing
202	Sk	Science	Science at work
203	Sn	Rm/SN	Special needs
204	So	Humanities	Sociology

205	SocHe	EPSC	Social and health education
206	Sp	Languages	Spanish
207	Sph	Humanities	Social philosophy
208	Ss	Humanities	Social studies/science
209	SSoc	Sciences	Science in society
210	St	OSC	Shorthand and typing
211	Stats.	Maths. studies	Statistics
212	Study skills	Cross-curr.	Study skills
213	Su	Cross-curr.	Supervision
214	Sw	P & L	Swimming
215	Sx	P & L	Sports studies
216	T	OSC	Typewriting
217	T&W	OSC	Typing & word processing
218	Td	OSC	Technical drawing
219	Te	EPSC	Traffic education
220	Tg	Cross-cur.	Thinking
221	TG	OSC	Technical graphics
222	Th	Aesthetic	Theatre studies
223	Tk	OSC	Technology
224	Tm	EPSC	Toy making
225	Tp	EPSC	Tutor period
226	Ts	OSC	Technical science
227	TT	OSC	Technical topics
228	Tv	P & L	Television studies
229	Tx	OSC	Textiles
230	U	Languages	Urdu
231	Va	Aesthetic	Visual arts
232	Vc	Aesthetic	Visual communication
233	Vi	EPSC	Viewpoint
234	Vis	Cross-curr.	Visits
235	Wc	Humanities	World & comm. studies
236	We	OSC	Work experience
237	Wk	OSC	Woodwork
238	World of work	OSC	World of work
239	Wp	OSC	Word processing
240	Ws	Humanities	World studies

APPENDIX 4 Cambridgeshire: subject grouping frequency distributions, Years 1, 3 and 5

YEAR 1

Histogram of ENG

Midpoint	Count	
8.00	3	***
10.00	20	********************
12.00	8	********
14.00	6	******
16.00	3	***
18.00	0	
20.00	1	*

Histogram of MATH

Midpoint	Count	
10.00	7	*******
12.00	17	*****************
14.00	14	**************
16.00	3	***

Histogram of RE

Midpoint	Count	
0.00	12	************
2.00	9	*********
4.00	18	******************
6.00	2	**

Histogram of HUM

Midpoint	Count	
6.00	1	*
8.00	8	********
10.00	10	**********
12.00	9	*********
14.00	10	**********
16.00	3	***

Histogram of LANG

Midpoint	Count	
6.00	2	**
8.00	15	***************
10.00	12	************
12.00	7	*******
14.00	4	****
16.00	0	
18.00	1	*

Histogram of SCI

Midpoint	Count	
6.00	2	**
8.00	13	*************
10.00	16	****************
12.00	5	*****
14.00	5	*****

Histogram of P&L

Midpoint	Count	
6.00	2	**
8.00	13	*************
10.00	17	*****************
12.00	8	********
14.00	1	*

Histogram of AESTH

Midpoint	Count	
6.00	2	**
8.00	7	*******
10.00	14	**************
12.00	11	***********
14.00	5	*****
16.00	2	**

Histogram of EPSC

Midpoint	Count	
0.00	2	**
2.00	5	*****
4.00	8	********
6.00	13	*************
8.00	3	***
10.00	6	******
12.00	3	***
14.00	0	
16.00	1	*

Histogram of OSC

Midpoint	Count	
2.00	2	**
4.00	12	************
6.00	12	************
8.00	4	****
10.00	7	*******
12.00	3	***
14.00	0	
16.00	0	
18.00	1	*

Histogram of X-CURR

Midpoint	Count	
0.00	36	************************************
2.00	4	****
4.00	1	*

Histogram of RM

Midpoint	Count	
0.00	2	**
2.00	4	****
4.00	4	****
6.00	10	**********
8.00	7	*******
10.00	6	******
12.00	6	******
14.00	0	
16.00	1	*
18.00	0	
20.00	1	*

APPENDIX 4 contd.

YEAR 3

Histogram of ENG

```
Midpoint   Count
    8.00       4  ****
   10.00      14  **************
   12.00      13  *************
   14.00       8  ********
   16.00       2  **
```

Histogram of MATH

```
Midpoint   Count
    8.00       3  ***
   10.00       9  *********
   12.00      17  *****************
   14.00       9  *********
   16.00       2  **
   18.00       1  *
```

Histogram of RE

```
Midpoint   Count
    0.00       7  *******
    2.00      11  ***********
    4.00      22  **********************
    6.00       1  *
```

Histogram of HUM

```
Midpoint   Count
    6.00       3  ***
    8.00       7  *******
   10.00      13  *************
   12.00       8  ********
   14.00       6  ******
   16.00       2  **
   18.00       2  **
```

Histogram of LANG

```
Midpoint   Count
    6.00       2  **
    8.00       1  *
   10.00      11  ***********
   12.00      12  ************
   14.00       9  *********
   16.00       4  ****
   18.00       1  *
   20.00       1  *
```

Histogram of SCI

```
Midpoint   Count
    8.00       1  *
   10.00       4  ****
   12.00       8  ********
   14.00      21  *********************
   16.00       4  ****
   18.00       2  **
   20.00       1  *
```

Histogram of P&L

Midpoint	Count	
4.00	1	*
6.00	9	*********
8.00	12	************
10.00	17	*****************
12.00	2	**

Histogram of AESTH

Midpoint	Count	
4.00	4	****
6.00	4	****
8.00	15	***************
10.00	14	**************
12.00	1	*
14.00	3	***

Histogram of EPSC

Midpoint	Count	
0.00	1	*
2.00	4	****
4.00	11	***********
6.00	8	********
8.00	8	********
10.00	3	***
12.00	3	***
14.00	2	**
16.00	1	*

Histogram of OSC

Midpoint	Count	
4.00	6	******
6.00	13	*************
8.00	10	**********
10.00	3	***
12.00	4	****
14.00	3	***
16.00	1	*
18.00	1	*

Histogram of X-CURR

Midpoint	Count	
0.00	40	**
2.00	0	
4.00	0	
6.00	1	*

Histogram of RM

Midpoint	Count	
0.00	6	******
2.00	7	*******
4.00	11	***********
6.00	9	*********
8.00	3	***
10.00	3	***
12.00	1	*
14.00	0	
16.00	1	*

APPENDIX 4 contd.

YEAR 5

```
Histogram of ENG

Midpoint   Count
    8.00       3  ***
   10.00      11  ***********
   12.00      16  ****************
   14.00      10  **********
   16.00       1  *


Histogram of MATH

Midpoint   Count
    8.00       1  *
   10.00       7  *******
   12.00      12  ************
   14.00      12  ************
   16.00       8  ********
   18.00       1  *


Histogram of RE

Midpoint   Count
    0.00      18  ******************
    2.00      19  *******************
    4.00       3  ***
    6.00       1  *


Histogram of HUM

Midpoint   Count
    6.00       1  *
    8.00       4  ****
   10.00       5  *****
   12.00      16  ****************
   14.00       8  ********
   16.00       6  ******
   18.00       1  *


Histogram of LANG

Midpoint   Count
    4.00       7  *******
    6.00      12  ************
    8.00      12  ************
   10.00       5  *****
   12.00       4  ****
   14.00       1  *


Histogram of SCI

Midpoint   Count
   10.00       1  *
   12.00       6  ******
   14.00      13  *************
   16.00      10  **********
   18.00       7  *******
   20.00       3  ***
   22.00       1  *
```

Histogram of P&L

Midpoint	Count	
4.00	8	********
6.00	19	*******************
8.00	11	***********
10.00	2	**
12.00	1	*

Histogram of AESTH

Midpoint	Count	
2.00	1	*
4.00	7	*******
6.00	18	******************
8.00	11	***********
10.00	3	***
12.00	1	*

Histogram of EPSC

Midpoint	Count	
4.00	2	**
6.00	3	***
8.00	8	********
10.00	11	***********
12.00	9	*********
14.00	3	***
16.00	0	
18.00	4	****
20.00	1	*

Histogram of OSC

Midpoint	Count	
4.00	1	*
6.00	2	**
8.00	6	******
10.00	11	***********
12.00	12	************
14.00	4	****
16.00	3	***
18.00	0	
20.00	0	
22.00	1	*
24.00	1	*

Histogram of X-CURR

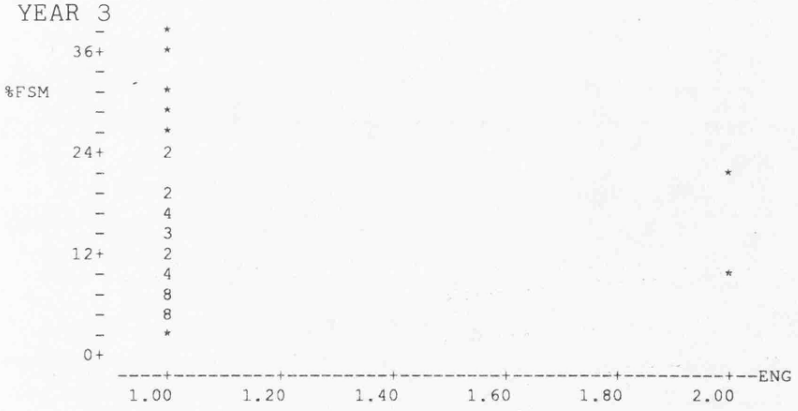
Midpoint	Count	
0.00	33	**********************************
2.00	1	*
4.00	2	**
6.00	4	****
8.00	0	
10.00	1	*

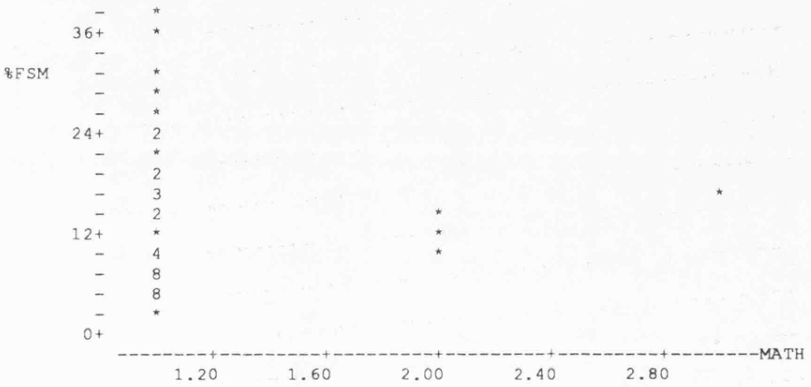
Histogram of RM

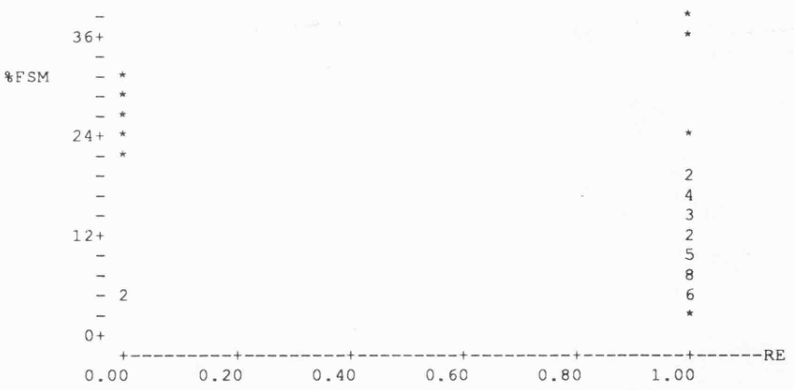
Midpoint	Count	
0.00	15	***************
2.00	11	***********
4.00	14	**************
6.00	0	
8.00	1	*

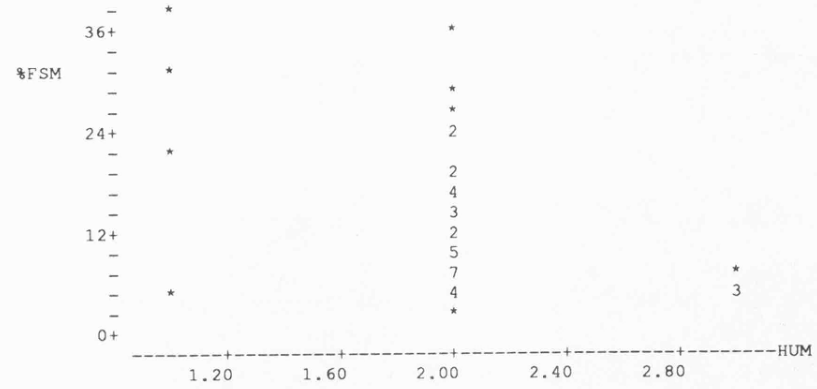
APPENDIX 5 Cambridgeshire: numbers of subjects in each subject grouping versus score on FSM variable, Years 3 and 5

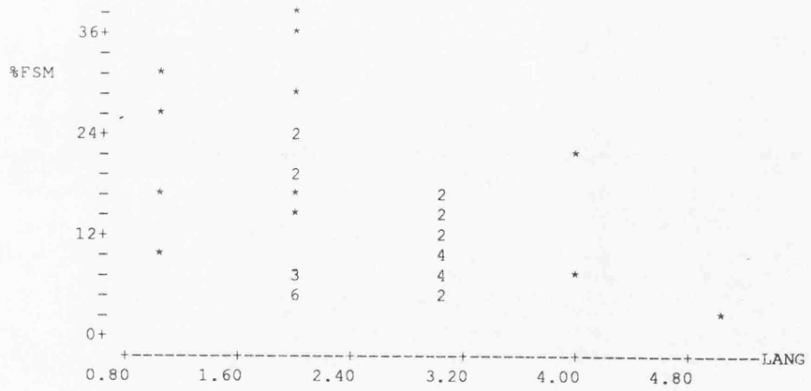
YEAR 3







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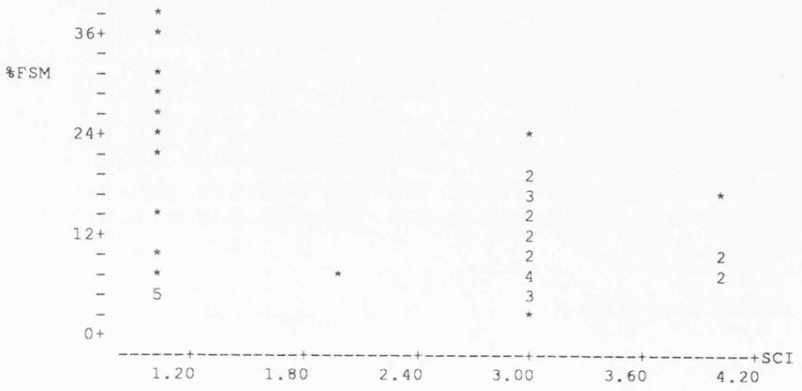
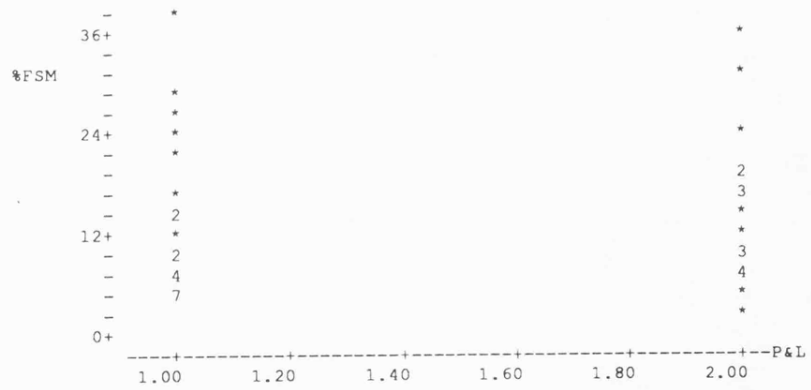
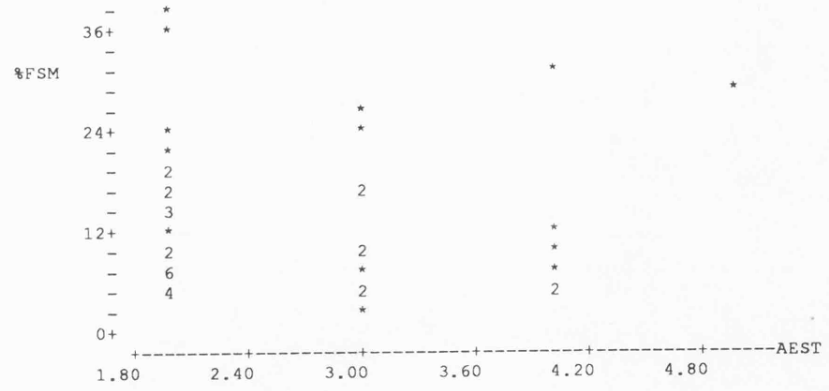
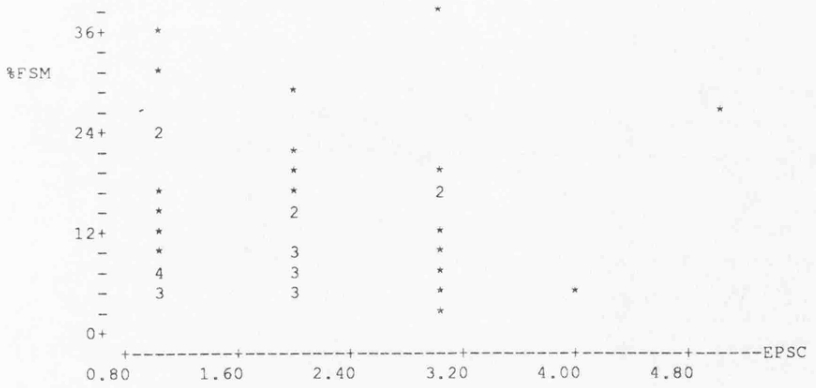
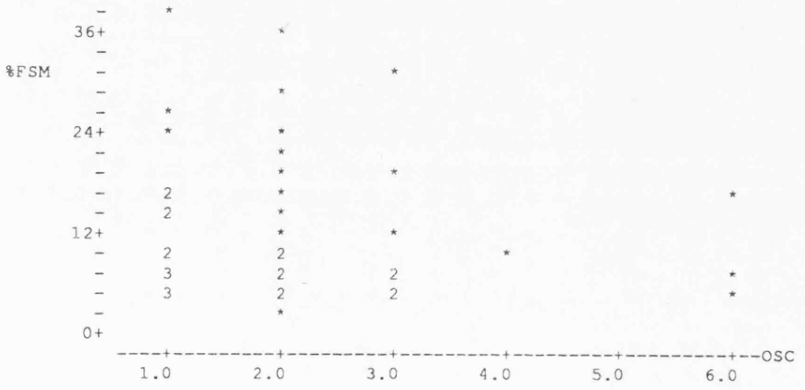
36+
24+
12+
0+
0.80
1.60
2.40
3.20
4.00
4.80
LANG

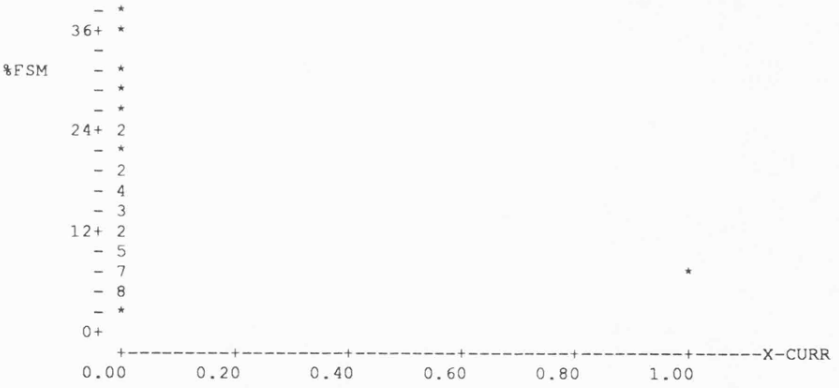

%FSM
36+
24+
12+
0+
1.20
1.80
2.40
3.00
3.60
4.20
SCI


%FSM
36+
24+
12+
0+
1.00
1.20
1.40
1.60
1.80
2.00
P&L


%FSM
36+
24+
12+
0+
1.80
2.40
3.00
3.60
4.20
4.80
AEST


%FSM
36+
24+
12+
0+
0.80
1.60
2.40
3.20
4.00
4.80
EPSC


%FSM
36+
24+
12+
0+
1.0
2.0
3.0
4.0
5.0
6.0
OSC


%FSM
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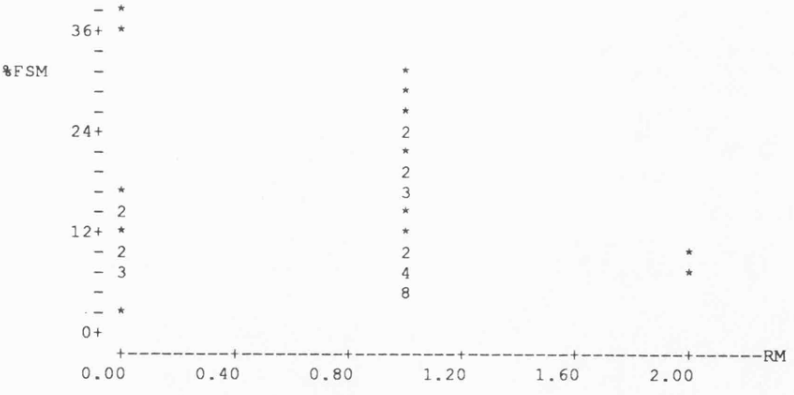
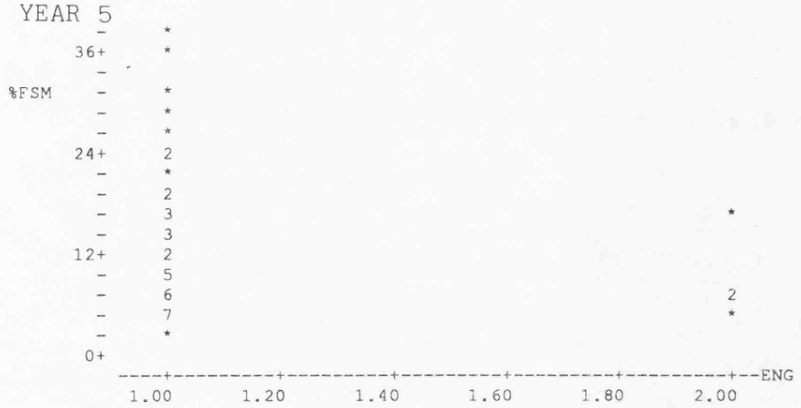
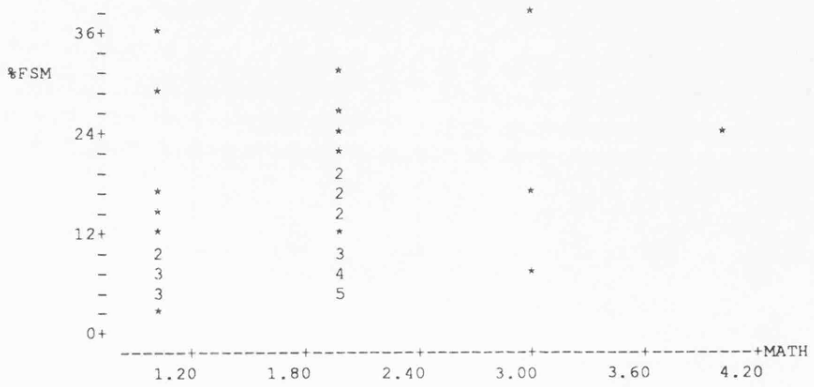
24+
12+
0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

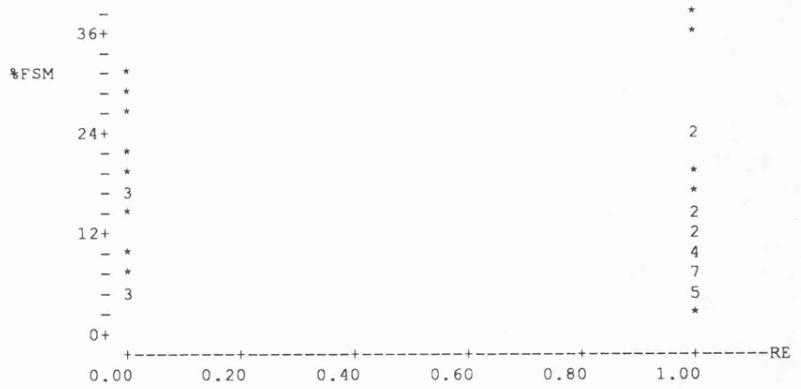

%FSM
36+
24+
12+
0+
0.00
0.40
0.80
1.20
1.60
2.00
RM

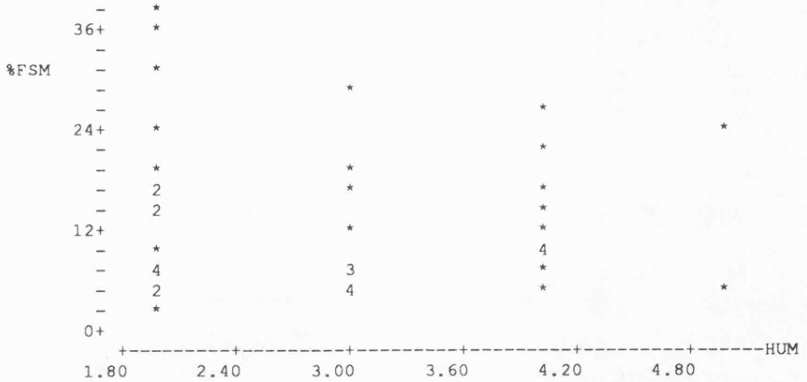
APPENDIX 5 contd.

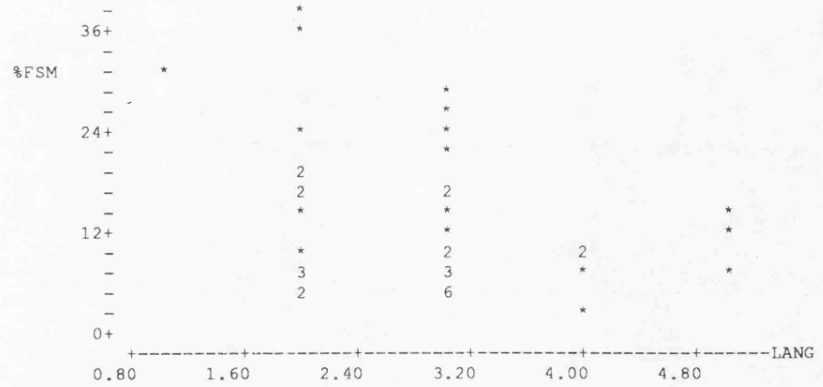
YEAR 5







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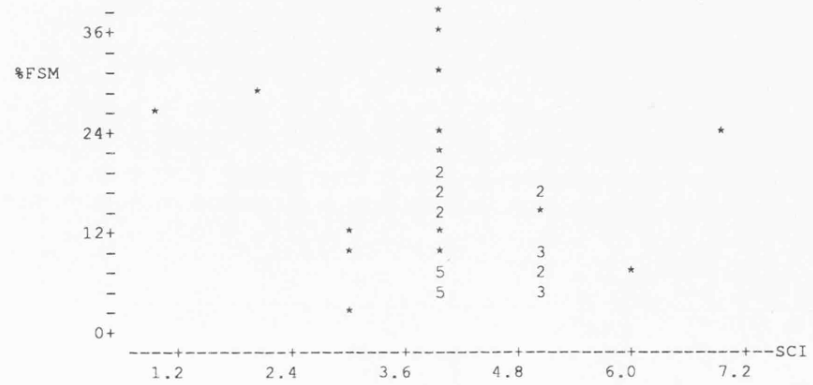
24+
12+
0+
0.80
1.60
2.40
3.20
4.00
4.80
LANG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2.4
3.6
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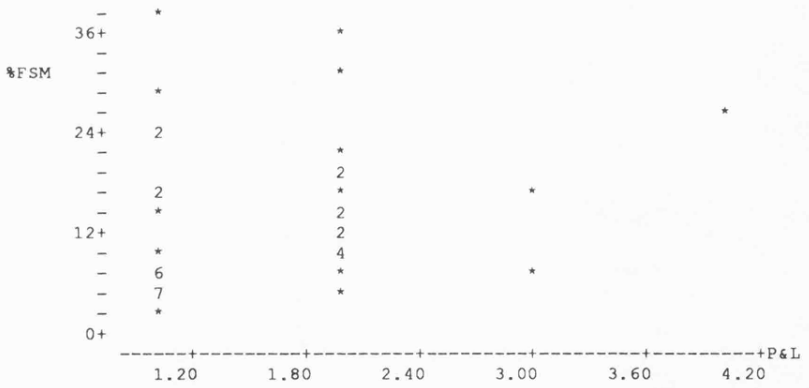
7.2
SCI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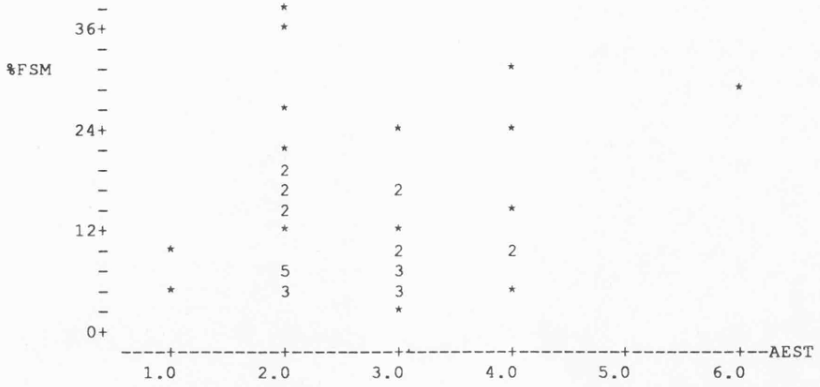
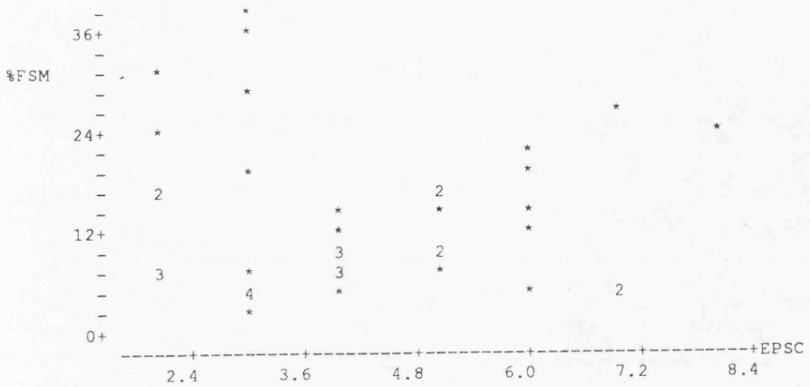
24+
12+
0+
1.20
1.80
2.40
3.00
3.60
4.20
P&L


%FSM
36+
24+
12+
0+
1.0
2.0
3.0
4.0
5.0
6.0
AEST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24+
12+
0+
+EPSC
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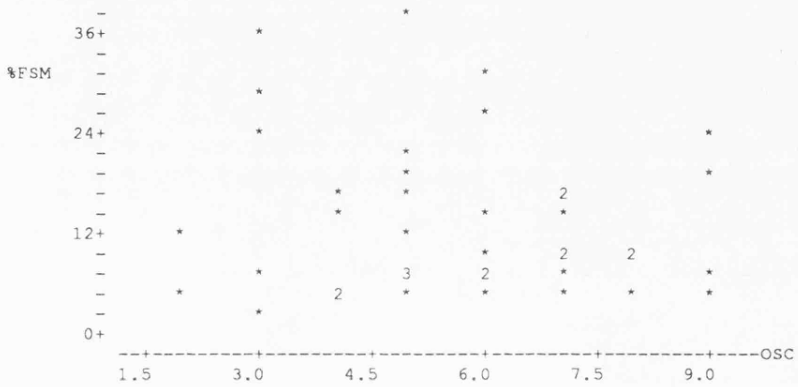
3.6
4.8
6.0
7.2
8.4


%FSM
36+
24+
12+
0+
----OSC
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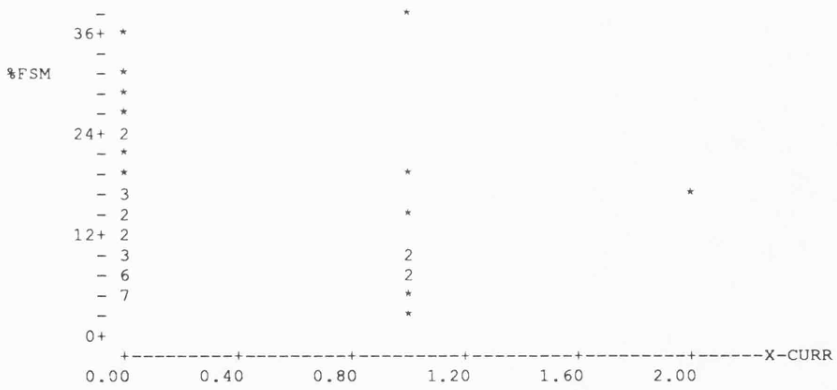
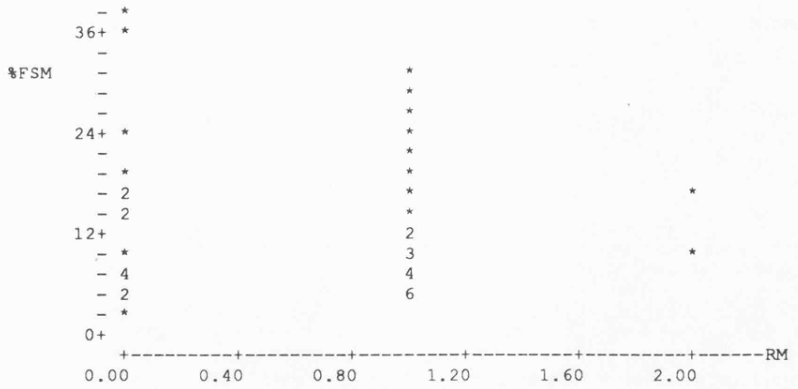
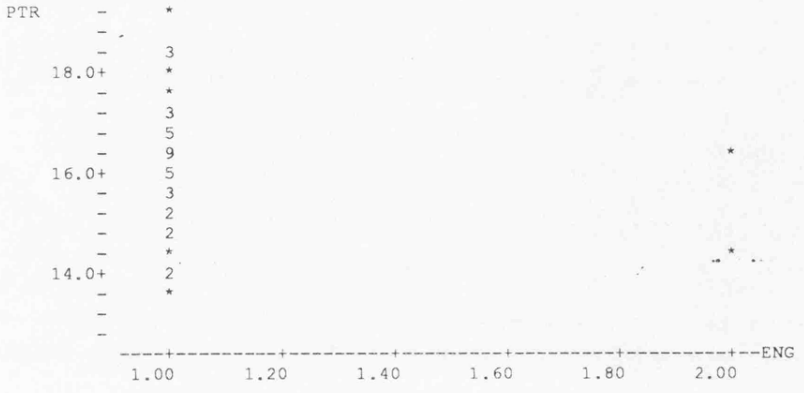
3.0
4.5
6.0
7.5
9.0

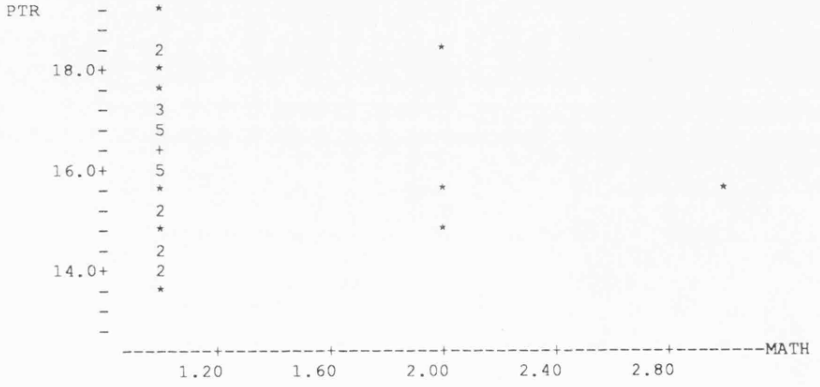

%FSM
36+
24+
12+
0+
------X-CURR
0.00
0.40
0.80
1.20
1.60
2.00

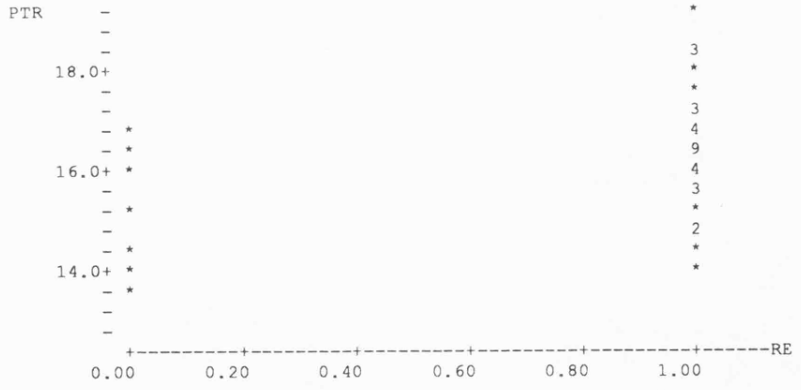

%FSM
36+
24+
12+
0+
------RM
0.00
0.40
0.80
1.20
1.60
2.00

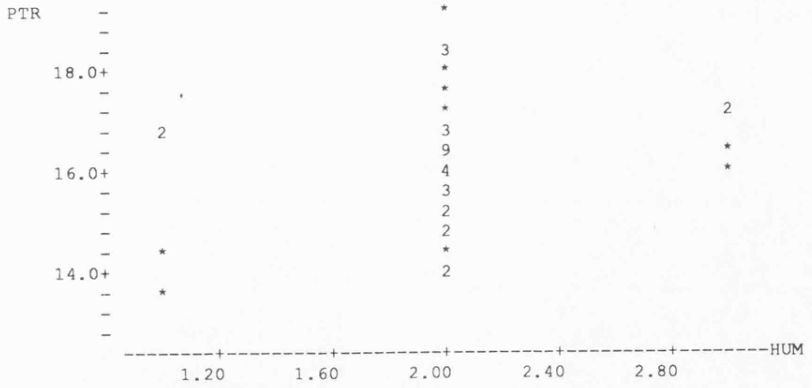
APPENDIX 6 Cambridgeshire: numbers of subjects in each subject grouping versus score on PTR variable, Years 3 and 5

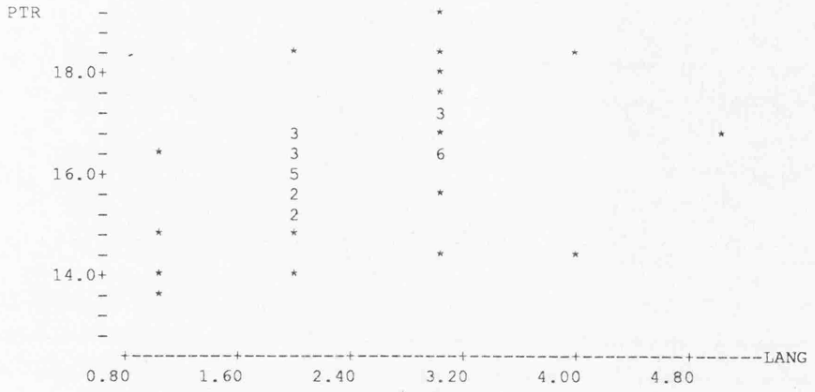
YEAR 3










PTR
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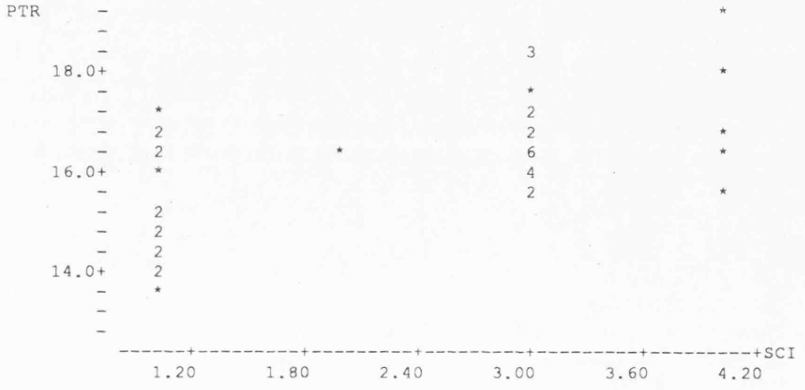
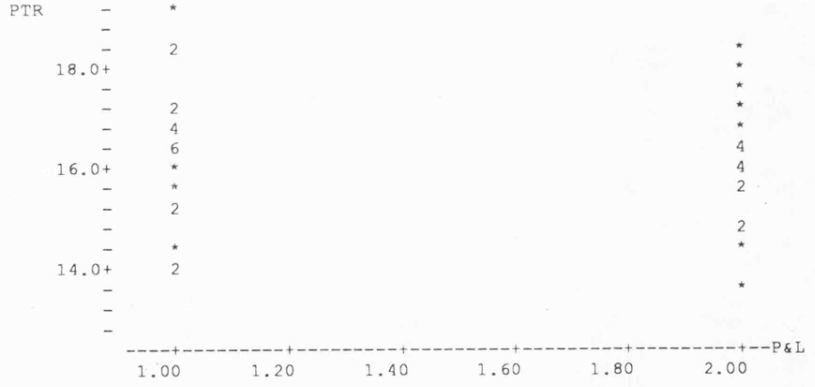
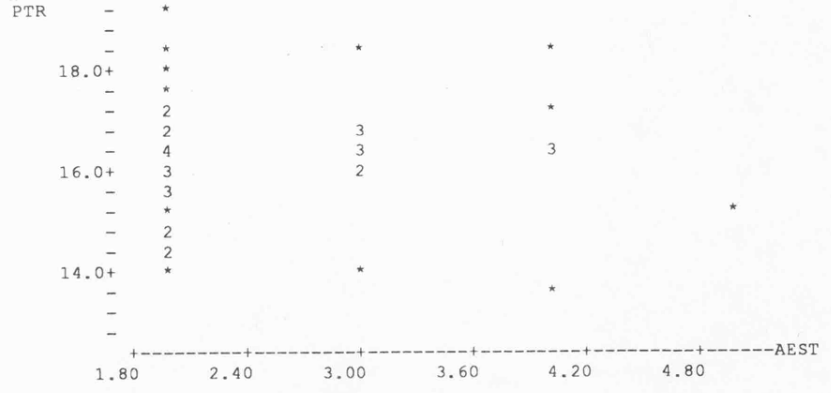
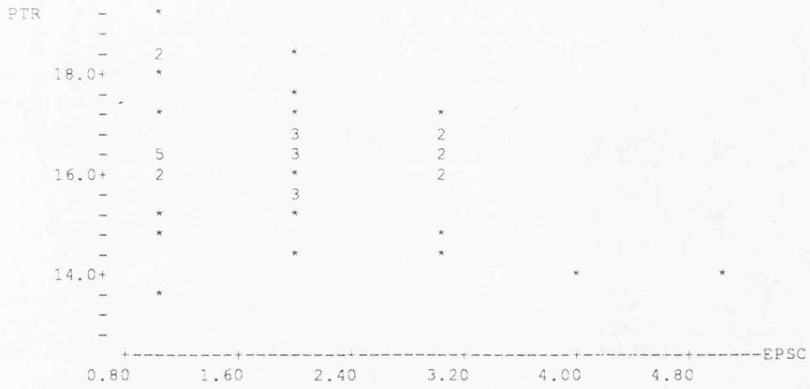
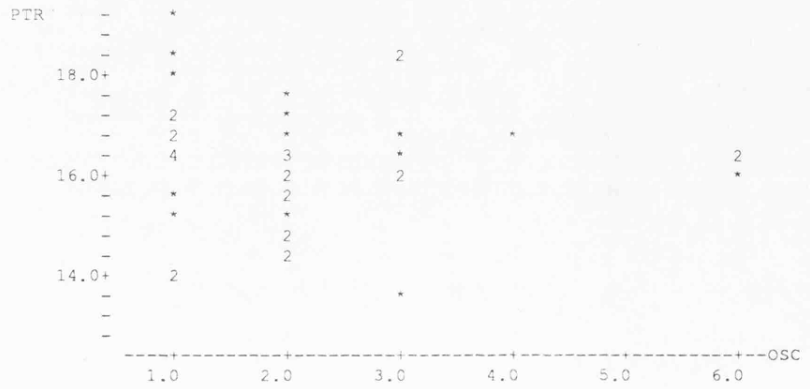
16.0+
14.0+
+---------+---------+---------+---------+---------+------LANG
0.80 1.60 2.40 3.20 4.00 4.80

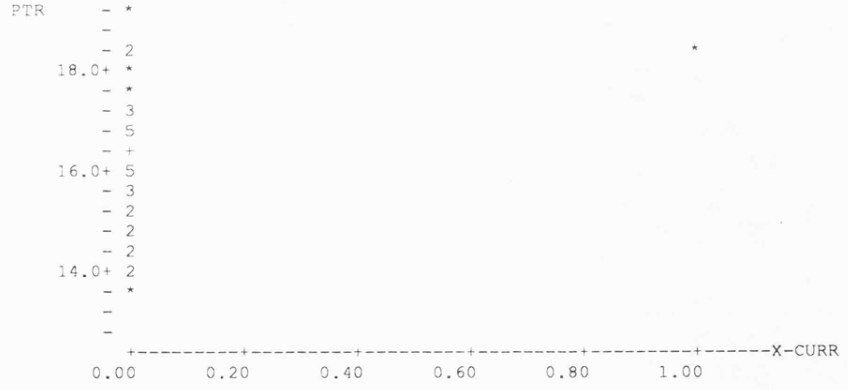

PTR
18.0+
16.0+
14.0+
------+---------+---------+---------+---------+---------+SCI
1.20 1.80 2.40 3.00 3.60 4.20

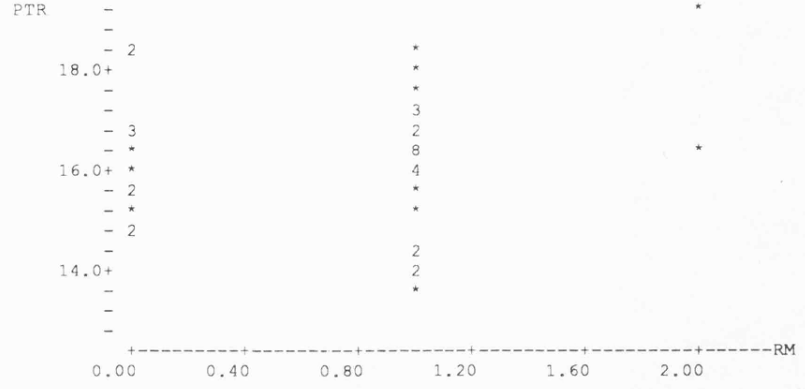

PTR
18.0+
16.0+
14.0+
----+---------+---------+---------+---------+---------+--P&L
1.00 1.20 1.40 1.60 1.80 2.00


PTR
18.0+
16.0+
14.0+
+---------+---------+---------+---------+---------+------AEST
1.80 2.40 3.00 3.60 4.20 4.80


PTR
18.0+
16.0+
14.0+
0.80
1.60
2.40
3.20
4.00
4.80
EPSC

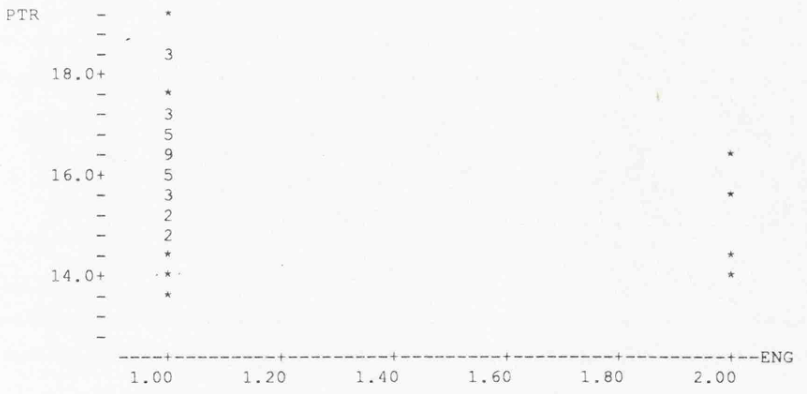

PTR
18.0+
16.0+
14.0+
1.0
2.0
3.0
4.0
5.0
6.0
OSC

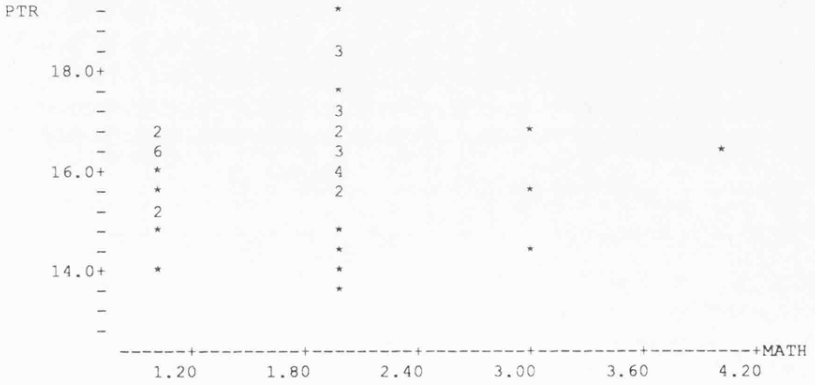

PTR
18.0+
16.0+
14.0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

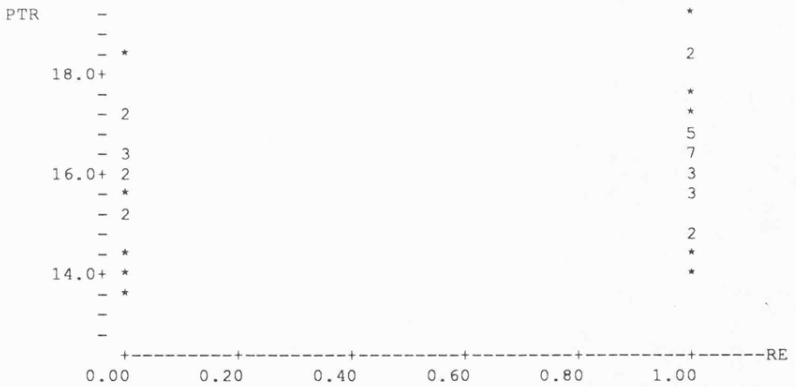

PTR
18.0+
16.0+
14.0+
0.00
0.40
0.80
1.20
1.60
2.00
RM

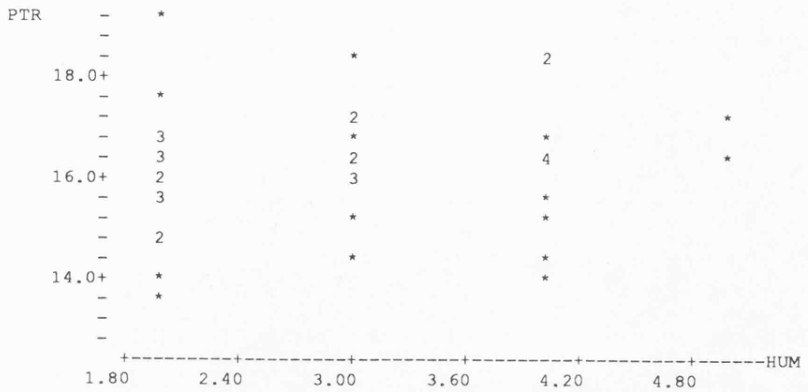
APPENDIX 6 contd.

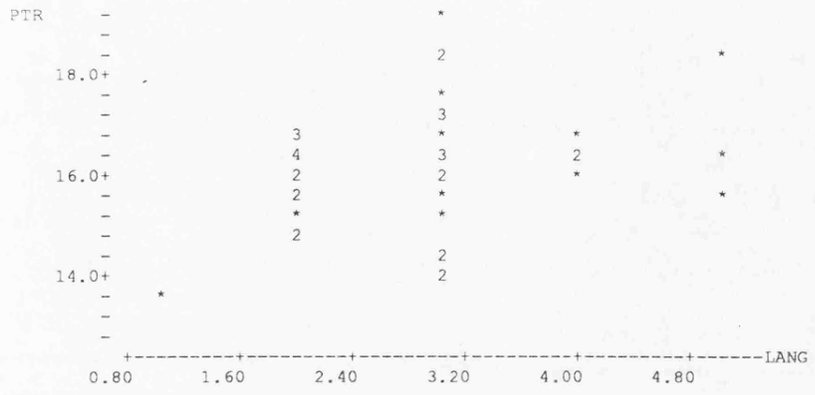
YEAR 5

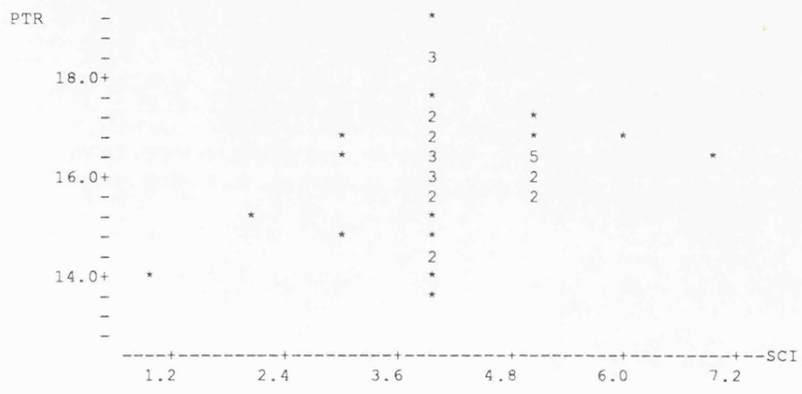


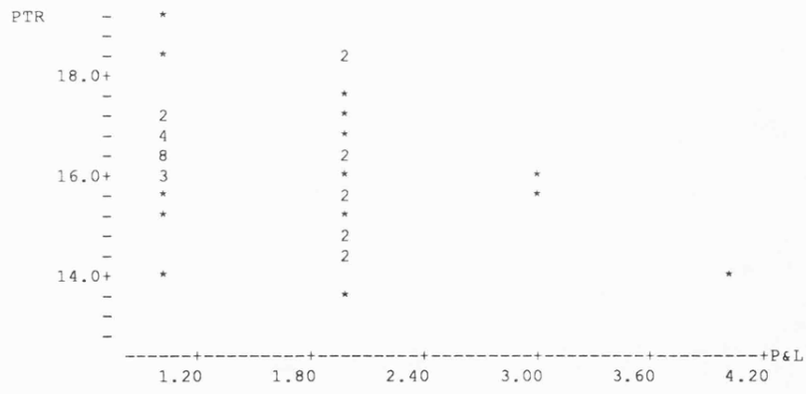


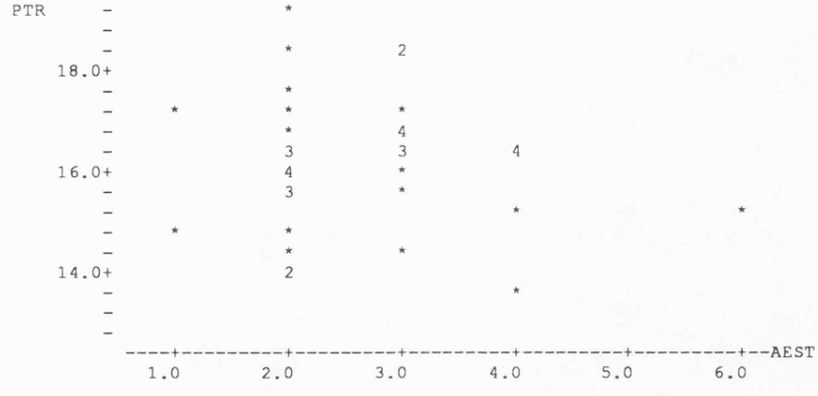


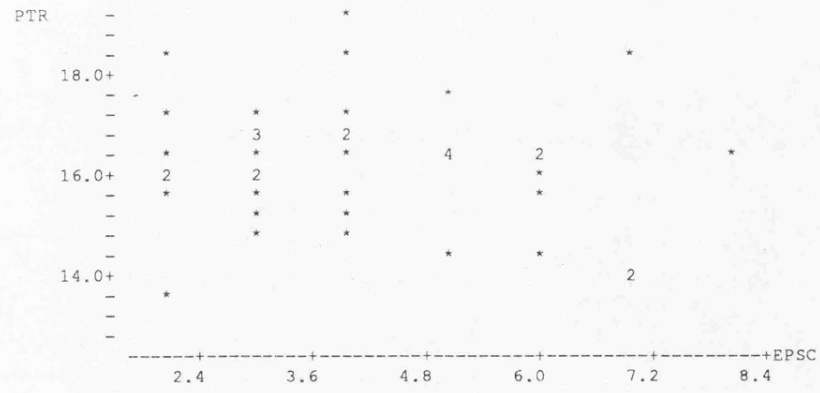


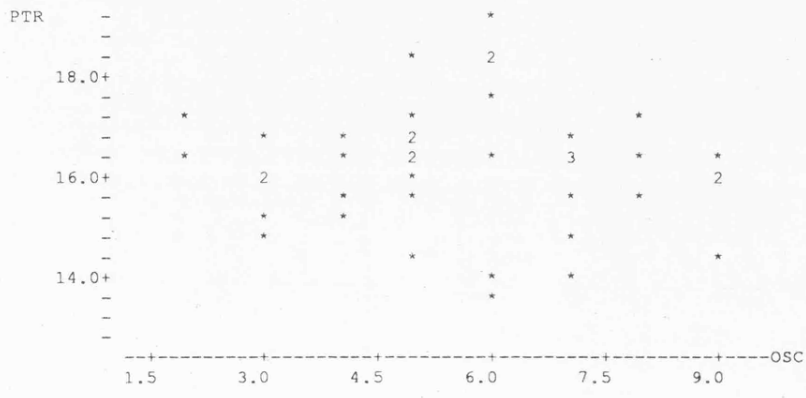

PTR
18.0+
16.0+
14.0+
LANG
0.80
1.60
2.40
3.20
4.00
4.80

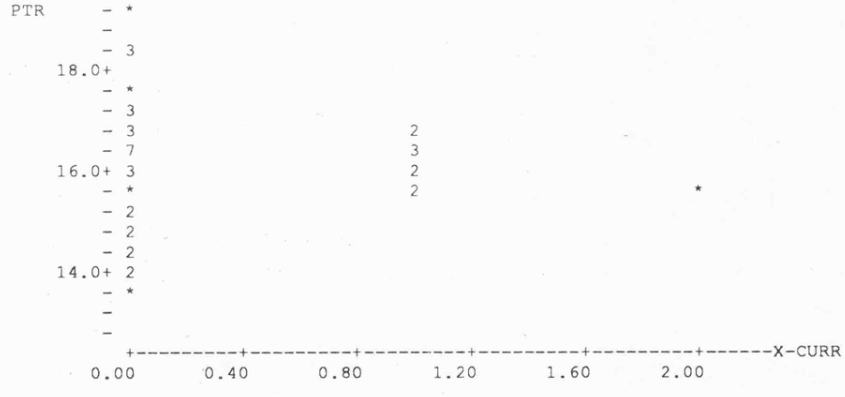

PTR
18.0+
16.0+
14.0+
SCI
1.2
2.4
3.6
4.8
6.0
7.2

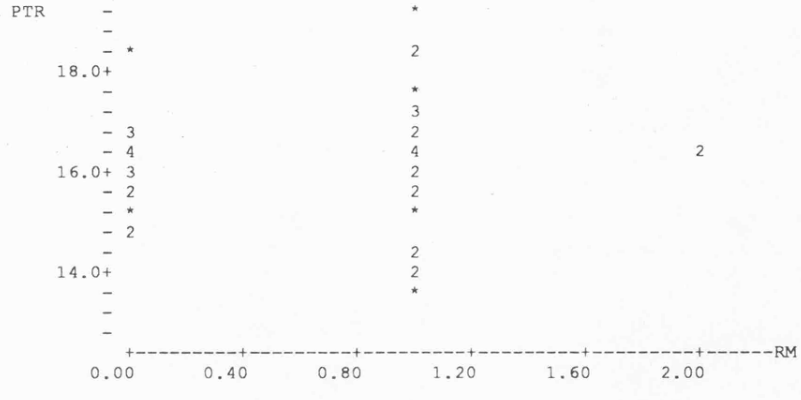

PTR
18.0+
16.0+
14.0+
P&L
1.20
1.80
2.40
3.00
3.60
4.20


PTR
18.0+
16.0+
14.0+
AEST
1.0
2.0
3.0
4.0
5.0
6.0

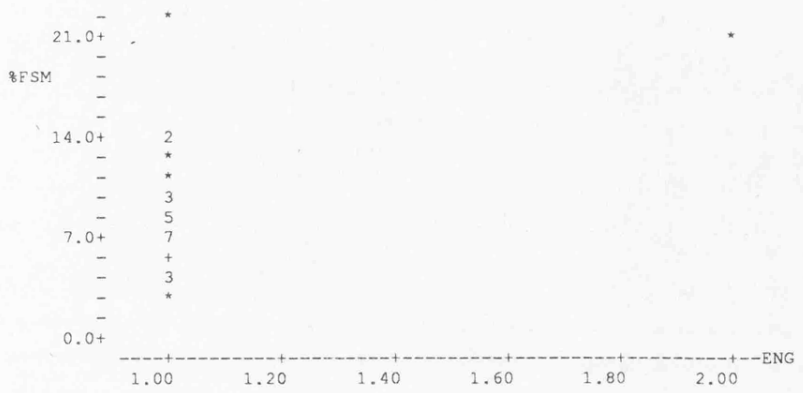

PTR
18.0+
16.0+
14.0+
2.4
3.6
4.8
6.0
7.2
8.4
EPSC

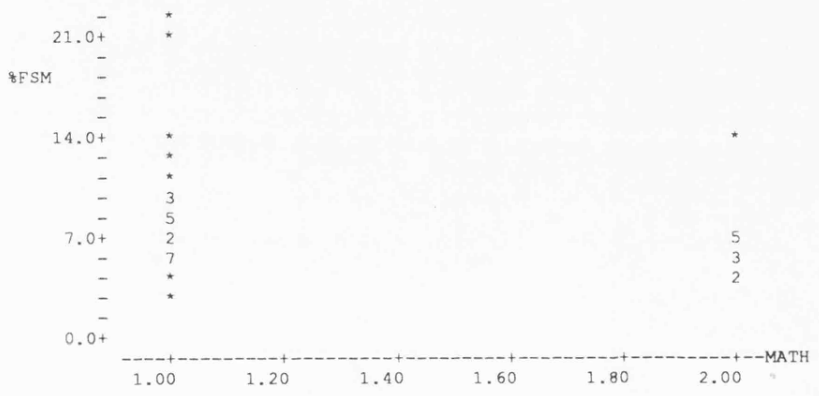

PTR
18.0+
16.0+
14.0+
1.5
3.0
4.5
6.0
7.5
9.0
OSC

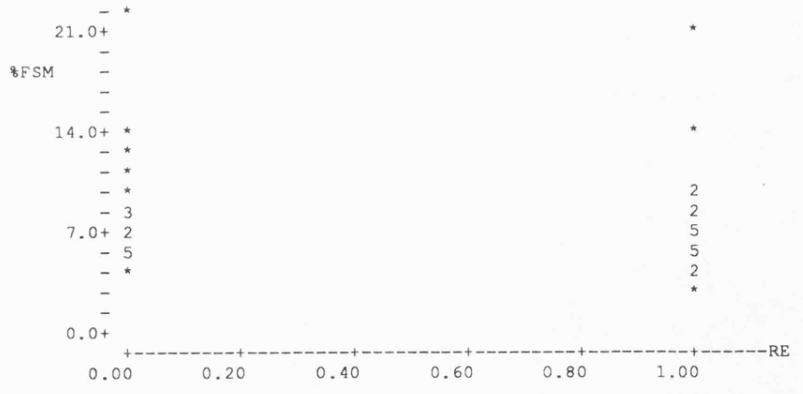

PTR
18.0+
16.0+
14.0+
0.00
0.40
0.80
1.20
1.60
2.00
X-CURR

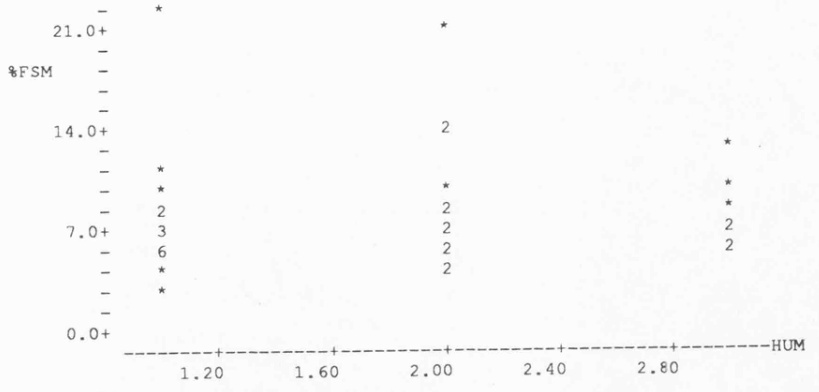

PTR
18.0+
16.0+
14.0+
0.00
0.40
0.80
1.20
1.60
2.00
RM

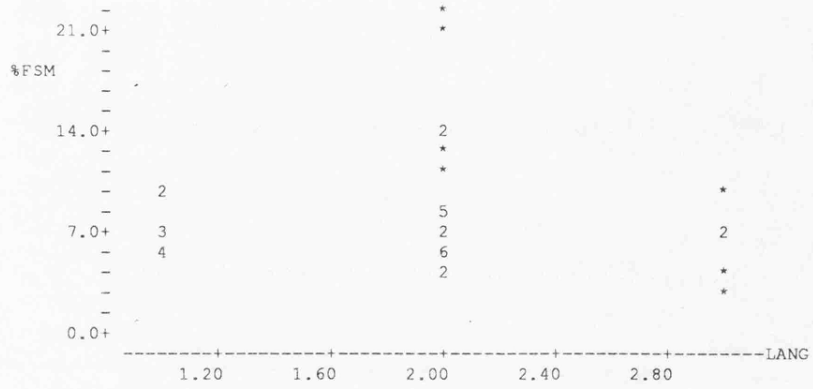
APPENDIX 7 Leicestershire: numbers of subjects in each subject grouping versus score on FSM variable, high schools, Year 3

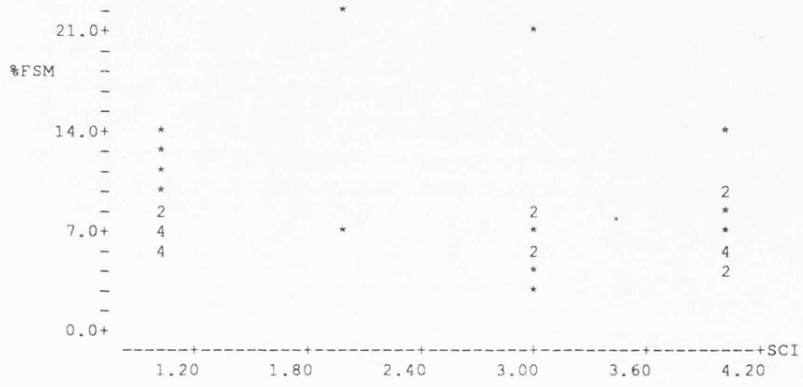


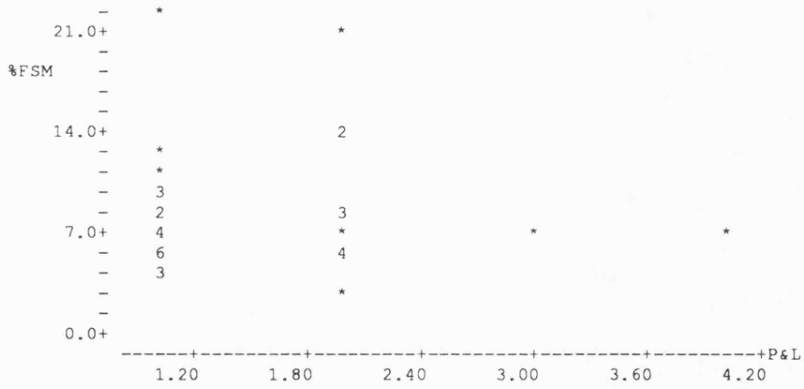


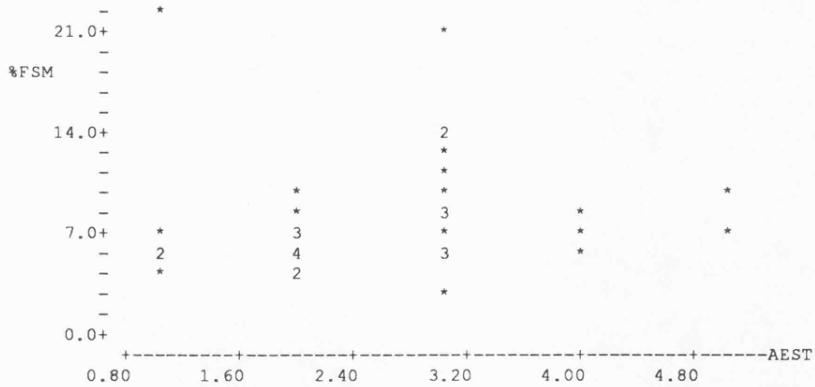


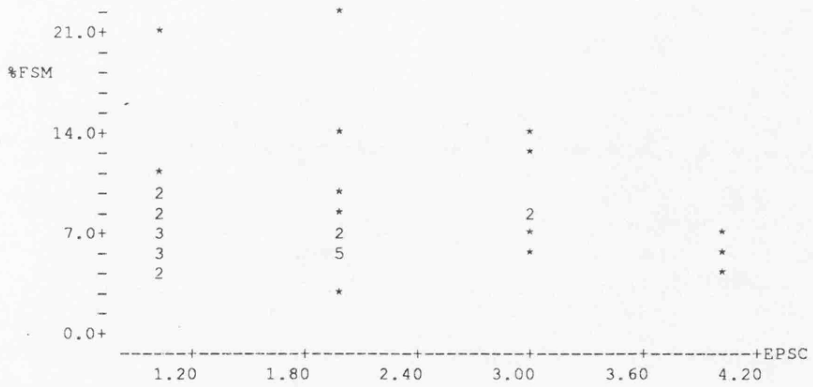


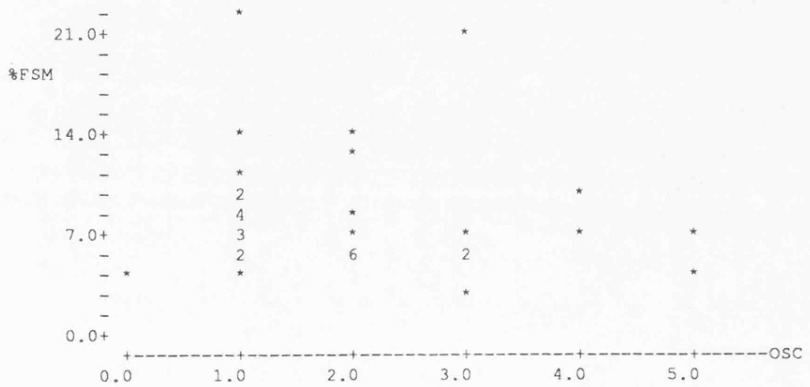

21.0+
%FSM
14.0+
7.0+
0.0+
1.20
1.60
2.00
2.40
2.80
LANG

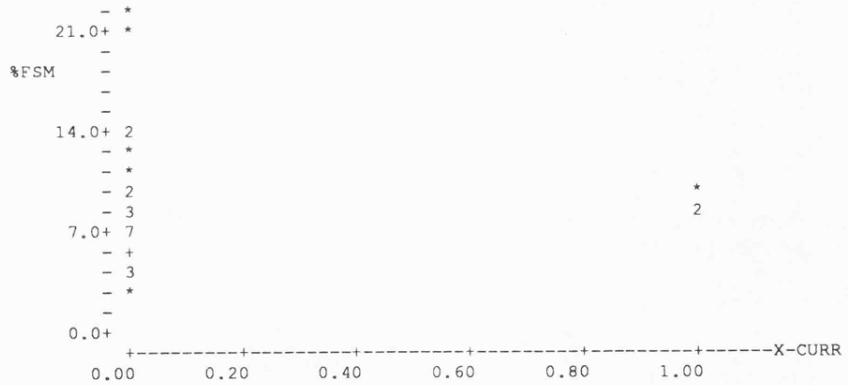

21.0+
%FSM
14.0+
7.0+
0.0+
1.20
1.80
2.40
3.00
3.60
4.20
SCI

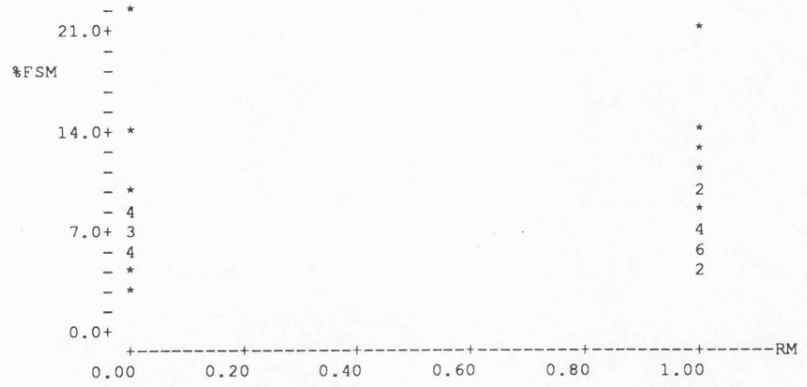

21.0+
%FSM
14.0+
7.0+
0.0+
1.20
1.80
2.40
3.00
3.60
4.20
P&L


21.0+
%FSM
14.0+
7.0+
0.0+
0.80
1.60
2.40
3.20
4.00
4.80
AEST

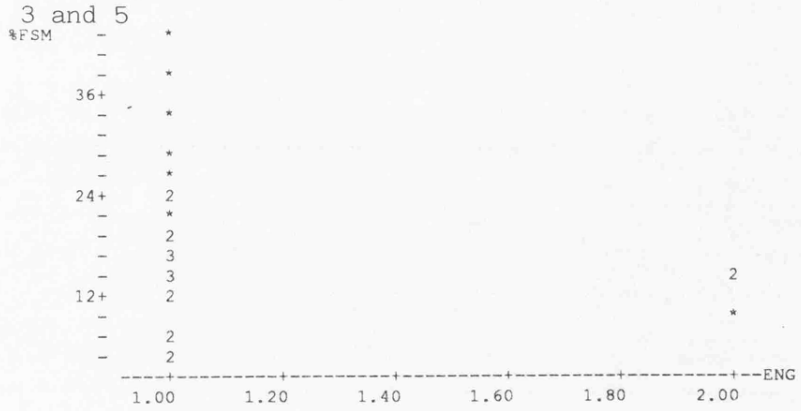

%FSM
21.0+
14.0+
7.0+
0.0+
1.20
1.80
2.40
3.00
3.60
4.20
EPSC

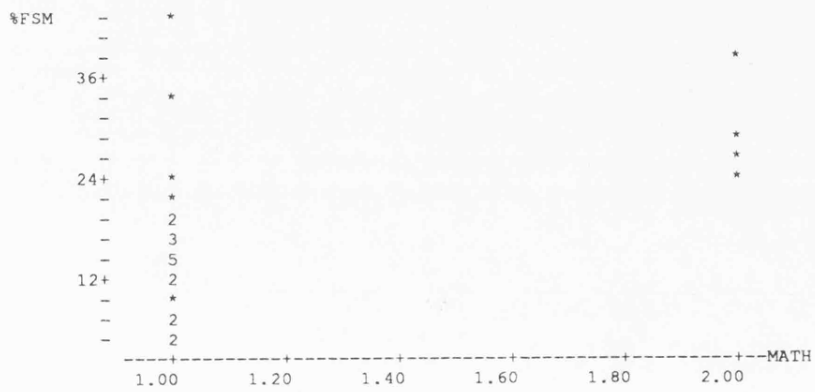

%FSM
21.0+
14.0+
7.0+
0.0+
0.0
1.0
2.0
3.0
4.0
5.0
OSC

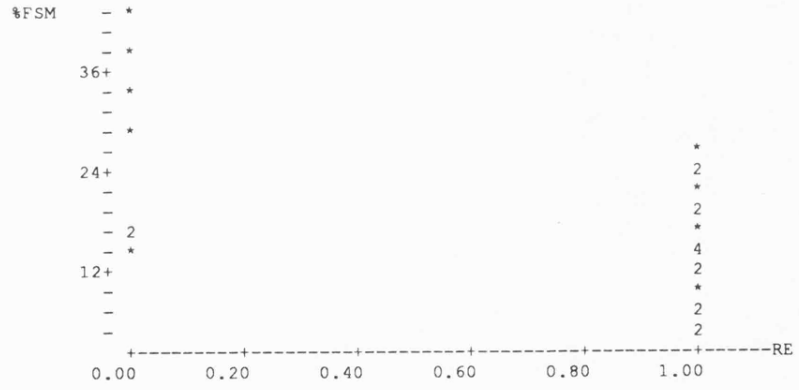

%FSM
21.0+
14.0+
7.0+
0.0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

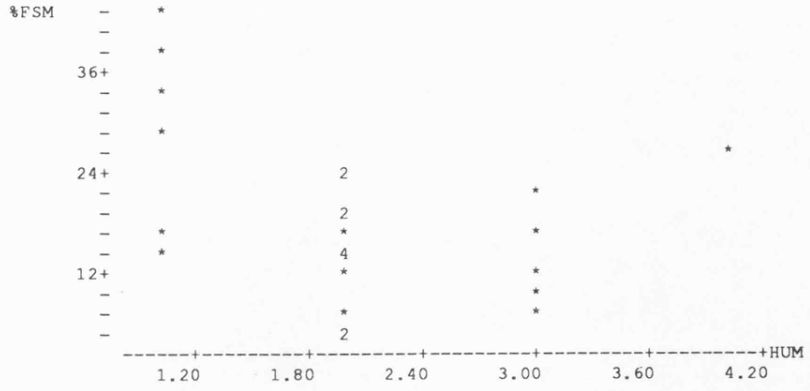

%FSM
21.0+
14.0+
7.0+
0.0+
0.00
0.20
0.40
0.60
0.80
1.00
RM

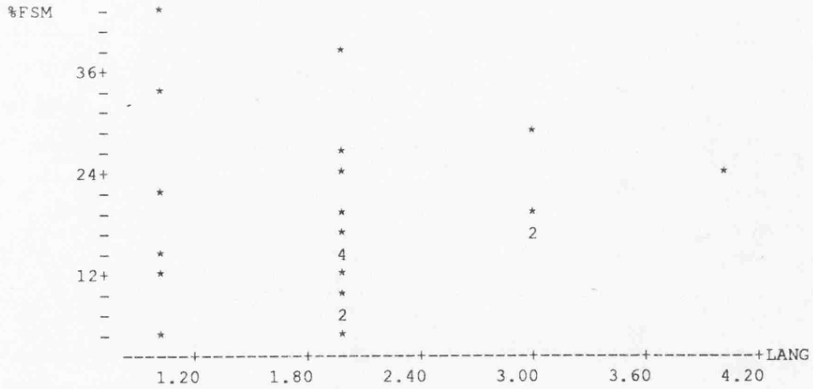
APPENDIX 8 Leicestershire: numbers of subjects in each subject grouping versus score on FSM variable, 11-16/18 schools, Years 3 and 5

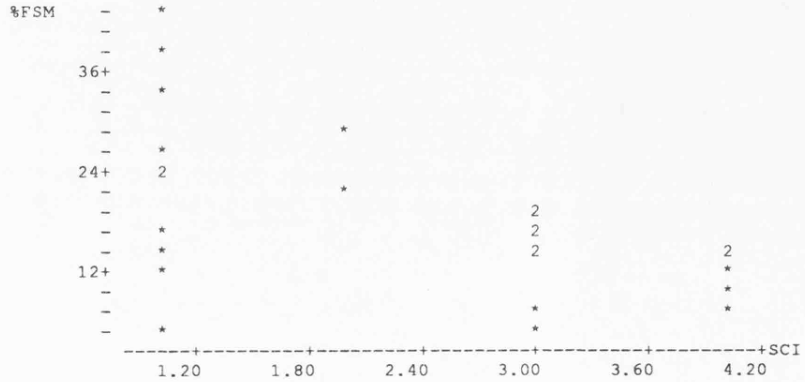


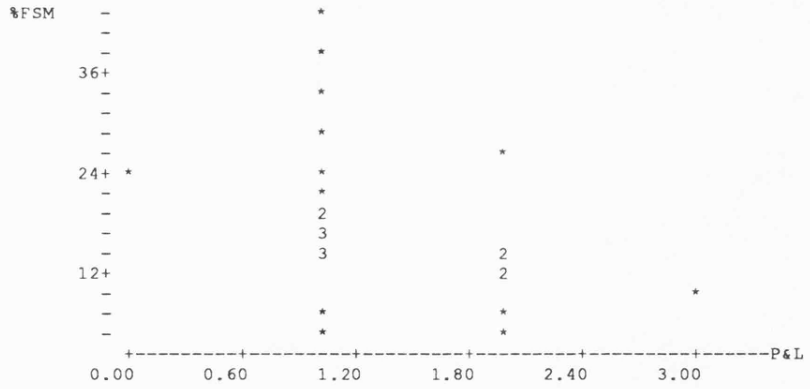


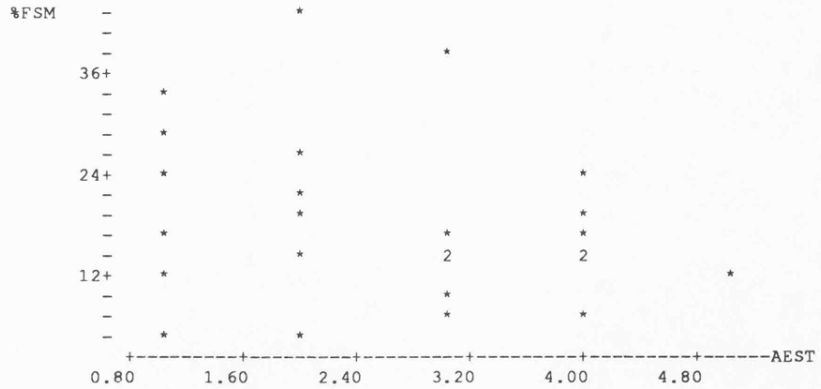


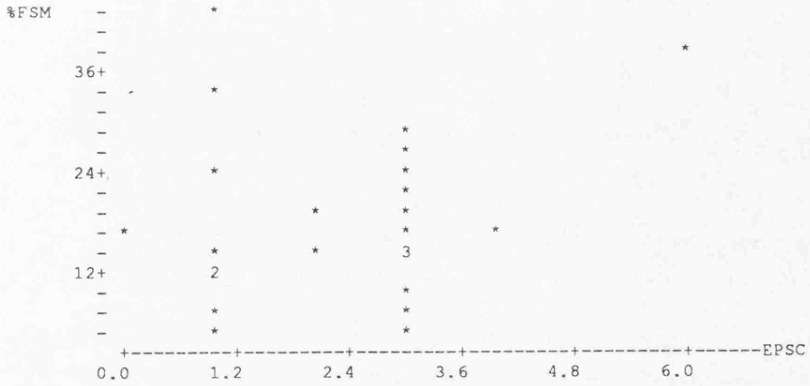


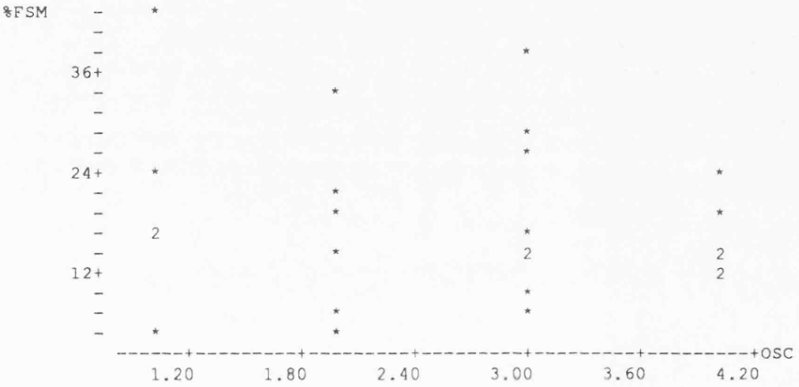

%FSM
36+
24+
12+
1.20
1.80
2.40
3.00
3.60
4.20
LANG

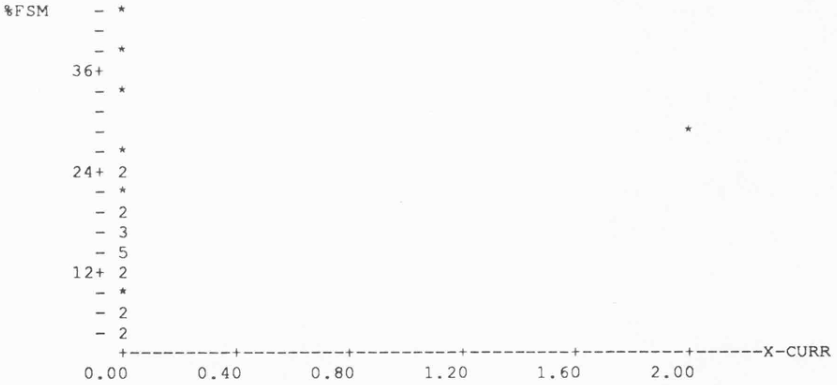

%FSM
36+
24+
12+
1.20
1.80
2.40
3.00
3.60
4.20
SCI

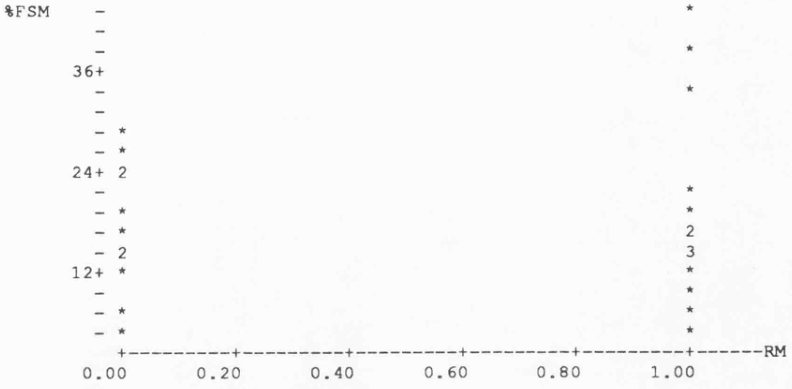

%FSM
36+
24+
12+
0.00
0.60
1.20
1.80
2.40
3.00
P&L


%FSM
36+
24+
12+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


%FSM
36+
24+
12+
EPSC
0.0
1.2
2.4
3.6
4.8
6.0

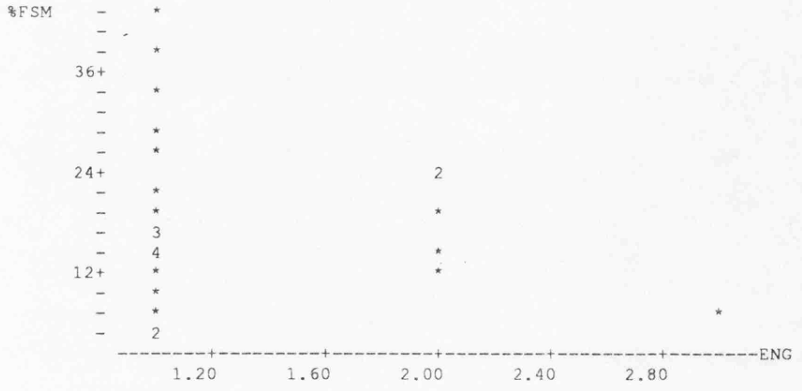

%FSM
36+
24+
12+
OSC
1.20
1.80
2.40
3.00
3.60
4.20

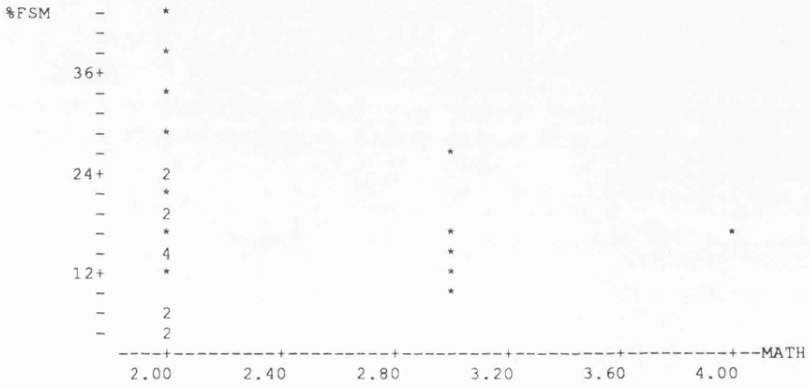

%FSM
36+
24+
12+
X-CURR
0.00
0.40
0.80
1.20
1.60
2.00

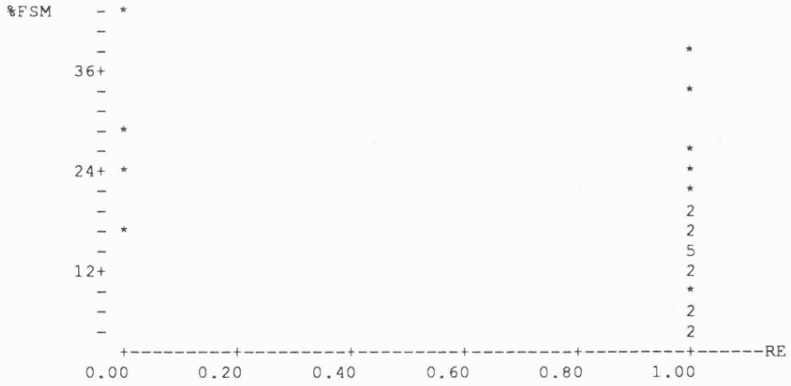

%FSM
36+
24+
12+
RM
0.00
0.20
0.40
0.60
0.80
1.00

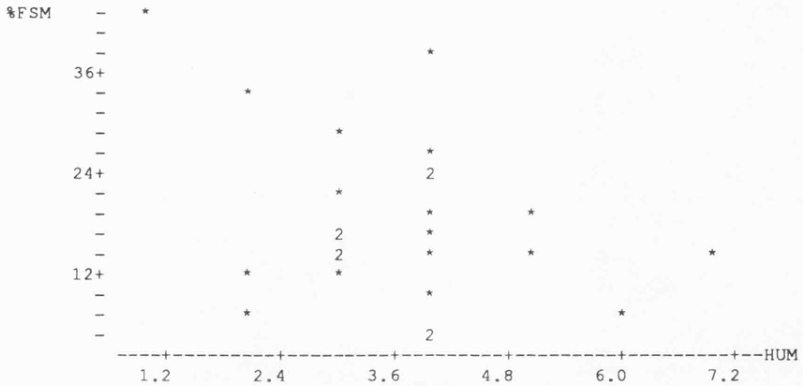
APPENDIX 8 contd.

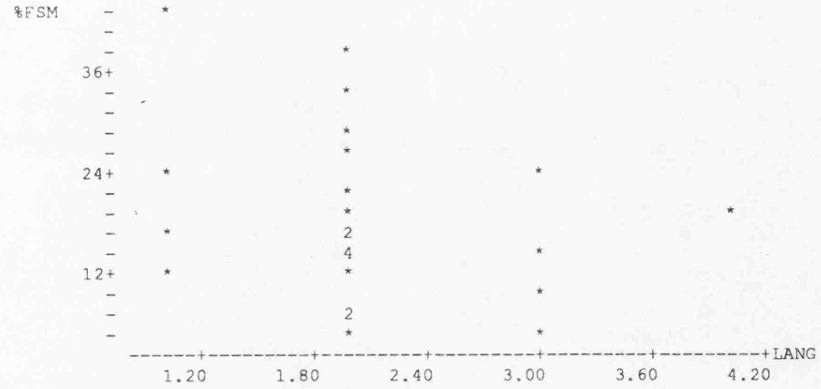
YEAR 5

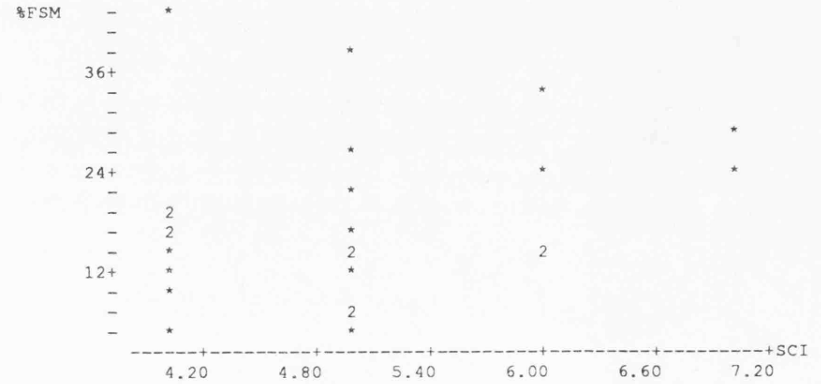


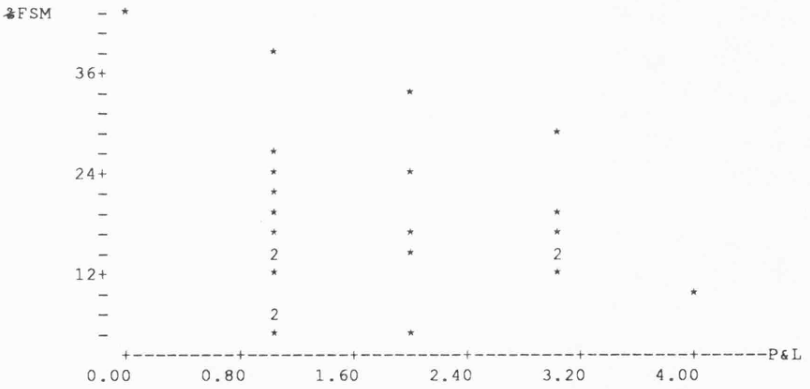


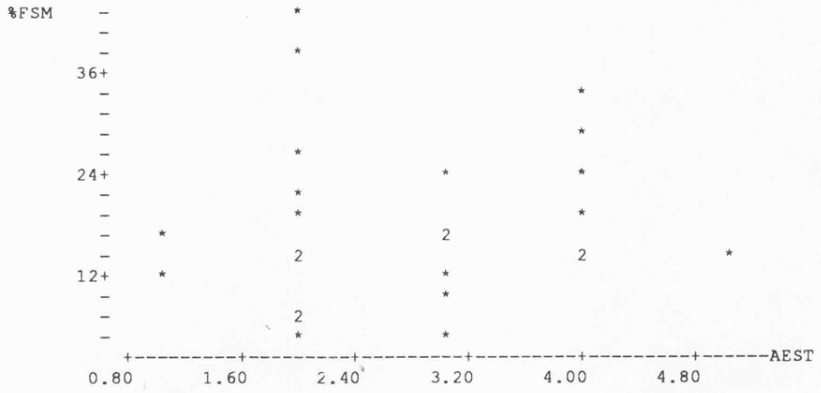


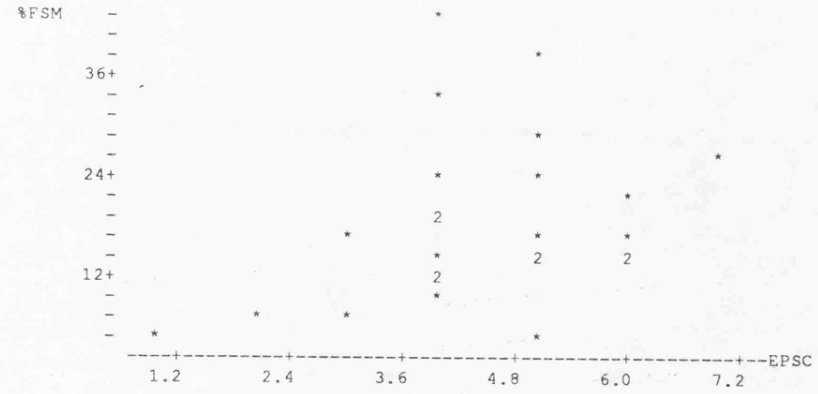


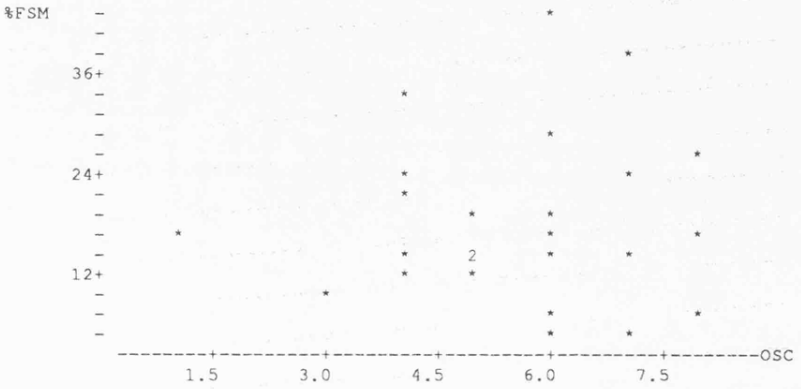

%FSM
36+
24+
12+
1.20
1.80
2.40
3.00
3.60
4.20
LANG

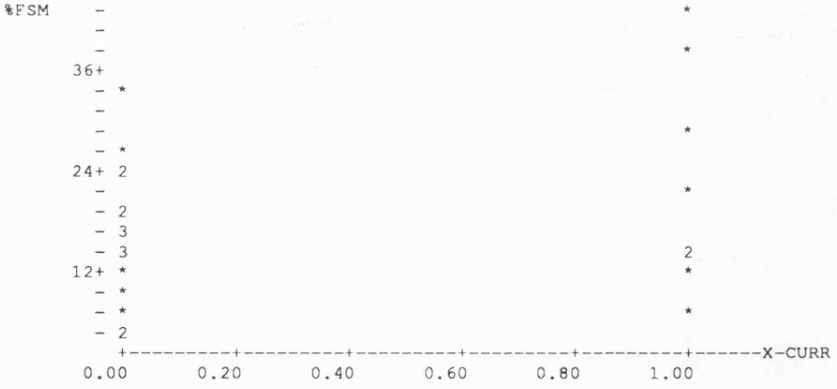

%FSM
36+
24+
12+
4.20
4.80
5.40
6.00
6.60
7.20
SCI

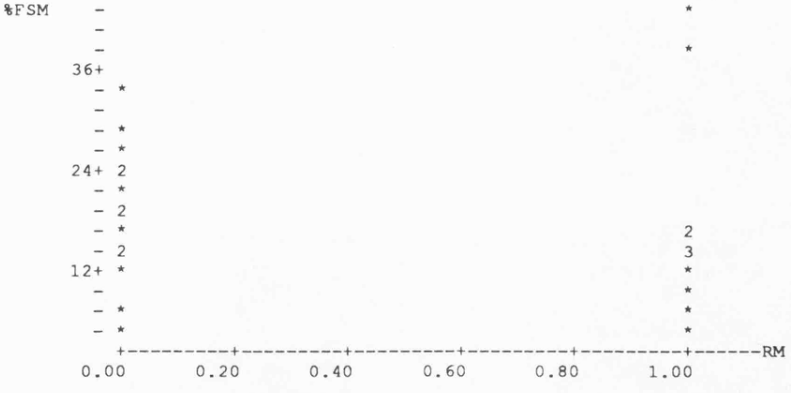

%FSM
36+
24+
12+
0.00
0.80
1.60
2.40
3.20
4.00
P&L


%FSM
36+
24+
12+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


%FSM
36+
24+
12+
1.2
2.4
3.6
4.8
6.0
7.2
EPSC

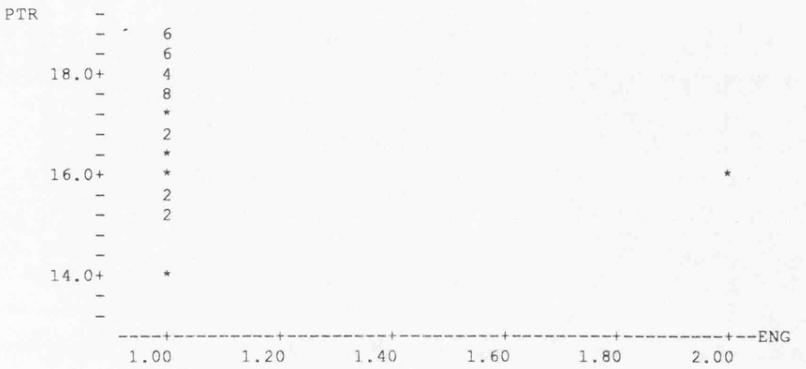

%FSM
36+
24+
12+
1.5
3.0
4.5
6.0
7.5
OSC

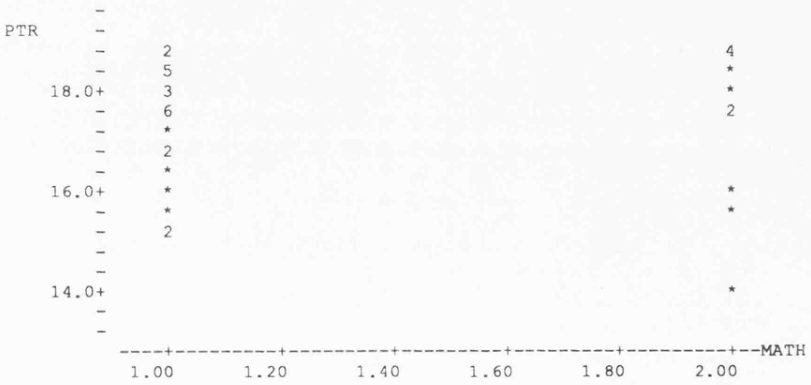

%FSM
36+
24+
12+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

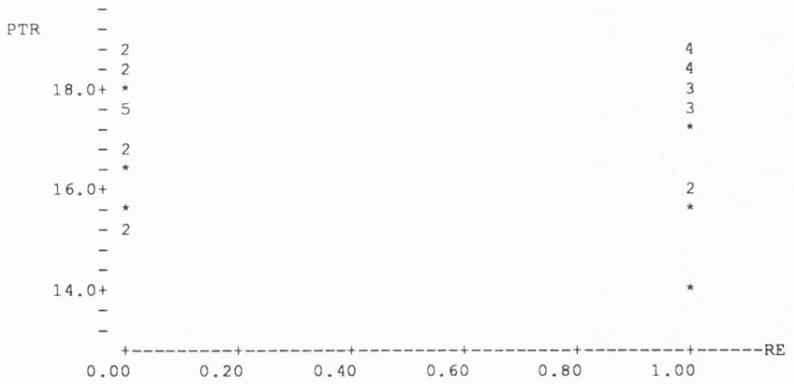

%FSM
36+
24+
12+
0.00
0.20
0.40
0.60
0.80
1.00
RM

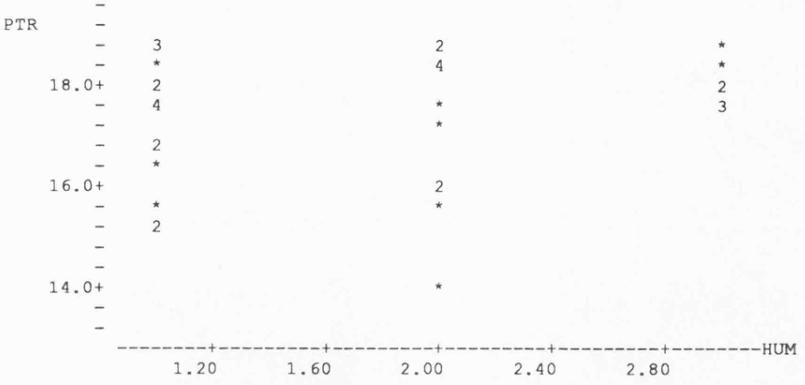
APPENDIX 9 Leicestershire: numbers of subjects in each subject grouping versus score on PTR variable, high & upper schools, Years 3 and 5

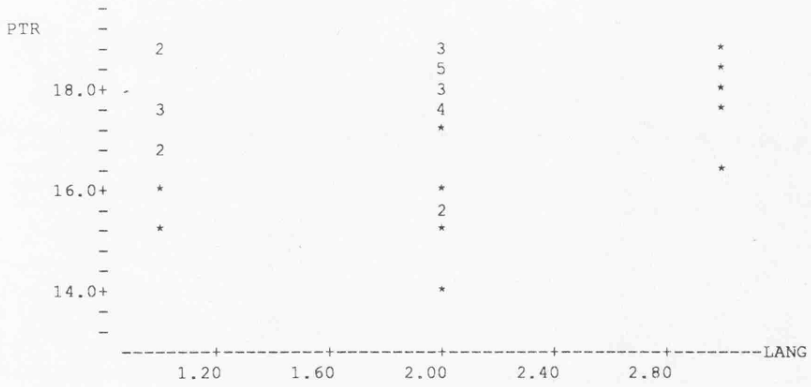
YEAR 3

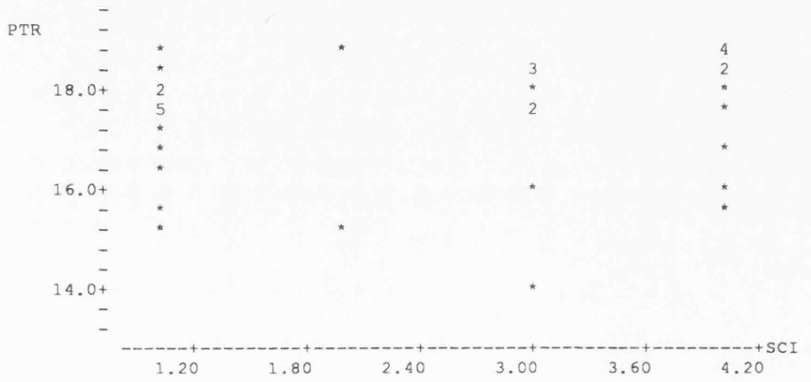


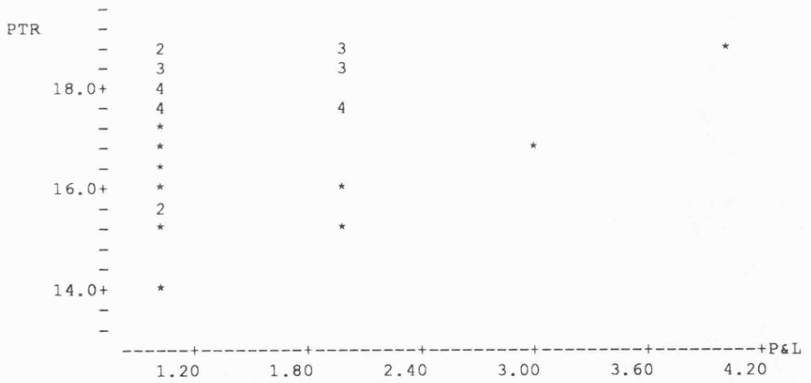


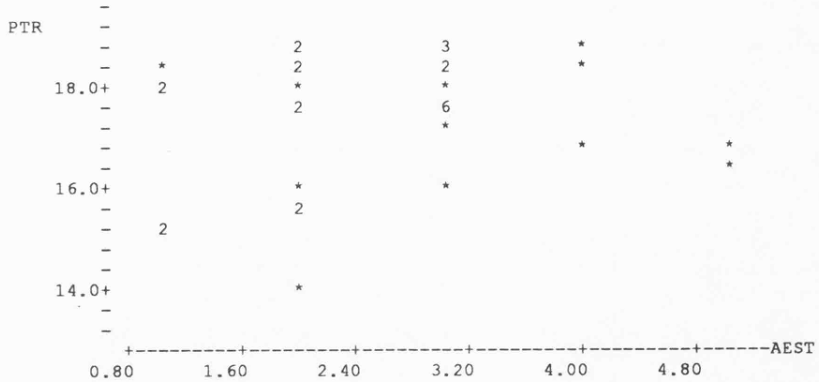


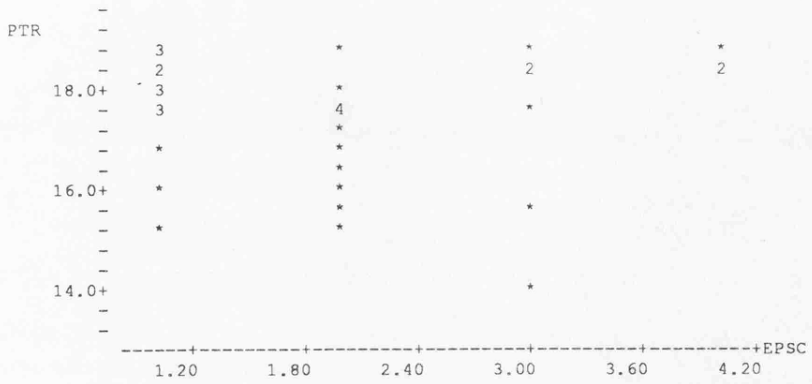


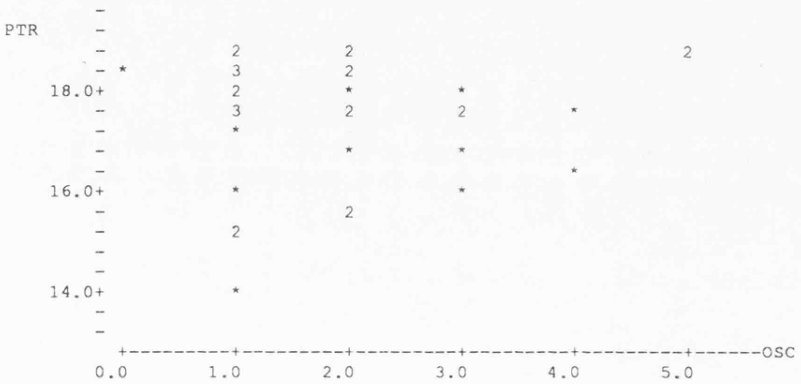

PTR
18.0+
16.0+
14.0+
1.20
1.60
2.00
2.40
2.80
LANG

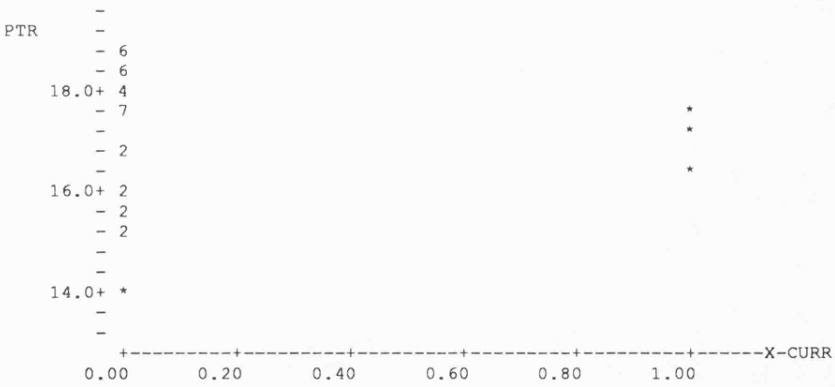

PTR
18.0+
16.0+
14.0+
1.20
1.80
2.40
3.00
3.60
4.20
SCI

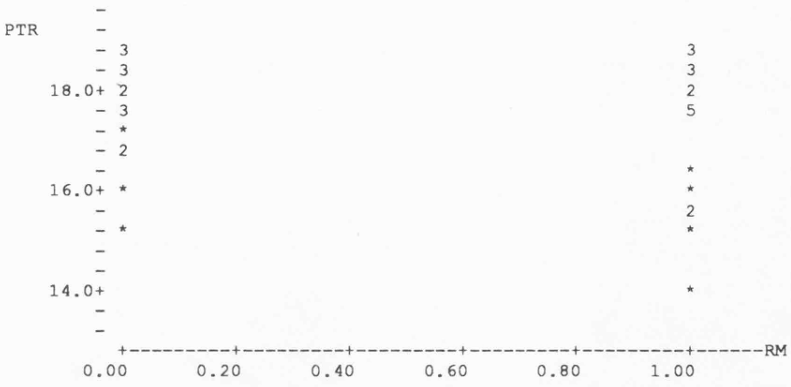

PTR
18.0+
16.0+
14.0+
1.20
1.80
2.40
3.00
3.60
4.20
P&L


PTR
18.0+
16.0+
14.0+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


PTR
18.0+
16.0+
14.0+
1.20
1.80
2.40
3.00
3.60
4.20
EPSC

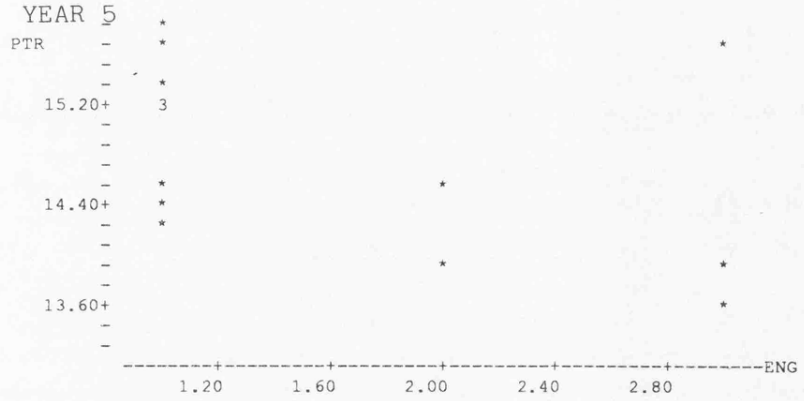

PTR
18.0+
16.0+
14.0+
0.0
1.0
2.0
3.0
4.0
5.0
OSC

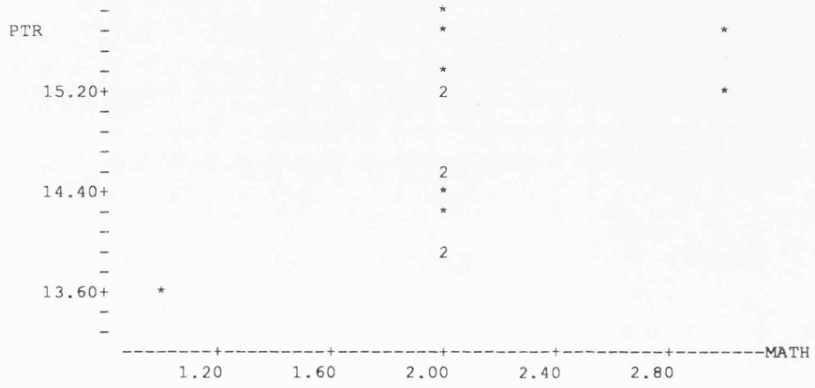

PTR
18.0+
16.0+
14.0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

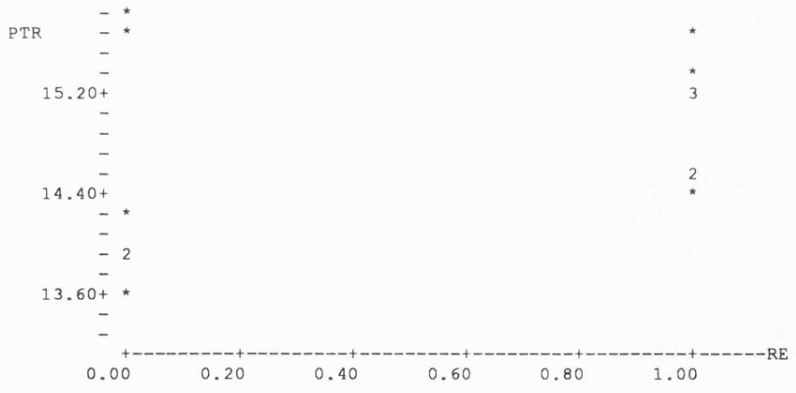

PTR
18.0+
16.0+
14.0+
0.00
0.20
0.40
0.60
0.80
1.00
RM

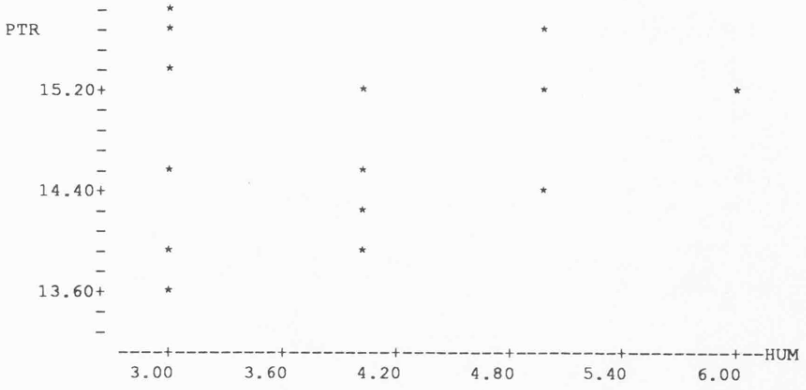
APPENDIX 9 contd.

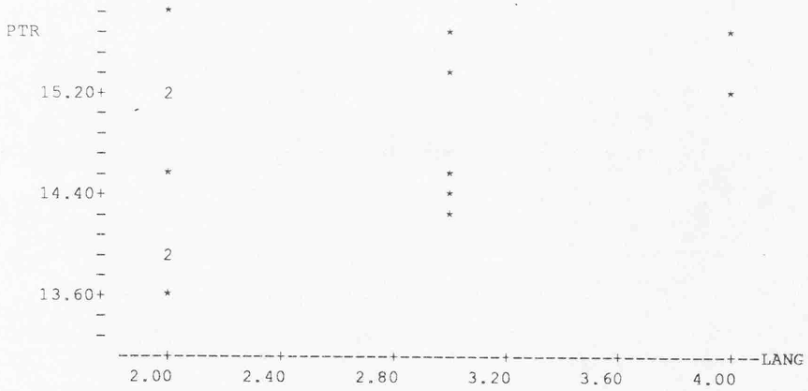
YEAR 5

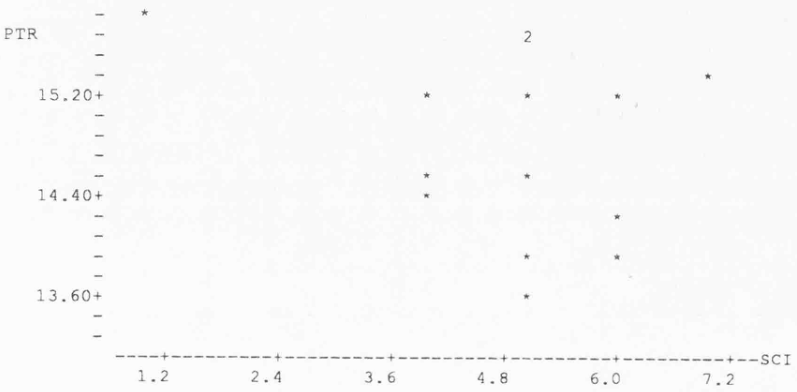


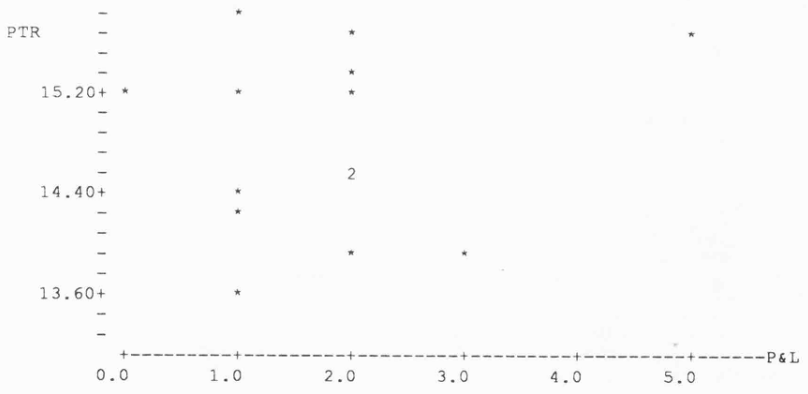


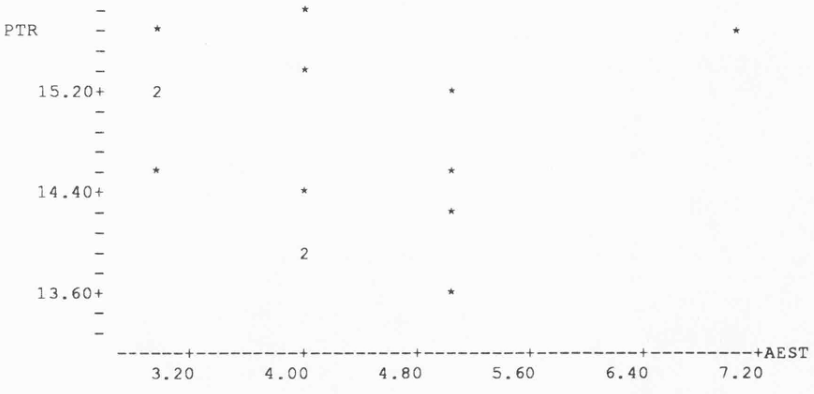


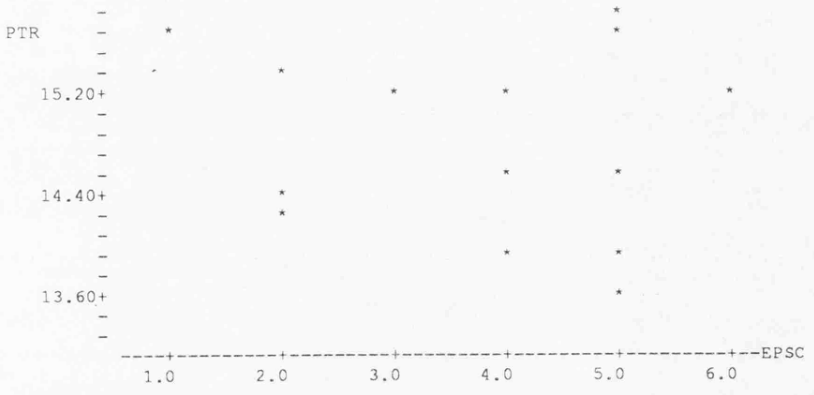


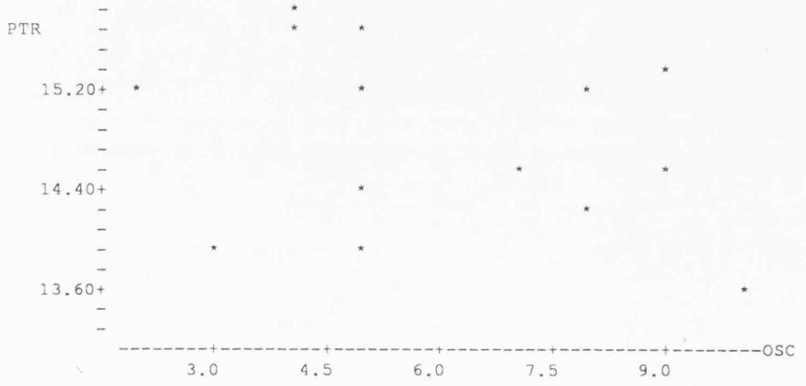

PTR
15.20+
14.40+
13.60+
2.00
2.40
2.80
3.20
3.60
4.00
LANG

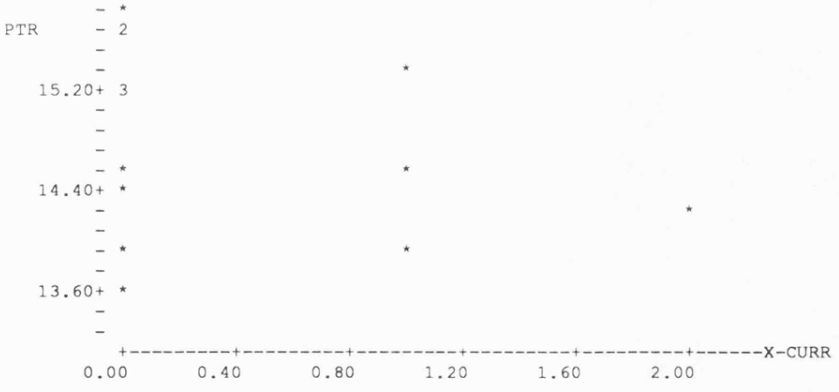

PTR
15.20+
14.40+
13.60+
1.2
2.4
3.6
4.8
6.0
7.2
SCI

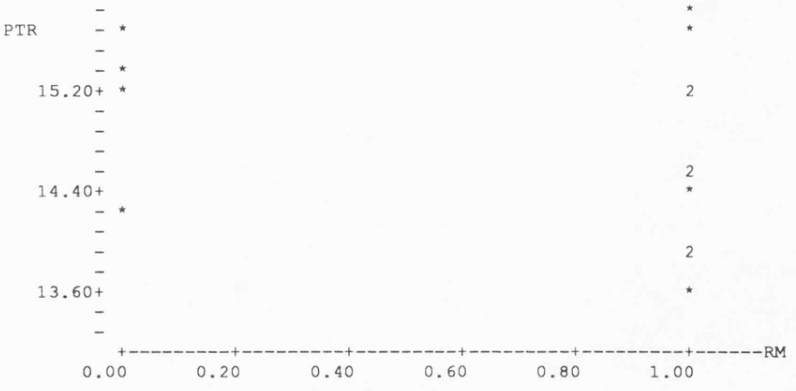

PTR
15.20+
14.40+
13.60+
0.0
1.0
2.0
3.0
4.0
5.0
P&L


PTR
15.20+
14.40+
13.60+
3.20
4.00
4.80
5.60
6.40
7.20
AEST


PTR
15.20+
14.40+
13.60+
1.0
2.0
3.0
4.0
5.0
6.0
EPSC

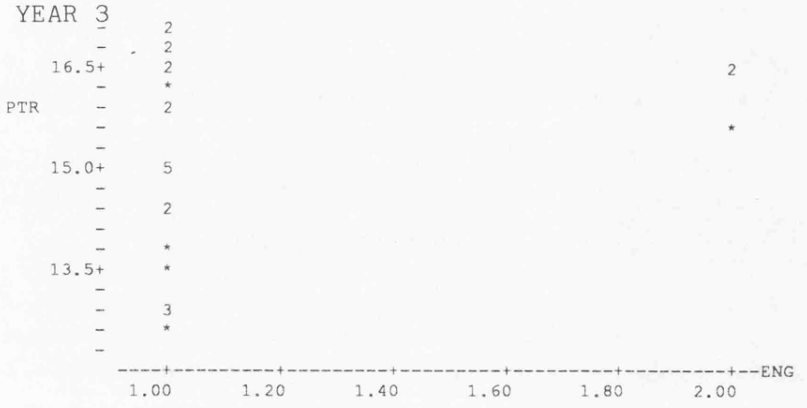

PTR
15.20+
14.40+
13.60+
3.0
4.5
6.0
7.5
9.0
OSC

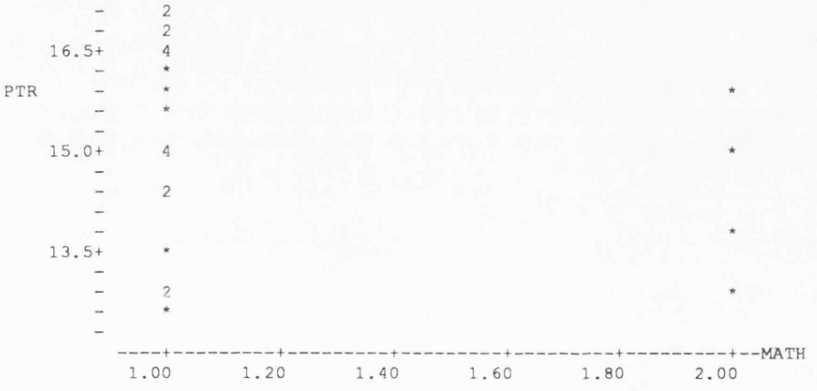

PTR
15.20+
14.40+
13.60+
0.00
0.40
0.80
1.20
1.60
2.00
X-CURR

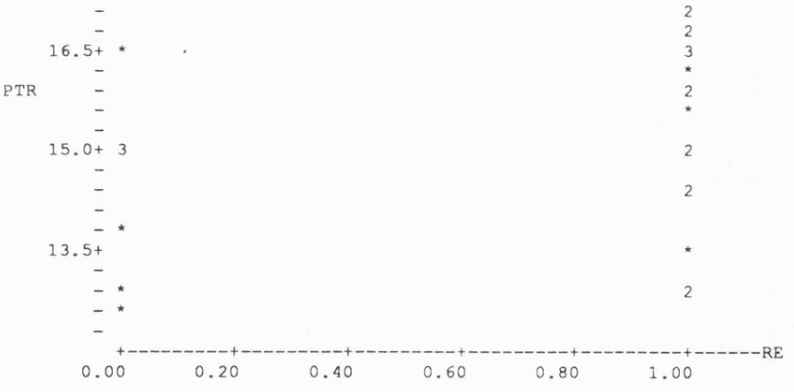

PTR
15.20+
14.40+
13.60+
0.00
0.20
0.40
0.60
0.80
1.00
RM

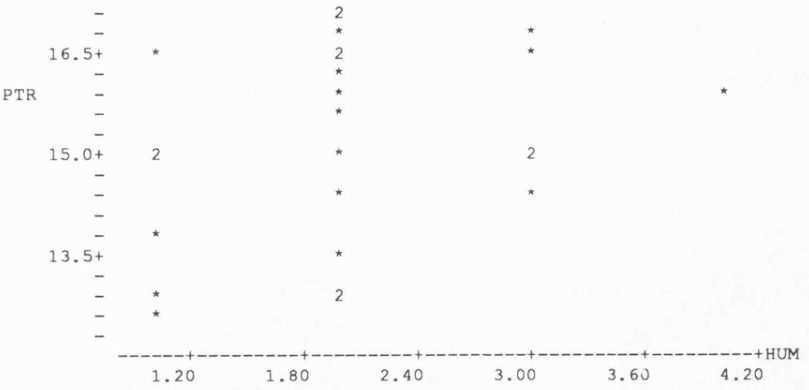
APPENDIX 10 Leicestershire: numbers of subjects in each subject grouping versus score on PTR variable, 11-16/18 schools, Years 3 and 5

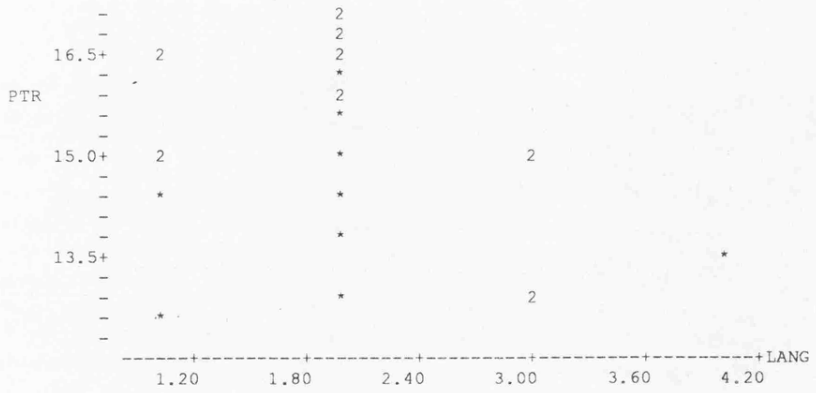
YEAR 3

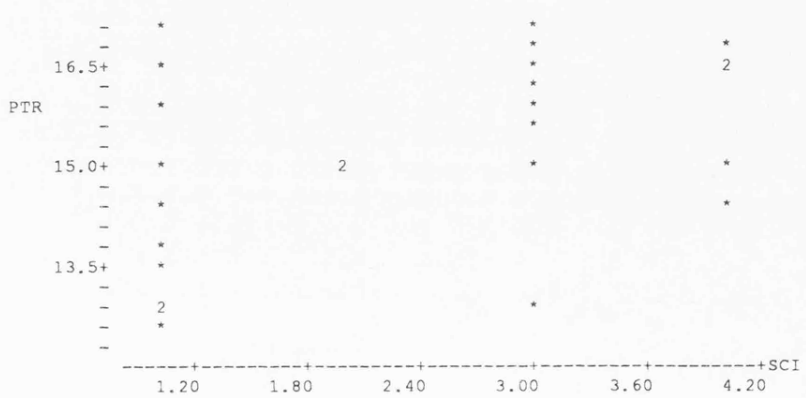


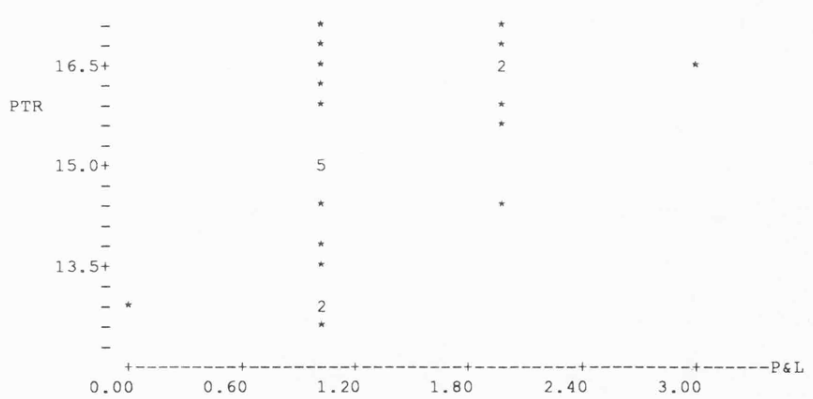


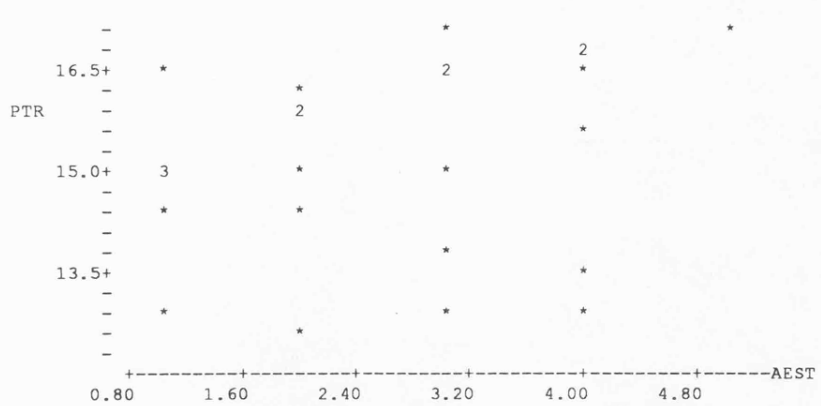


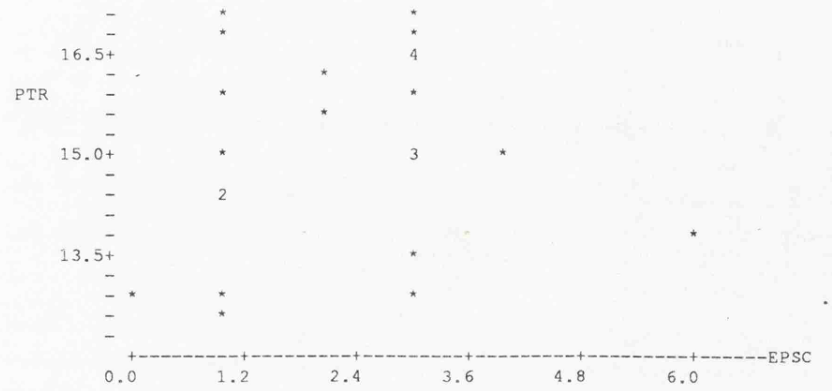


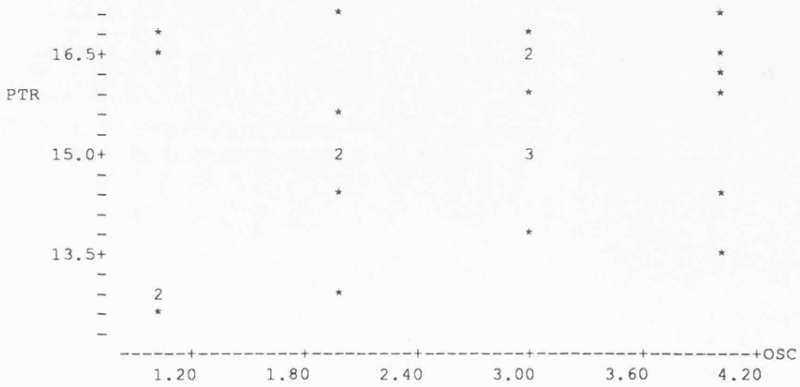

PTR
16.5+
15.0+
13.5+
1.20
1.80
2.40
3.00
3.60
4.20
LANG

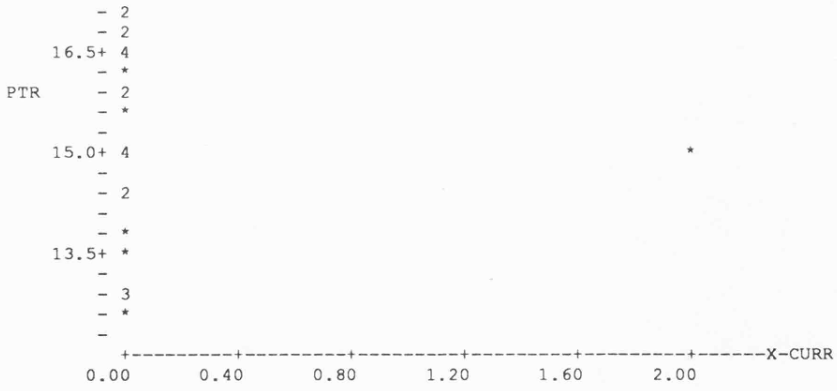

PTR
16.5+
15.0+
13.5+
1.20
1.80
2.40
3.00
3.60
4.20
SCI

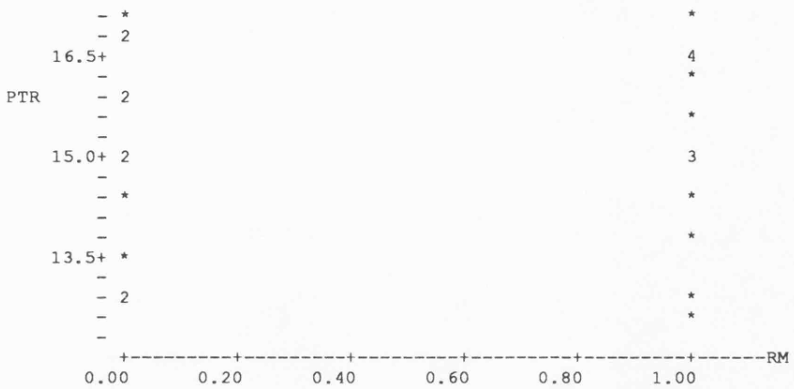

PTR
16.5+
15.0+
13.5+
0.00
0.60
1.20
1.80
2.40
3.00
P&L


PTR
16.5+
15.0+
13.5+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


PTR
16.5+
15.0+
13.5+
0.0
1.2
2.4
3.6
4.8
6.0
EPSC

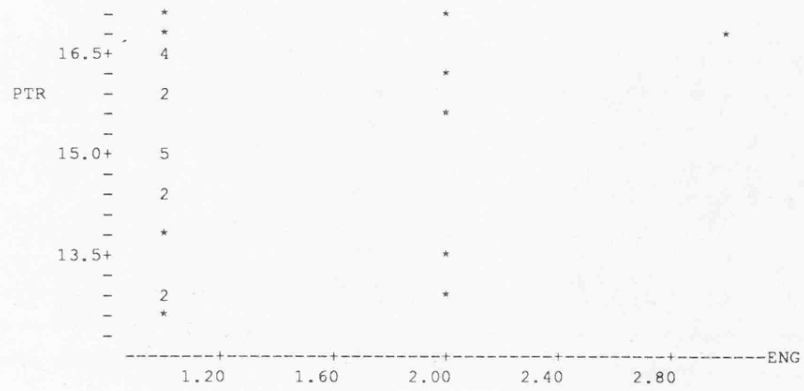

PTR
16.5+
15.0+
13.5+
1.20
1.80
2.40
3.00
3.60
4.20
OSC

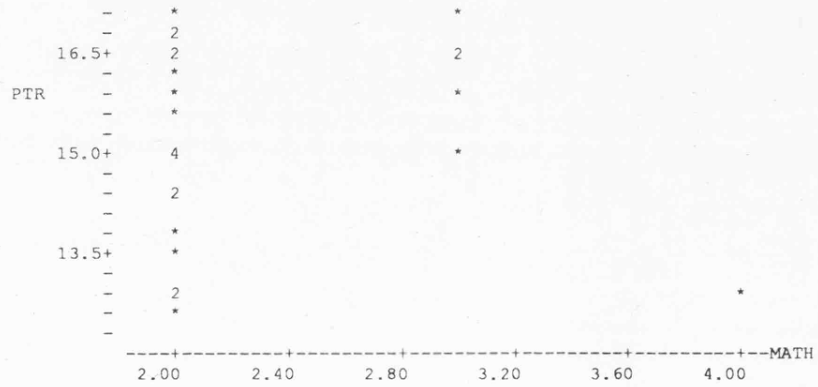

PTR
16.5+
15.0+
13.5+
0.00
0.40
0.80
1.20
1.60
2.00
X-CURR

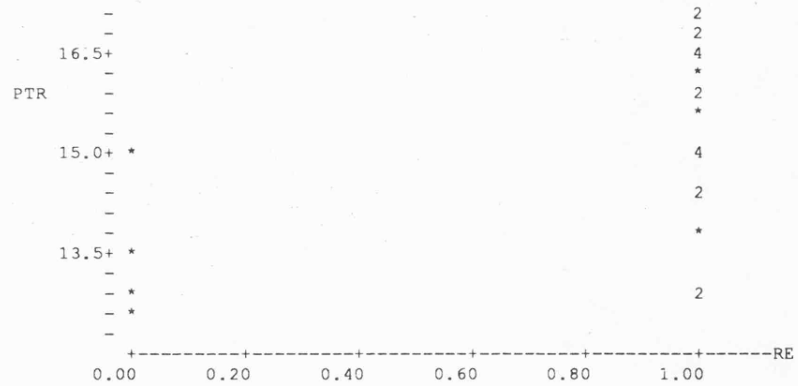

PTR
16.5+
15.0+
13.5+
0.00
0.20
0.40
0.60
0.80
1.00
RM

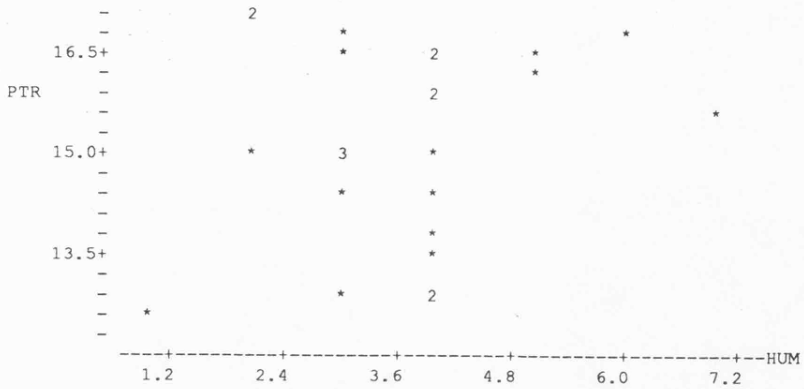
APPENDIX 10 contd.

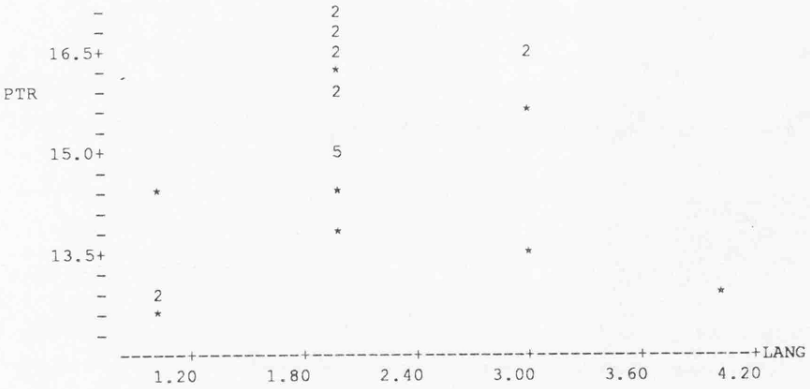
YEAR 5

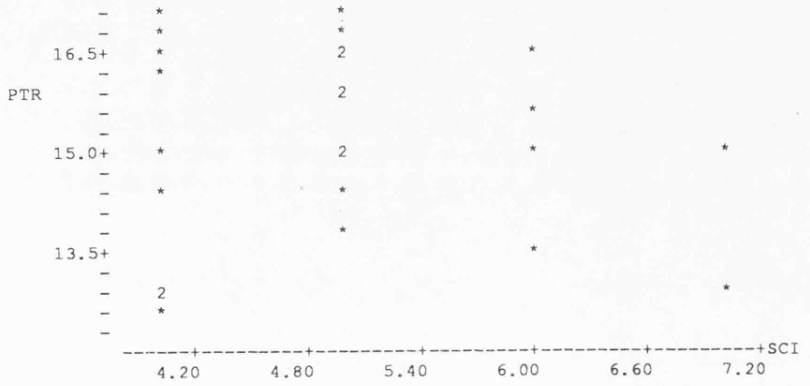


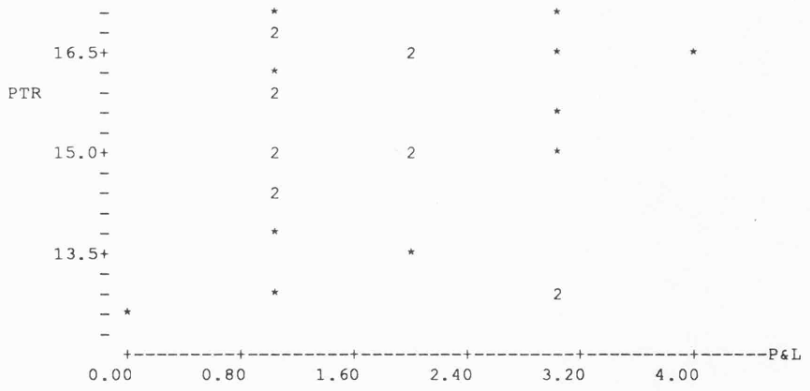


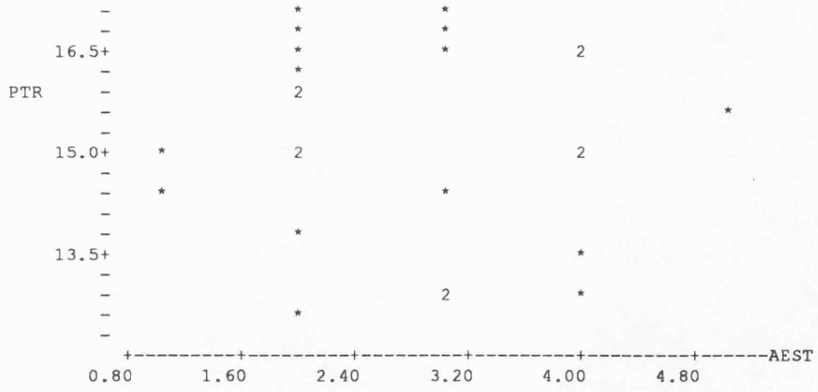


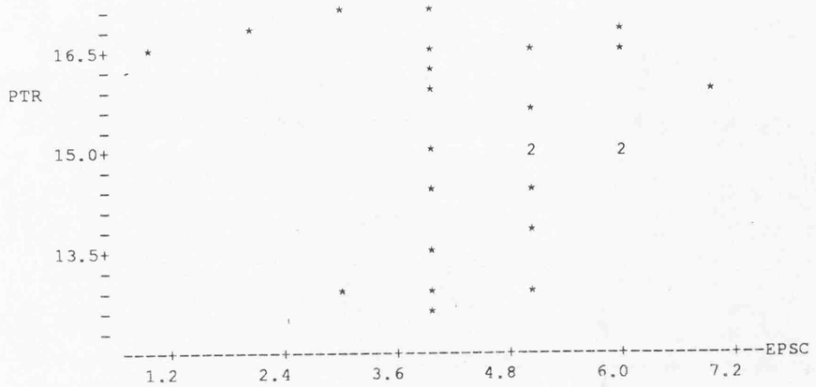


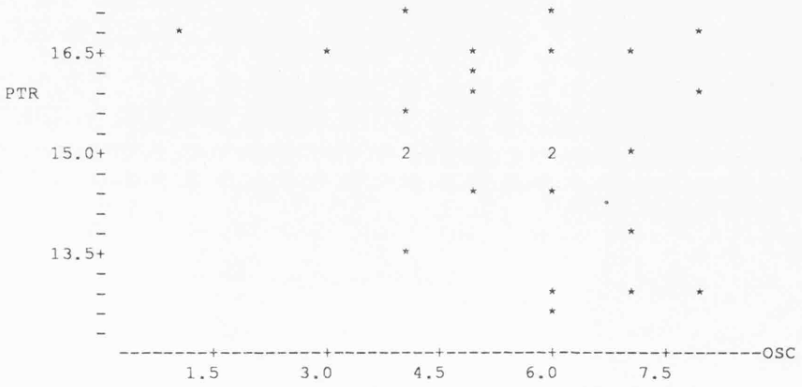

PTR
16.5+
15.0+
13.5+
1.20
1.80
2.40
3.00
3.60
4.20
LANG

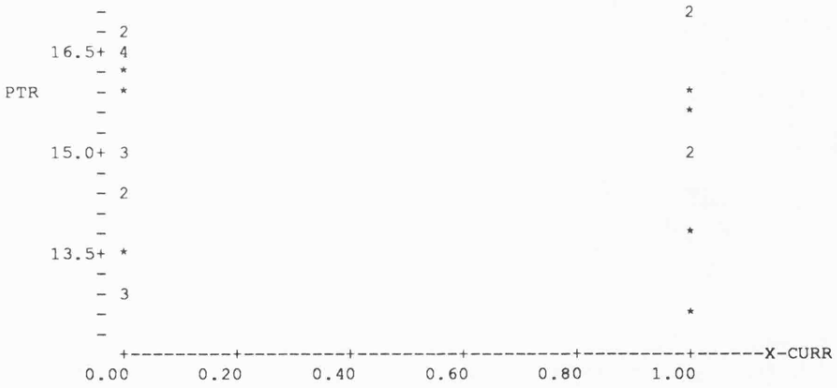

PTR
16.5+
15.0+
13.5+
4.20
4.80
5.40
6.00
6.60
7.20
SCI

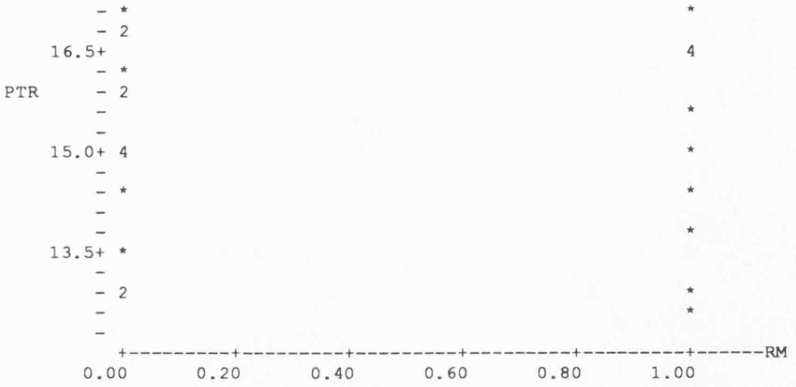

PTR
16.5+
15.0+
13.5+
0.00
0.80
1.60
2.40
3.20
4.00
P&L


PTR
16.5+
15.0+
13.5+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


PTR
16.5+
15.0+
13.5+
1.2
2.4
3.6
4.8
6.0
7.2
EPSC

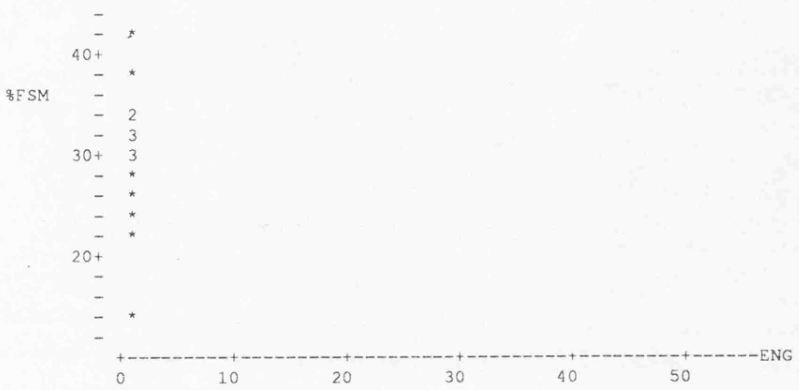

PTR
16.5+
15.0+
13.5+
1.5
3.0
4.5
6.0
7.5
OSC

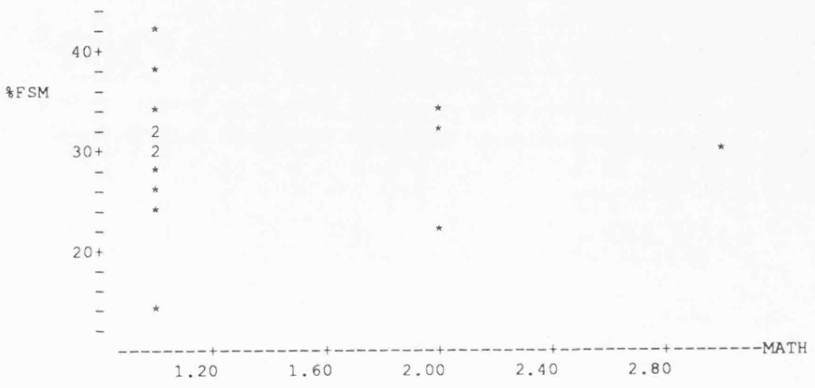

PTR
16.5+
15.0+
13.5+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

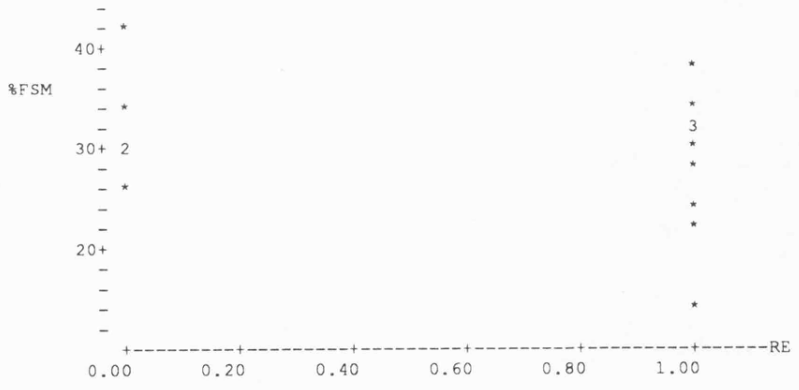

PTR
16.5+
15.0+
13.5+
0.00
0.20
0.40
0.60
0.80
1.00
RM

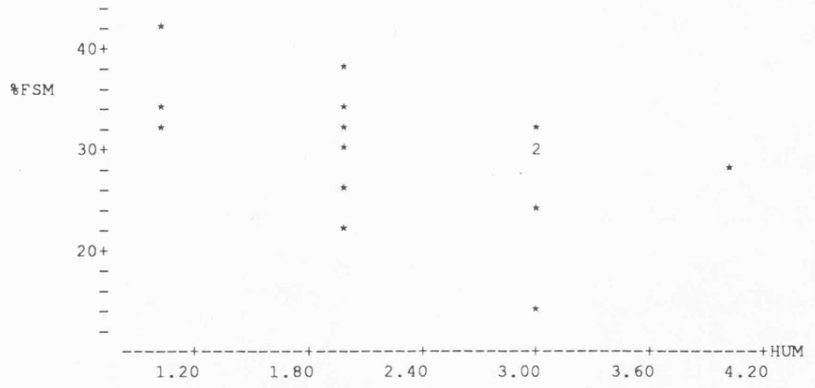
APPENDIX 11 Newham: numbers of subjects in each subject grouping versus score on FSM variable, Years 3 and 5

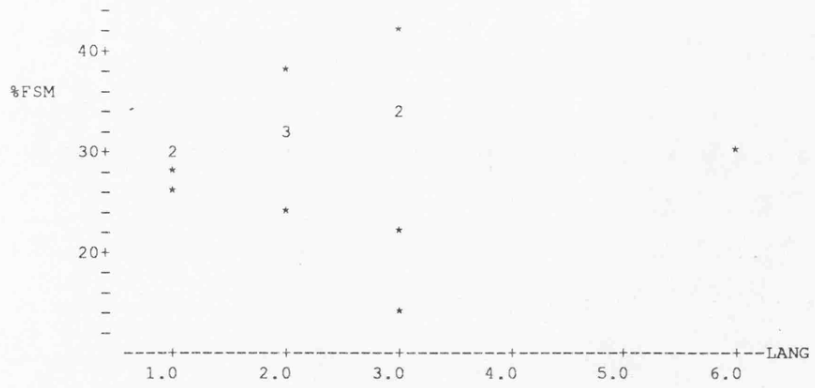
YEAR 3

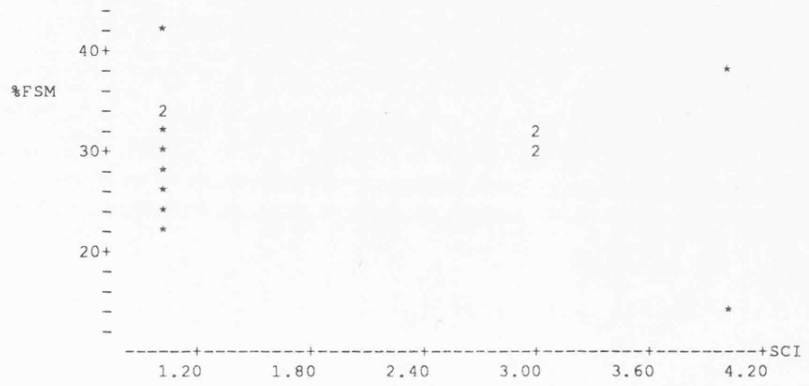


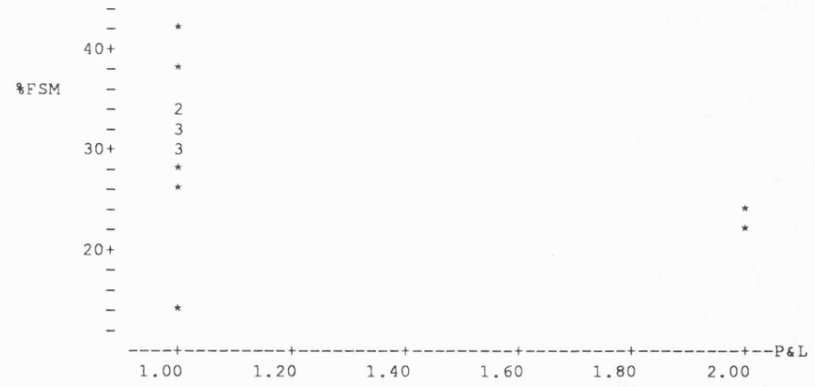


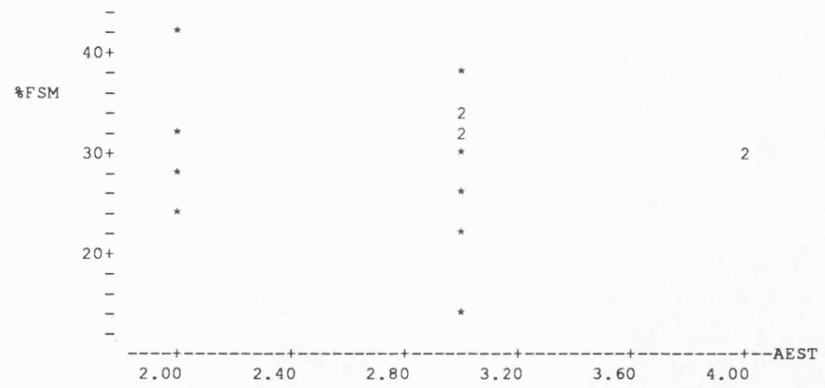


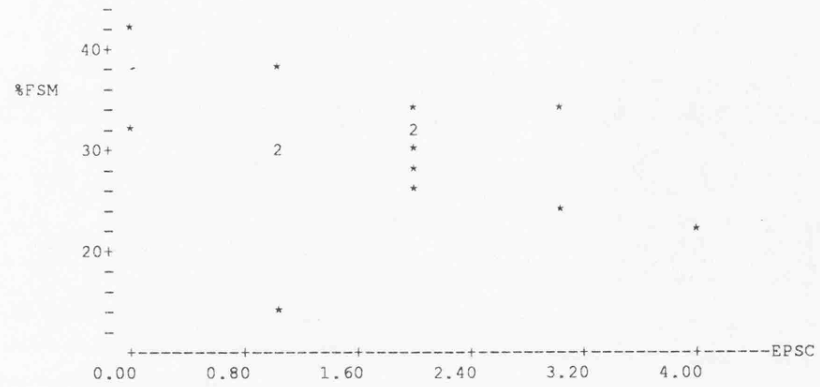


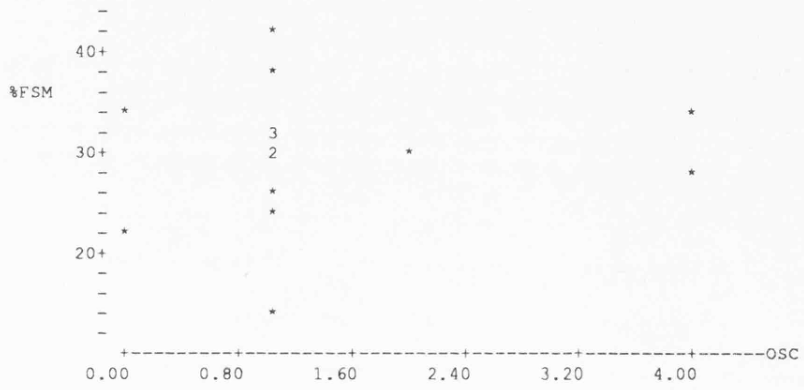

%FSM
40+
30+
20+
1.0
2.0
3.0
4.0
5.0
6.0
LANG

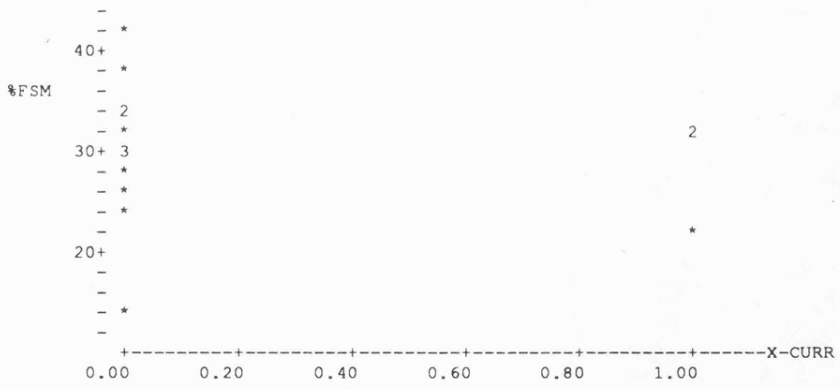

%FSM
40+
30+
20+
1.20
1.80
2.40
3.00
3.60
4.20
SCI

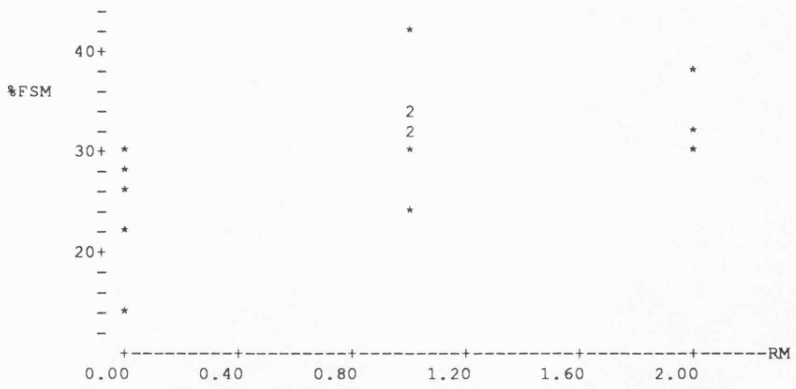

%FSM
40+
30+
20+
1.00
1.20
1.40
1.60
1.80
2.00
P&L


%FSM
40+
30+
20+
2.00
2.40
2.80
3.20
3.60
4.00
AEST


%FSM
40+
30+
20+
0.00
0.80
1.60
2.40
3.20
4.00
EPSC

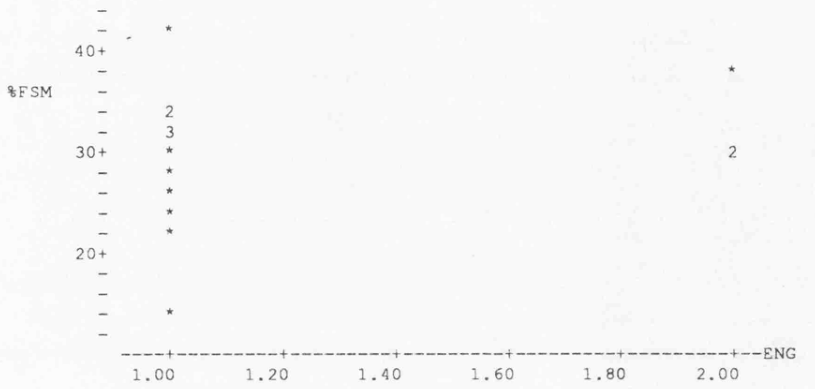

%FSM
40+
30+
20+
0.00
0.80
1.60
2.40
3.20
4.00
OSC

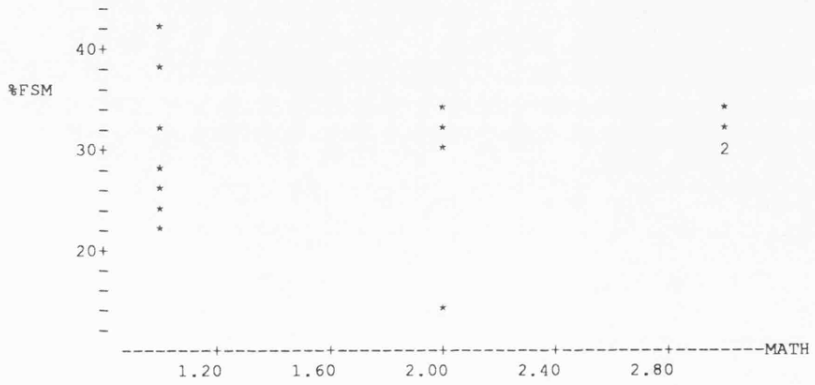

%FSM
40+
30+
20+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

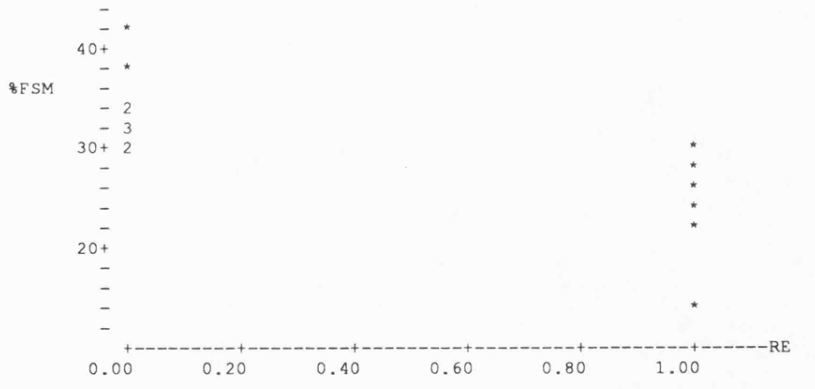

%FSM
40+
30+
20+
0.00
0.40
0.80
1.20
1.60
2.00
RM

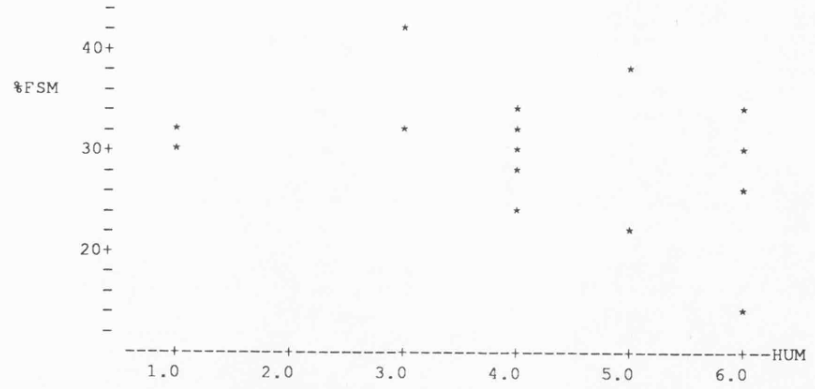
APPENDIX 11 contd.

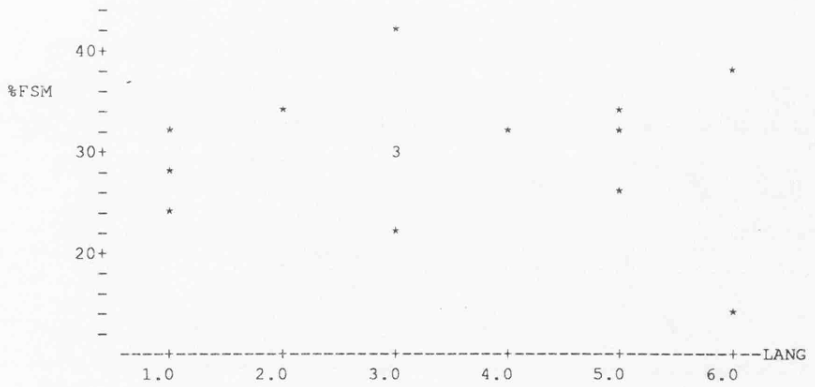
YEAR 5

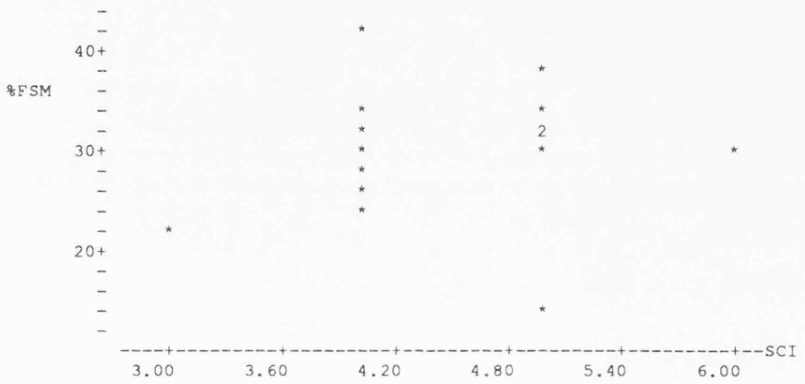


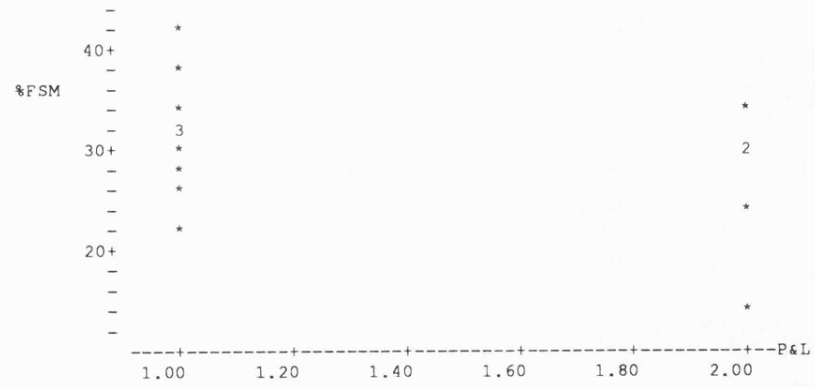


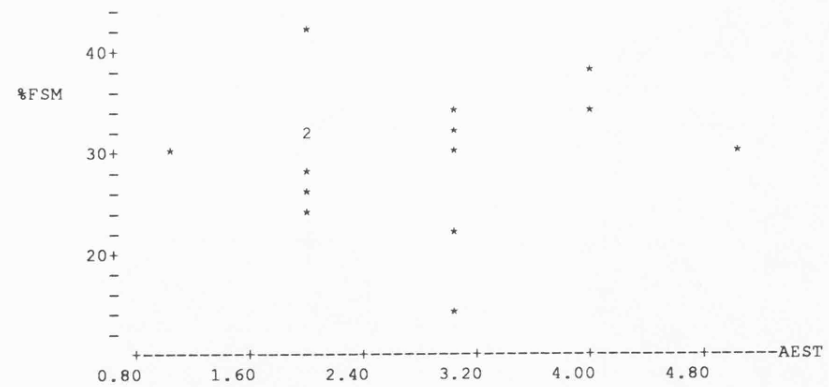


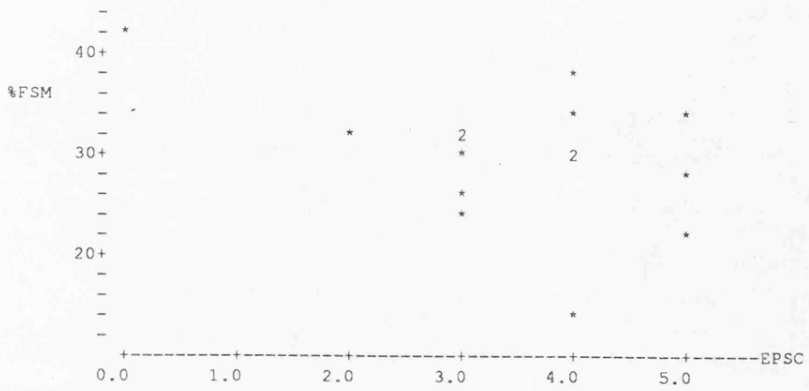


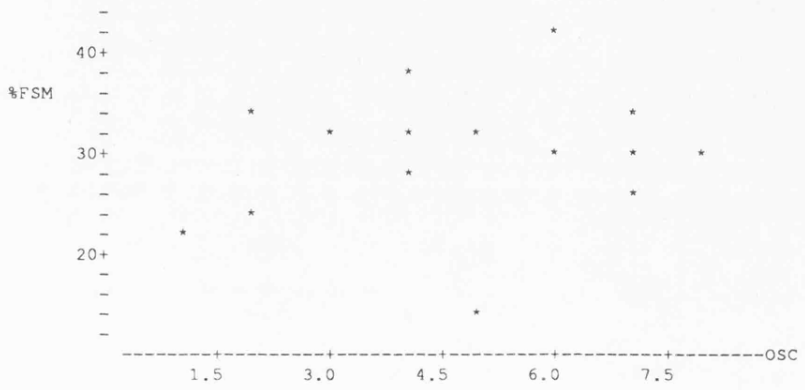

%FSM
40+
30+
20+
1.0
2.0
3.0
4.0
5.0
6.0
LANG

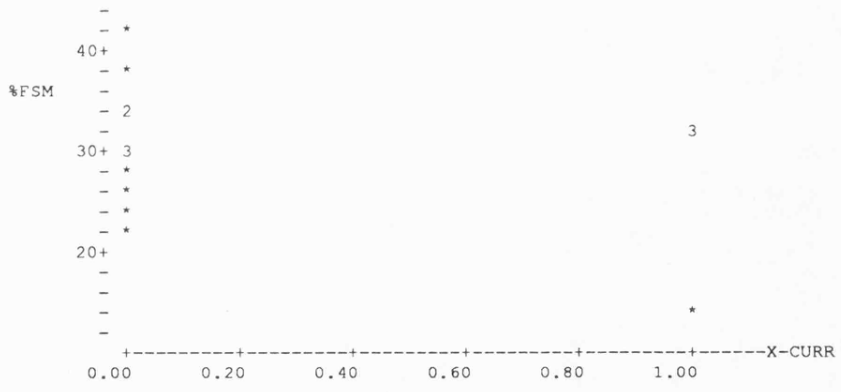

%FSM
40+
30+
20+
3.00
3.60
4.20
4.80
5.40
6.00
SCI

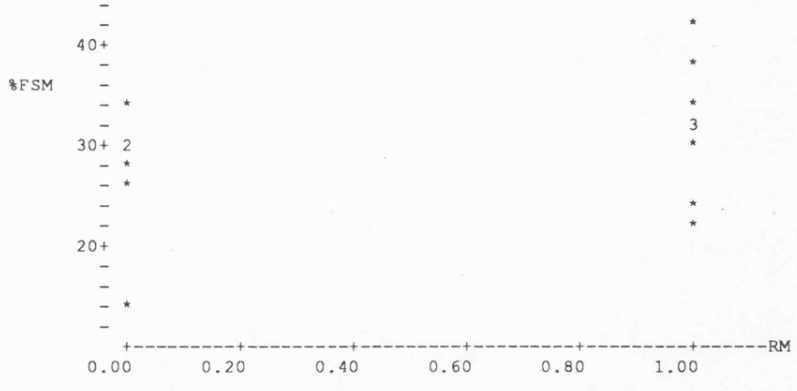

%FSM
40+
30+
20+
1.00
1.20
1.40
1.60
1.80
2.00
P&L


%FSM
40+
30+
20+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


%FSM
40+
30+
20+
2
2
0.0
1.0
2.0
3.0
4.0
5.0
EPSC

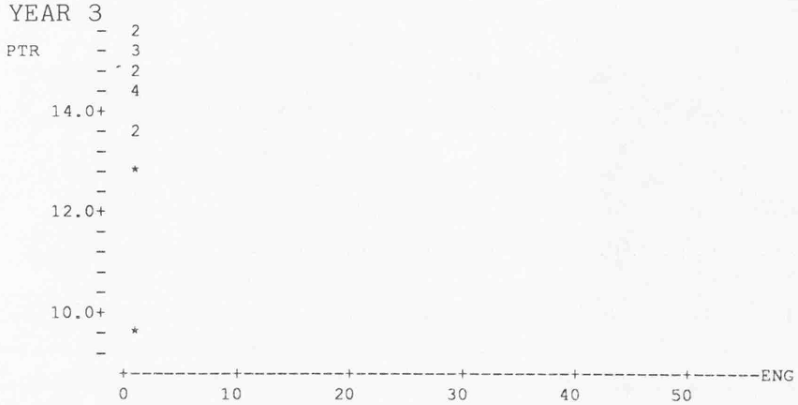

%FSM
40+
30+
20+
1.5
3.0
4.5
6.0
7.5
OSC

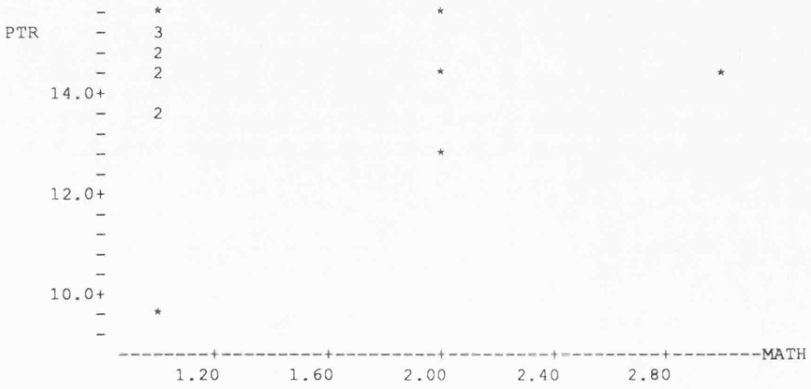

%FSM
40+
30+
20+
2
3
3
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

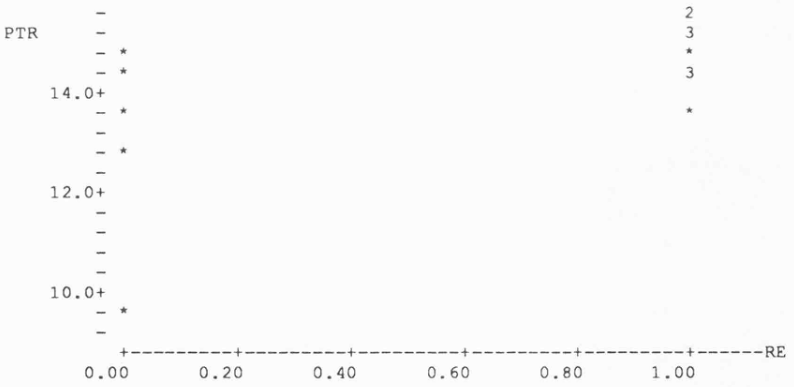

%FSM
40+
30+
20+
3
2
0.00
0.20
0.40
0.60
0.80
1.00
RM

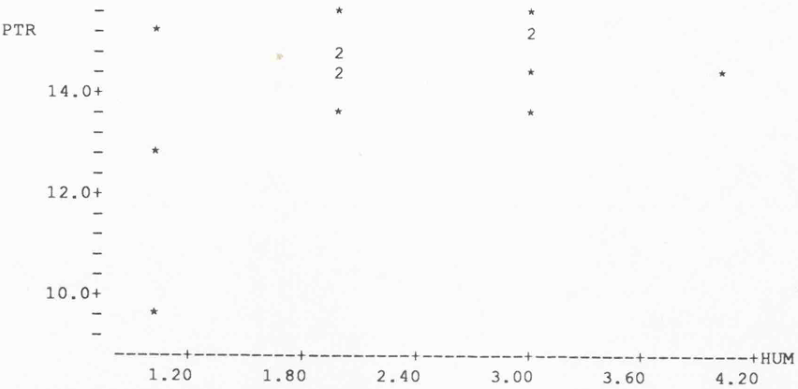
APPENDIX 12 Newham: numbers of subjects in each subject grouping versus score on PTR variable, Years 3 and 5

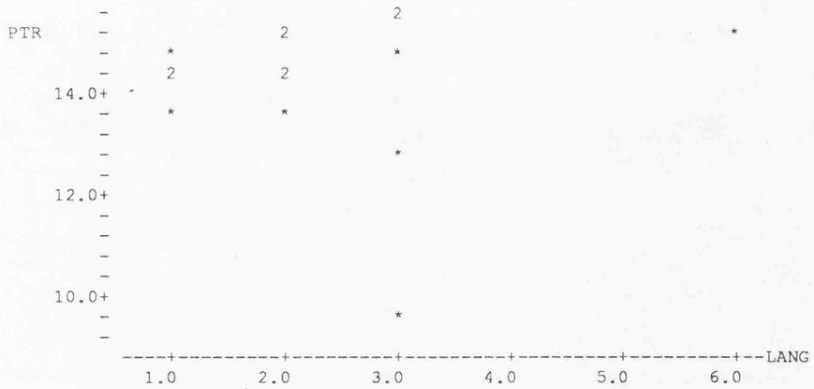
YEAR 3

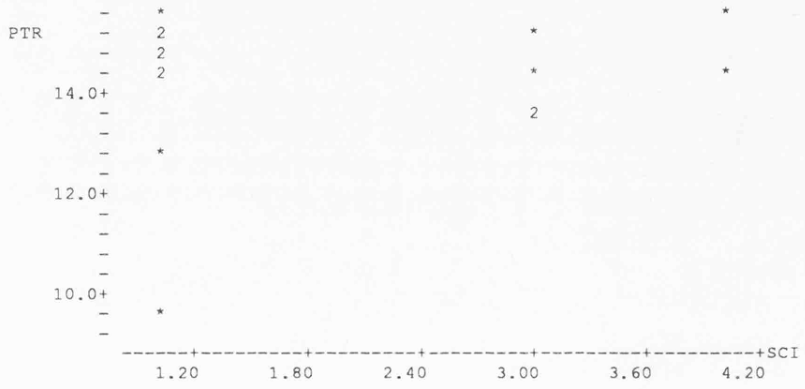


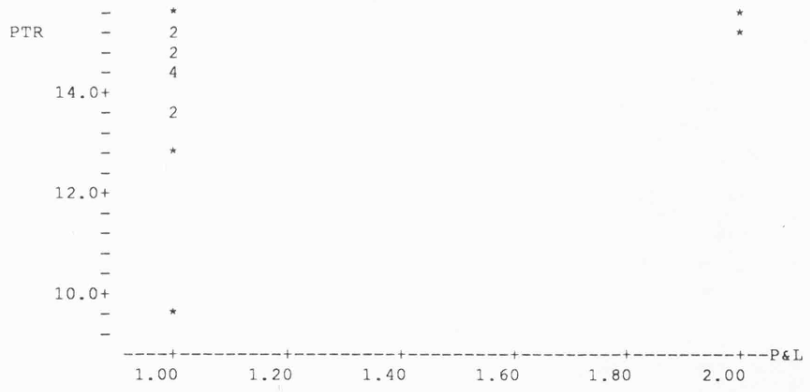


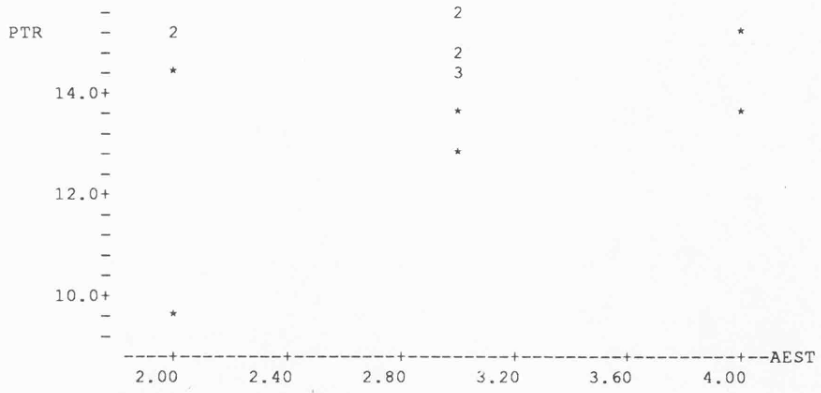


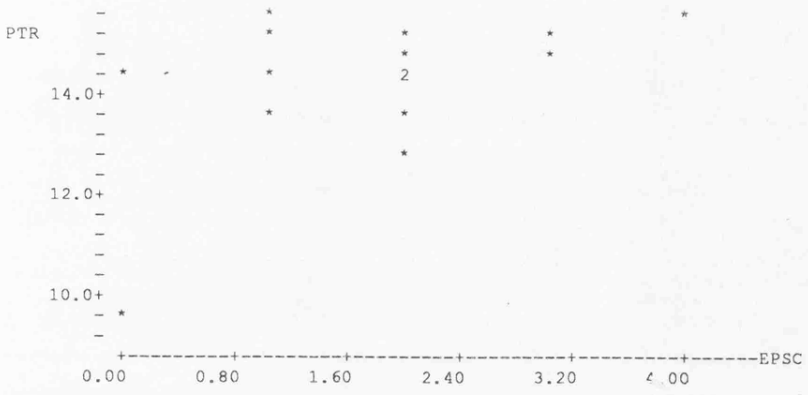


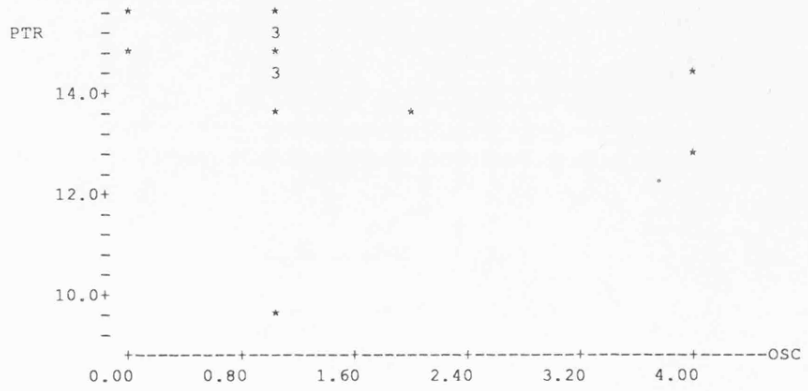

PTR
14.0+
12.0+
10.0+
LANG
1.0
2.0
3.0
4.0
5.0
6.0

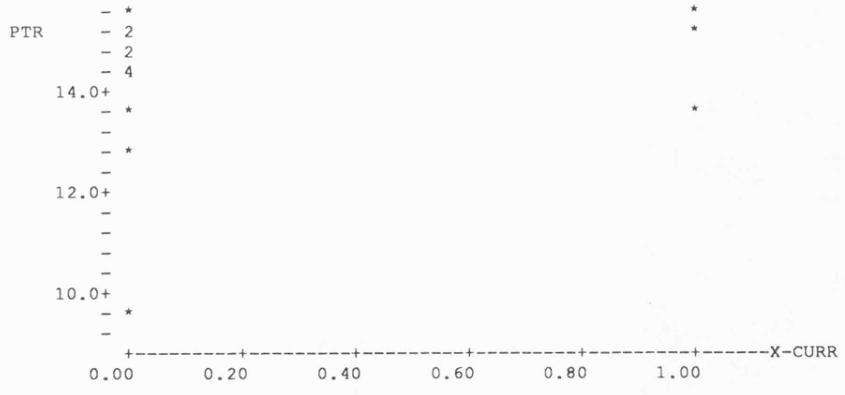

PTR
14.0+
12.0+
10.0+
SCI
1.20
1.80
2.40
3.00
3.60
4.20

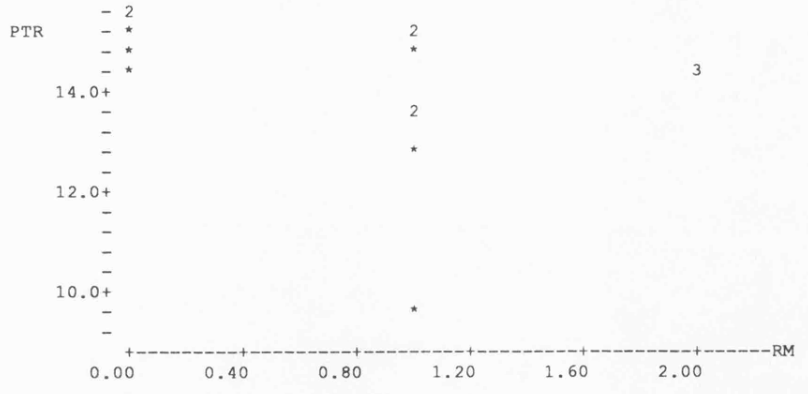

PTR
14.0+
12.0+
10.0+
P&L
1.00
1.20
1.40
1.60
1.80
2.00


PTR
14.0+
12.0+
10.0+
AEST
2.00
2.40
2.80
3.20
3.60
4.00


PTR
14.0+
12.0+
10.0+
0.00
0.80
1.60
2.40
3.20
4.00
EPSC

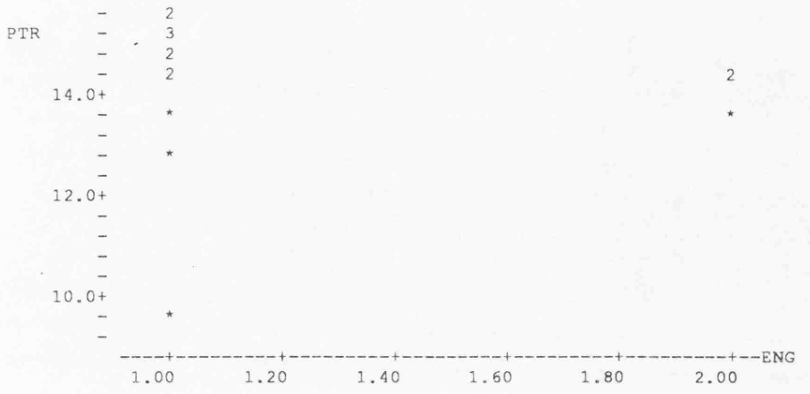

PTR
14.0+
12.0+
10.0+
0.00
0.80
1.60
2.40
3.20
4.00
OSC

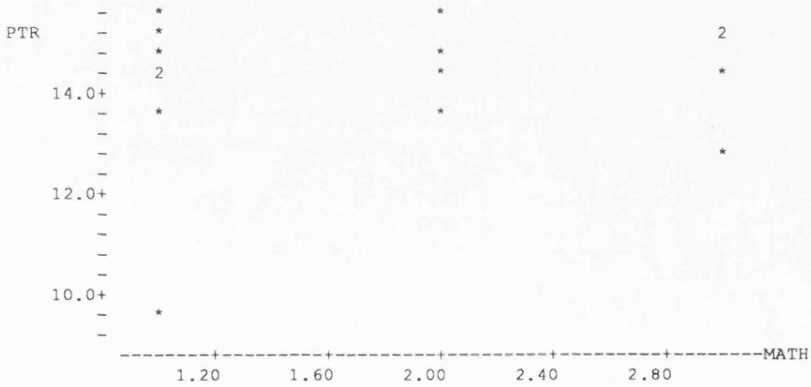

PTR
14.0+
12.0+
10.0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

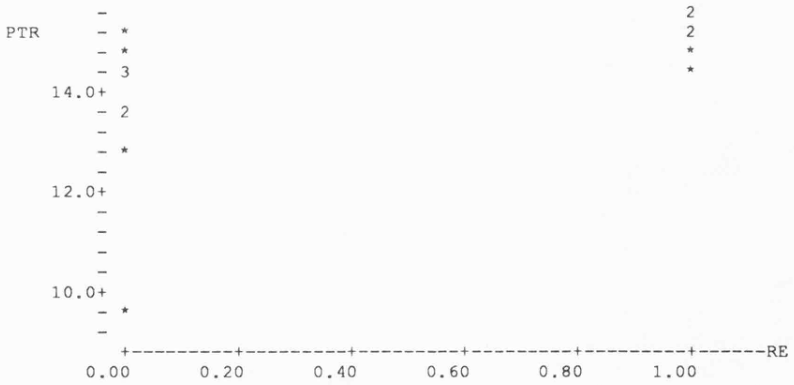

PTR
14.0+
12.0+
10.0+
0.00
0.40
0.80
1.20
1.60
2.00
RM

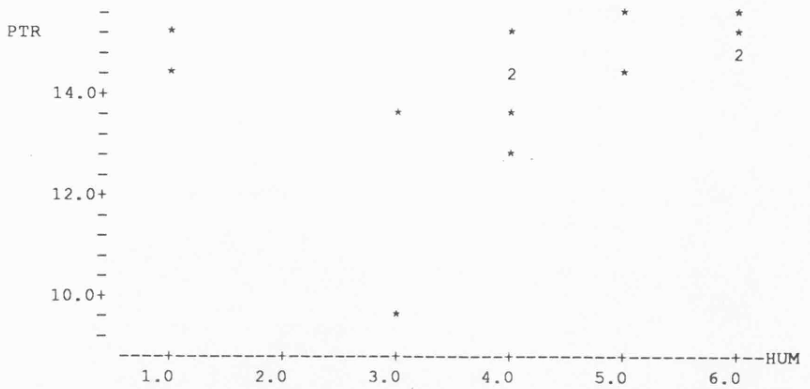
APPENDIX 12 contd.

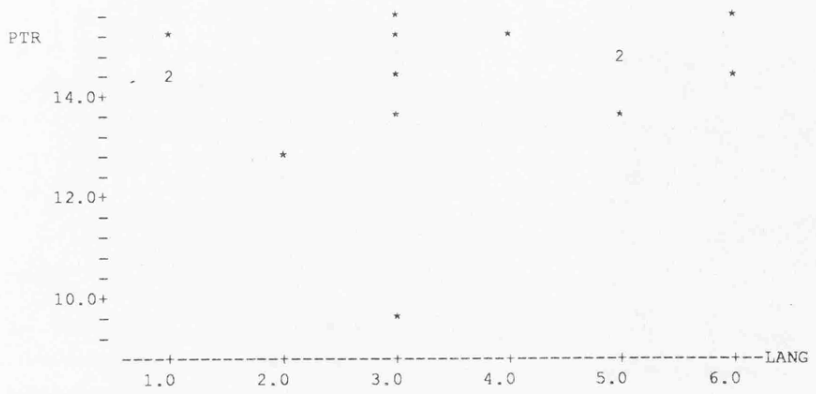
YEAR 5

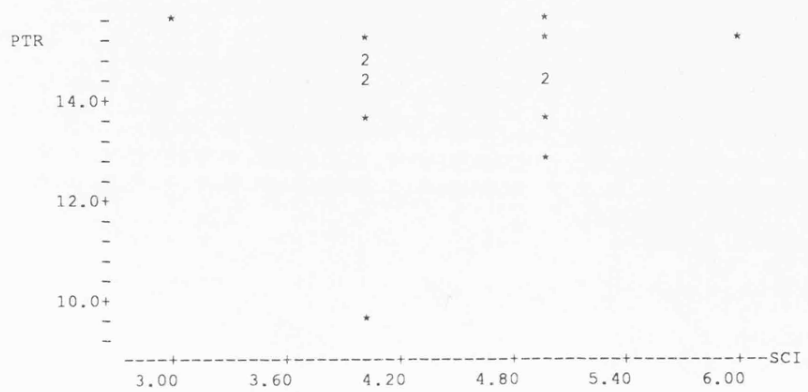









PTR
14.0+
12.0+
10.0+
1.0
2.0
3.0
4.0
5.0
6.0
LANG


PTR
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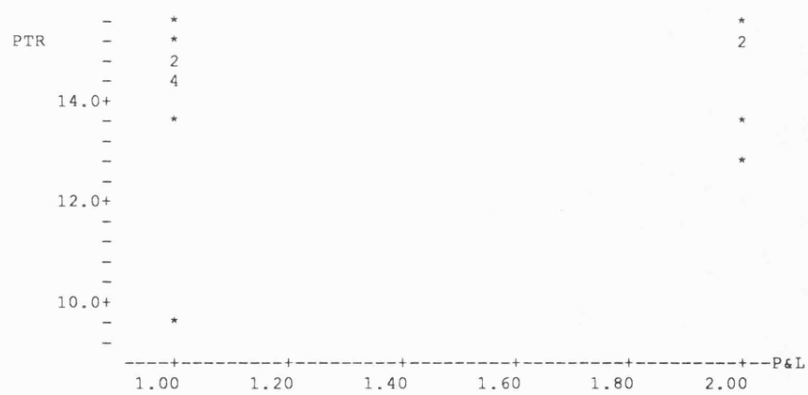
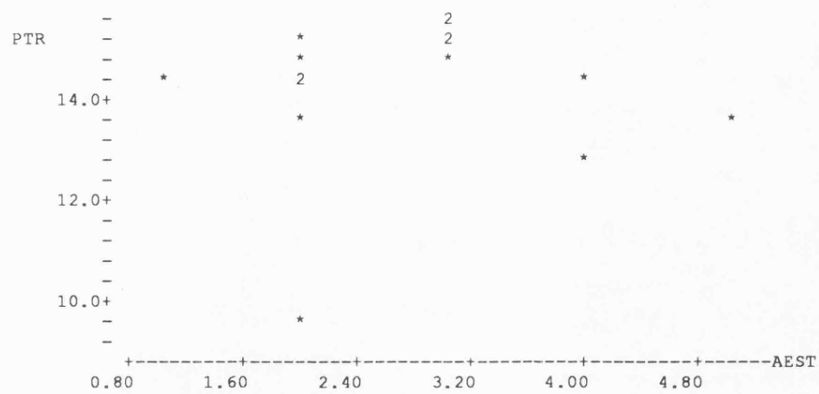
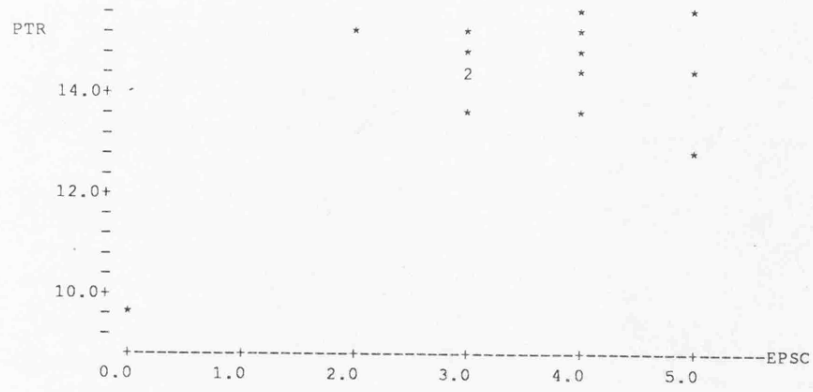
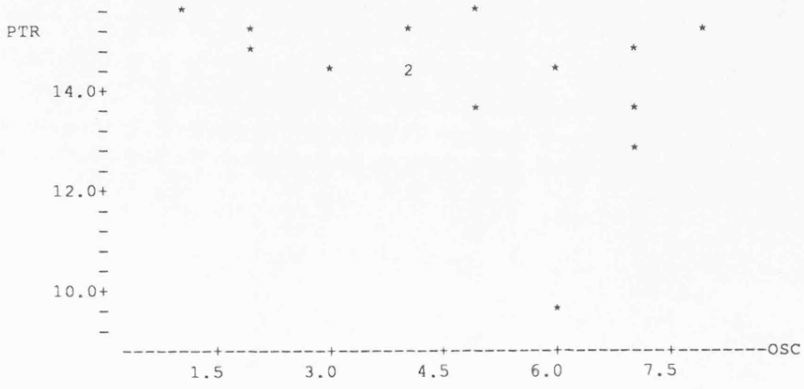
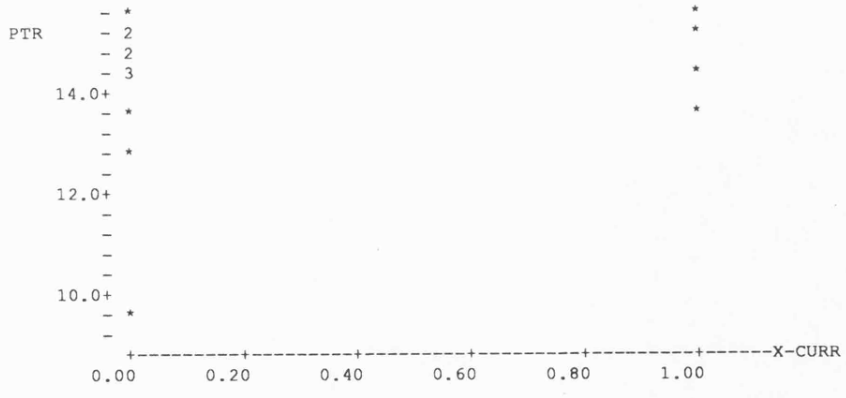
12.0+
10.0+
3.00
3.60
4.20
4.80
5.40
6.00
SCI

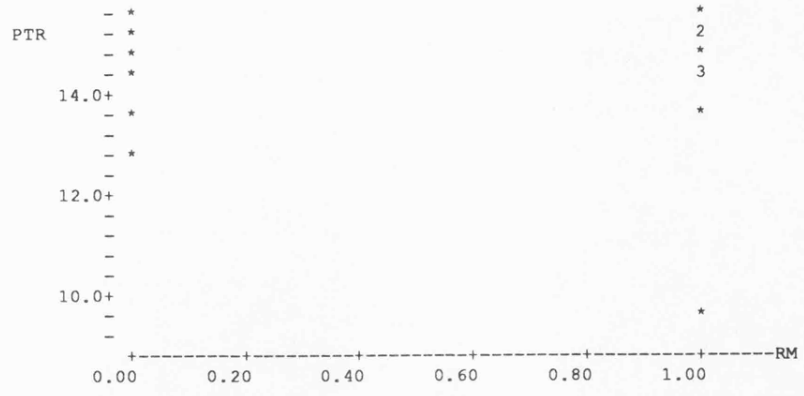

PTR
14.0+
12.0+
10.0+
1.00
1.20
1.40
1.60
1.80
2.00
P&L


PTR
14.0+
12.0+
10.0+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


PTR
14.0+
12.0+
10.0+
0.0
1.0
2.0
3.0
4.0
5.0
EPSC


PTR
14.0+
12.0+
10.0+
1.5
3.0
4.5
6.0
7.5
OSC


PTR
14.0+
12.0+
10.0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR


PTR
14.0+
12.0+
10.0+
0.00
0.20
0.40
0.60
0.80
1.00
RM

APPENDIX 13 Sheffield: subject grouping frequency distributions Years 1, 3 and 5

YEAR 1

Histogram of ENG

Midpoint	Count	
6.00	1	*
8.00	2	**
10.00	0	
12.00	6	******
14.00	4	****
16.00	5	*****

Histogram of MATH

Midpoint	Count	
10.00	1	*
12.00	5	*****
14.00	6	******
16.00	6	******

Histogram of RE

Midpoint	Count	
0.00	4	****
2.00	2	**
4.00	8	********
6.00	2	**
8.00	2	**

Histogram of HUM

Midpoint	Count	
8.00	2	**
10.00	4	****
12.00	3	***
14.00	6	******
16.00	2	**
18.00	1	*

Histogram of LANG

Midpoint	Count	
6.00	2	**
8.00	3	***
10.00	8	********
12.00	3	***
14.00	1	*
16.00	1	*

Histogram of SCI

Midpoint	Count	
8.00	1	*
10.00	7	*******
12.00	4	****
14.00	4	****
16.00	2	**

Histogram of P&L

Midpoint	Count	
10.00	12	**********
12.00	2	**
14.00	1	*
16.00	3	***

Histogram of AEST

Midpoint	Count	
2.00	1	*
4.00	2	**
6.00	2	**
8.00	2	**
10.00	7	*******
12.00	3	***
14.00	0	
16.00	1	*

Histogram of EPSC

Midpoint	Count	
0.00	3	***
2.00	0	
4.00	3	***
6.00	4	****
8.00	4	****
10.00	4	****

Histogram of OSC

Midpoint	Count	
2.00	1	*
4.00	5	*****
6.00	6	******
8.00	1	*
10.00	0	
12.00	0	
14.00	3	***
16.00	0	
18.00	1	*
20.00	0	
22.00	0	
24.00	1	*

Histogram of X-CURR

Midpoint	Count	
0.00	13	**********
2.00	3	***
4.00	0	
6.00	2	**

Histogram of RM

Midpoint	Count	
0.00	15	**********
2.00	2	**
4.00	0	
6.00	1	*

APPENDIX 13 contd.

YEAR 3

Histogram of ENG

Midpoint	Count	
6.00	2	**
8.00	4	****
10.00	5	*****
12.00	15	***************
14.00	5	*****
16.00	1	*
18.00	1	*

Histogram of MATH

Midpoint	Count	
8.00	3	***
10.00	4	****
12.00	8	********
14.00	12	************
16.00	5	*****
18.00	0	
20.00	1	*

Histogram of RE

Midpoint	Count	
0.00	9	*********
2.00	12	************
4.00	8	********
6.00	3	***
8.00	1	*

Histogram of HUM

Midpoint	Count	
6.00	1	*
8.00	8	********
10.00	4	****
12.00	8	********
14.00	7	*******
16.00	4	****
18.00	0	
20.00	1	*

Histogram of LANG

Midpoint	Count	
6.00	2	**
8.00	7	*******
10.00	6	******
12.00	8	********
14.00	6	******
16.00	2	**
18.00	2	**

Histogram of SCI

Midpoint	Count	
12.00	9	*********
14.00	13	*************
16.00	7	*******
18.00	3	***
20.00	1	*

Histogram of P&L

Midpoint	Count	
4.00	3	***
6.00	6	******
8.00	9	*********
10.00	10	**********
12.00	5	*****

Histogram of AEST

Midpoint	Count	
0.00	1	*
2.00	2	**
4.00	8	********
6.00	3	***
8.00	8	********
10.00	6	******
12.00	4	****
14.00	0	
16.00	0	
18.00	1	*

Histogram of EPSC

Midpoint	Count	
0.00	2	**
2.00	2	**
4.00	5	*****
6.00	4	****
8.00	7	*******
10.00	5	*****
12.00	5	*****
14.00	0	
16.00	1	*
18.00	1	*
20.00	1	*

Histogram of OSC

Midpoint	Count	
0.00	1	*
2.00	0	
4.00	4	****
6.00	9	*********
8.00	5	*****
10.00	2	**
12.00	4	****
14.00	3	***
16.00	1	*
18.00	0	
20.00	3	***
22.00	0	
24.00	1	*

Histogram of X-CURR

Midpoint	Count	
0.00	26	**************************
2.00	2	**
4.00	4	****
6.00	0	
8.00	1	*

Histogram of RM

Midpoint	Count	
0.00	24	************************
2.00	5	*****
4.00	2	**
6.00	2	**

APPENDIX 13 contd.

YEAR 5

Histogram of ENG

Midpoint	Count	
8.00	2	**
10.00	8	********
12.00	9	*********
14.00	12	************
16.00	2	**

Histogram of MATH

Midpoint	Count	
6.00	1	*
8.00	3	***
10.00	3	***
12.00	8	********
14.00	12	************
16.00	6	******

Histogram of RE

Midpoint	Count	
0.00	19	********************
2.00	11	**********
4.00	1	*
6.00	1	*
8.00	0	
10.00	1	*

Histogram of HUM

Midpoint	Count	
4.00	1	*
6.00	3	***
8.00	3	***
10.00	7	*******
12.00	8	********
14.00	4	****
16.00	3	***
18.00	2	**
20.00	1	*
22.00	1	*

Histogram of LANG

Midpoint	Count	
2.00	4	****
4.00	11	**********
6.00	7	*******
8.00	9	*********
10.00	1	*
12.00	1	*

Histogram of SCI

Midpoint	Count	
6.00	1	*
8.00	0	
10.00	3	***
12.00	6	******
14.00	10	**********
16.00	8	********
18.00	4	****
20.00	1	*

Histogram of P&L

Midpoint	Count	
0.00	6	******
2.00	2	**
4.00	3	***
6.00	10	**********
8.00	6	******
10.00	3	***
12.00	1	*
14.00	1	*
16.00	0	
18.00	1	*

Histogram of AEST

Midpoint	Count	
0.00	2	**
2.00	2	**
4.00	8	********
6.00	13	*************
8.00	6	******
10.00	1	*
12.00	1	*

Histogram of EPSC

Midpoint	Count	
4.00	2	**
6.00	1	*
8.00	4	****
10.00	5	*****
12.00	5	*****
14.00	6	******
16.00	3	***
18.00	3	***
20.00	1	*
22.00	2	**
24.00	1	*

Histogram of OSC

Midpoint	Count	
4.00	1	*
6.00	1	*
8.00	5	*****
10.00	4	****
12.00	5	*****
14.00	6	******
16.00	4	****
18.00	4	****
20.00	0	
22.00	1	*
24.00	1	*
26.00	1	*

Histogram of X-CURR

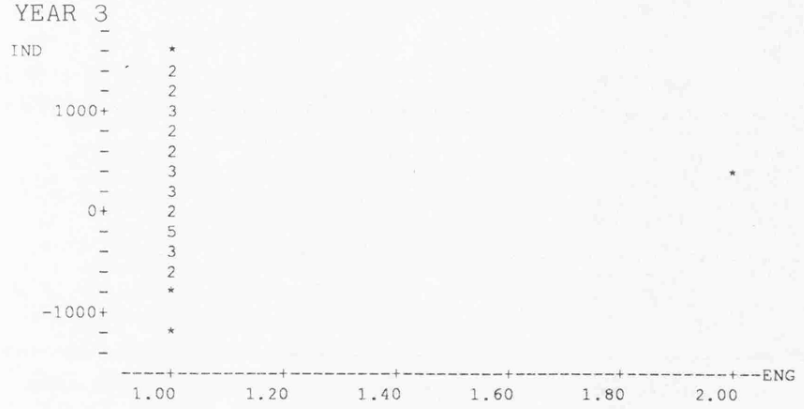
Midpoint	Count	
0.00	18	******************
2.00	4	****
4.00	2	**
6.00	2	**
8.00	2	**
10.00	2	**
12.00	0	
14.00	3	***

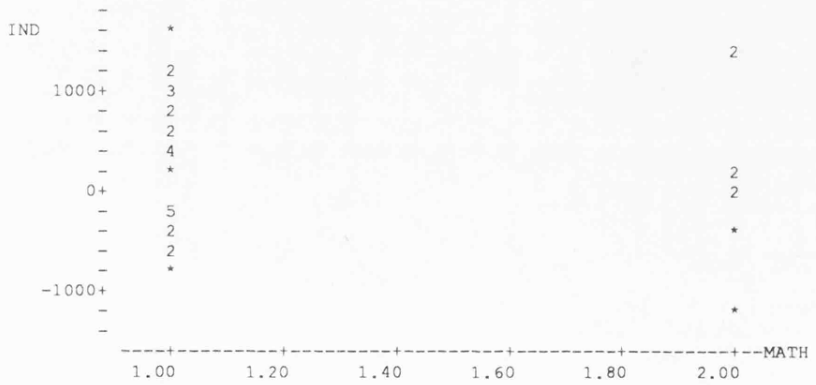
Histogram of RM

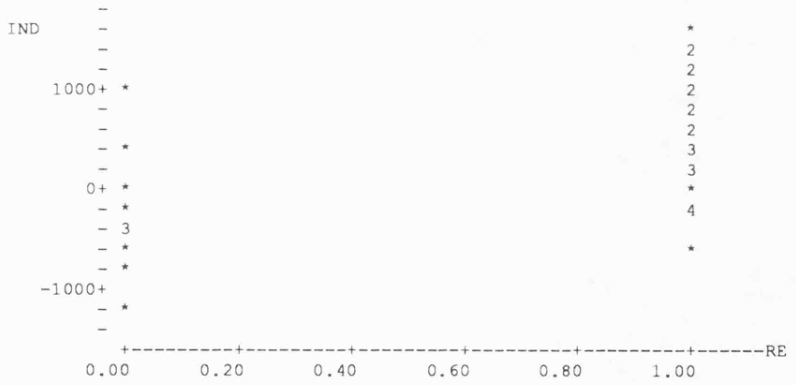
Midpoint	Count	
0.00	24	************************
2.00	6	******
4.00	2	**
6.00	0	
8.00	0	
10.00	1	*

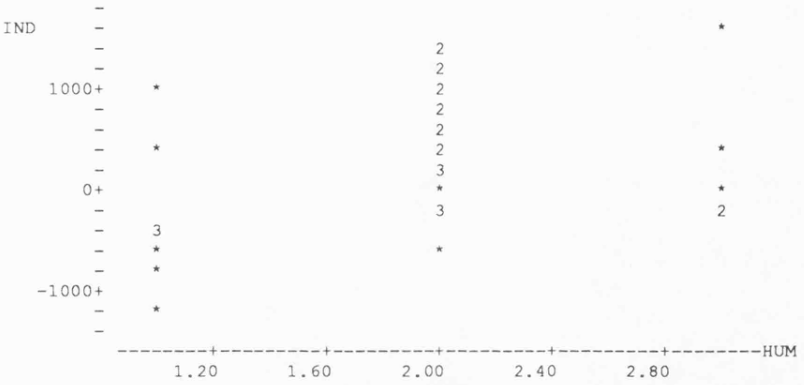
APPENDIX 14 Sheffield: numbers of subjects in each subject grouping versus score on IND variable, Years 3 and 5

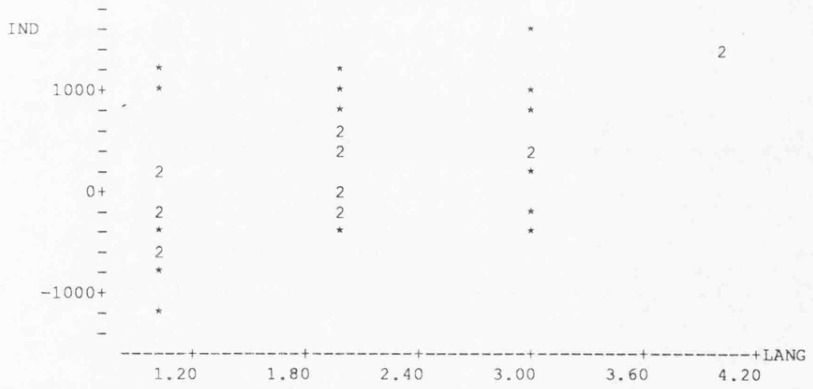
YEAR 3

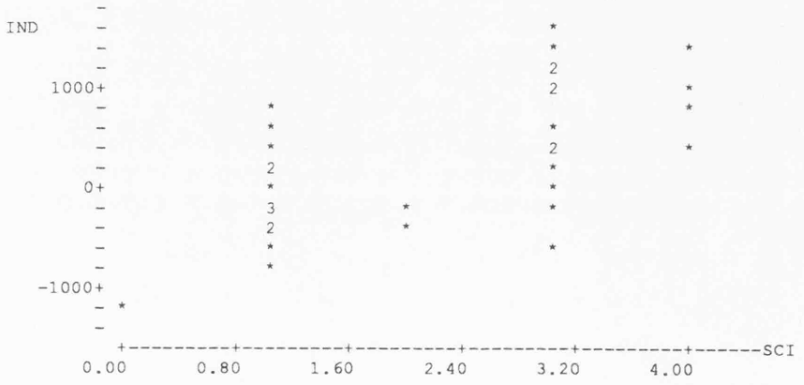


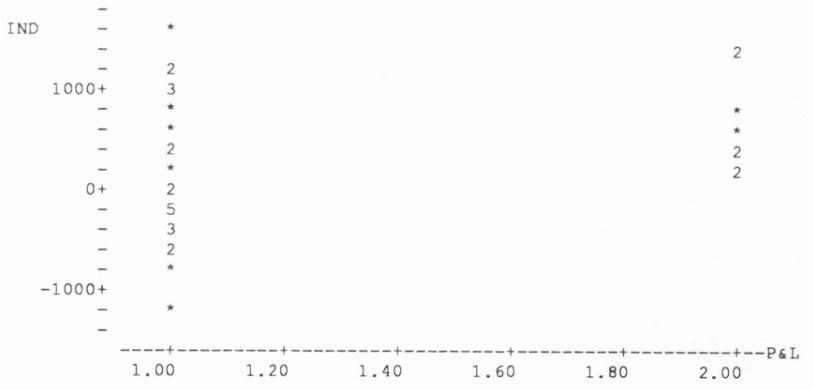


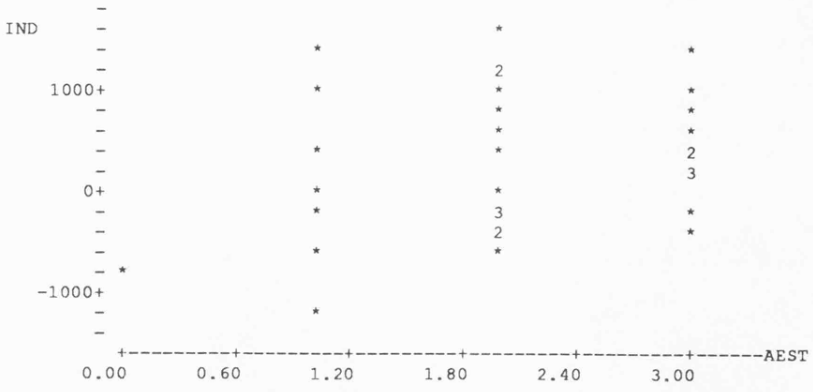


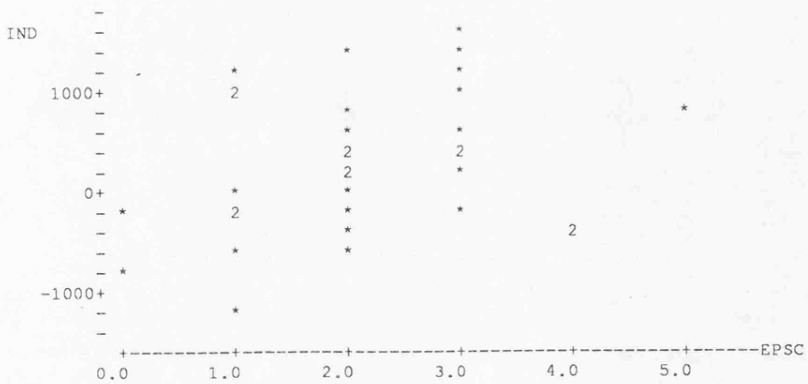


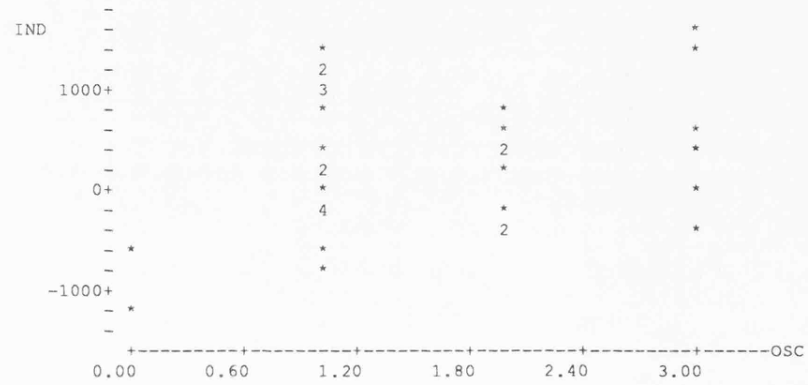

IND
1000+
0+
-1000+
1.20
1.80
2.40
3.00
3.60
4.20
LANG

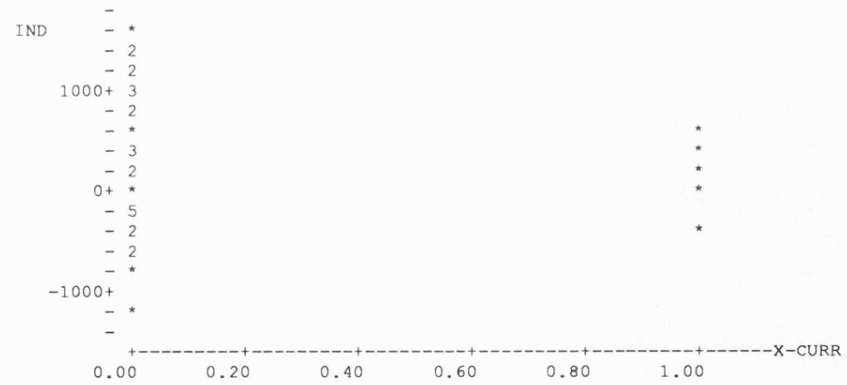

IND
1000+
0+
-1000+
0.00
0.80
1.60
2.40
3.20
4.00
SCI

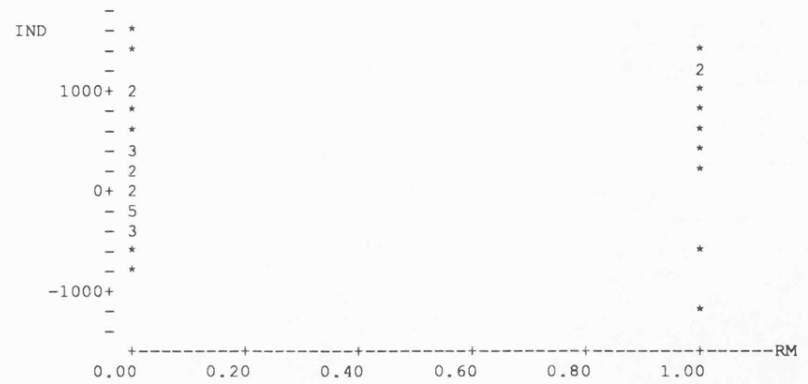

IND
1000+
0+
-1000+
1.00
1.20
1.40
1.60
1.80
2.00
P&L


IND
1000+
0+
-1000+
0.00
0.60
1.20
1.80
2.40
3.00
AEST


IND
1000+
0+
-1000+
0.0
1.0
2.0
3.0
4.0
5.0
EPSC

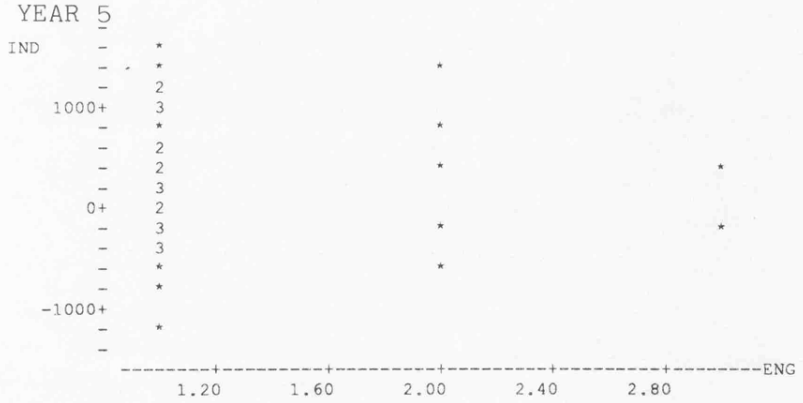

IND
1000+
0+
-1000+
0.00
0.60
1.20
1.80
2.40
3.00
OSC

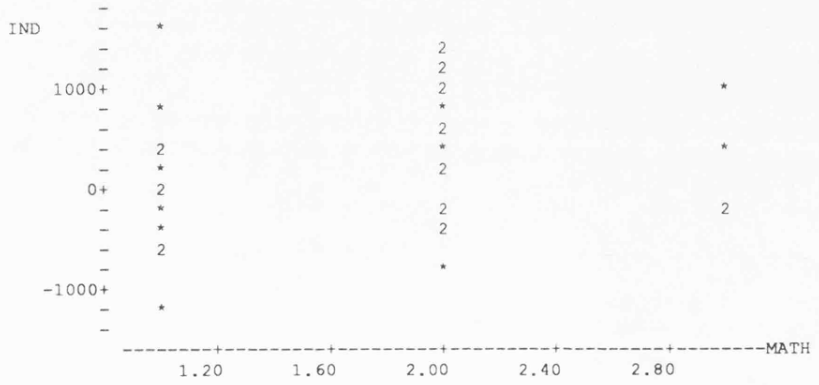

IND
1000+
0+
-1000+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

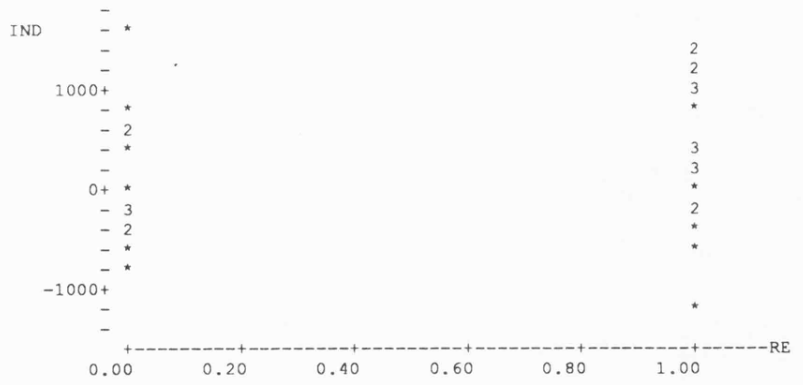

IND
1000+
0+
-1000+
0.00
0.20
0.40
0.60
0.80
1.00
RM

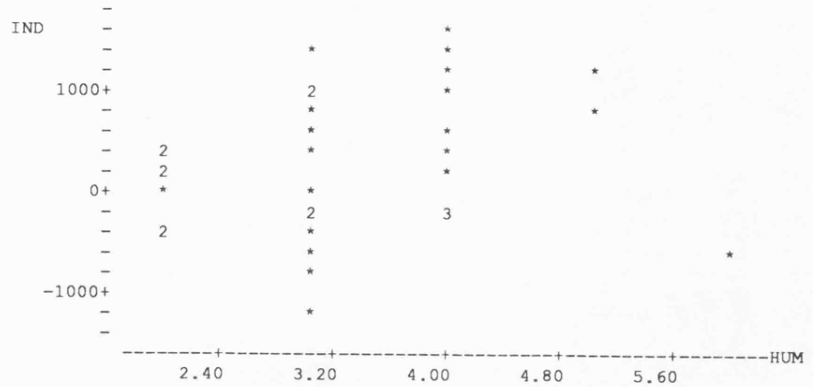
APPENDIX 14 contd.

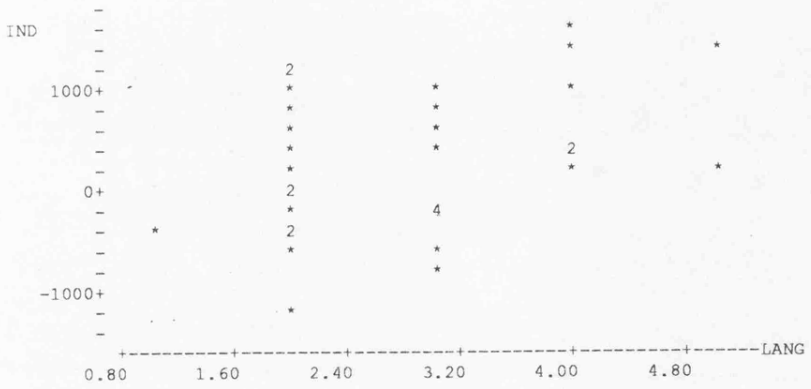
YEAR 5

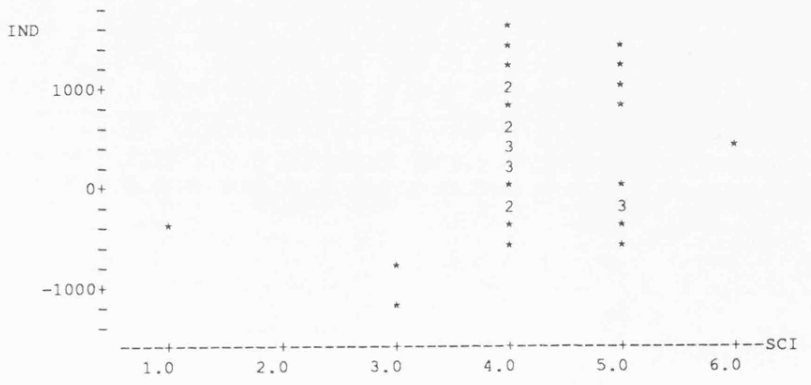


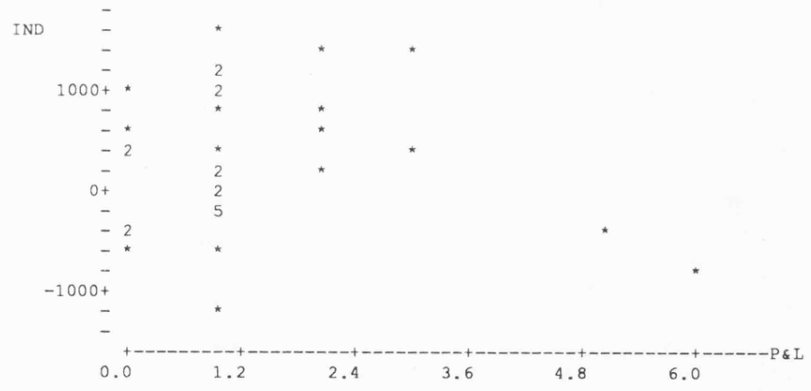


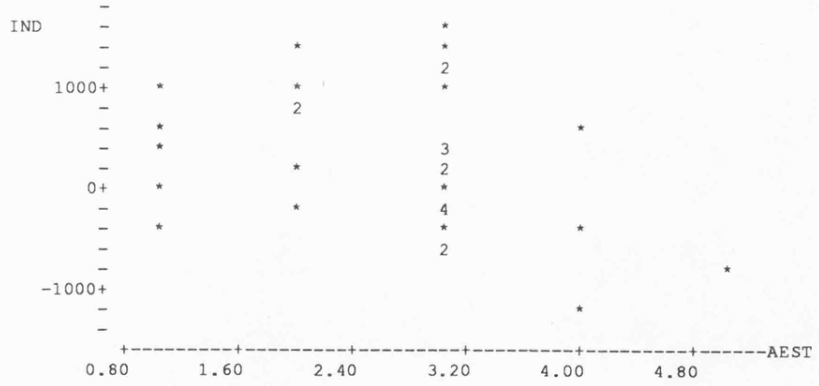


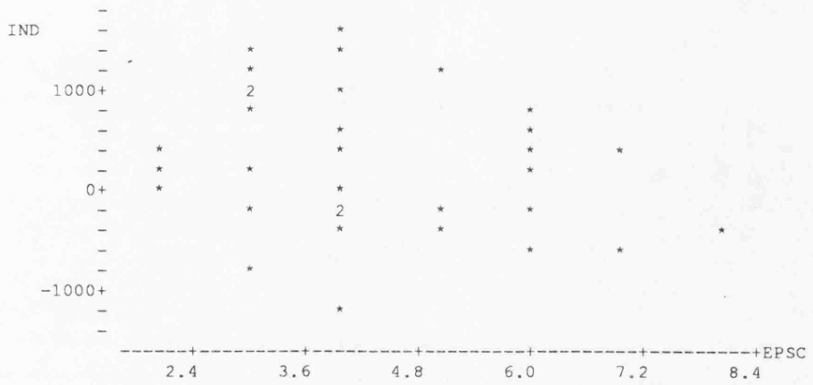


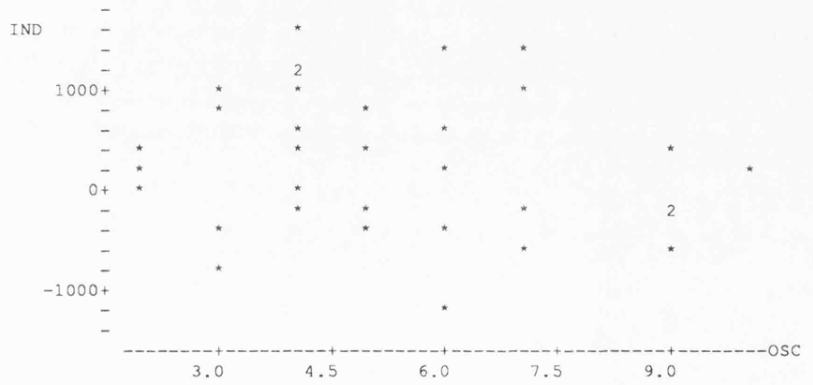

IND
1000+
0+
-1000+
LANG
0.80
1.60
2.40
3.20
4.00
4.80

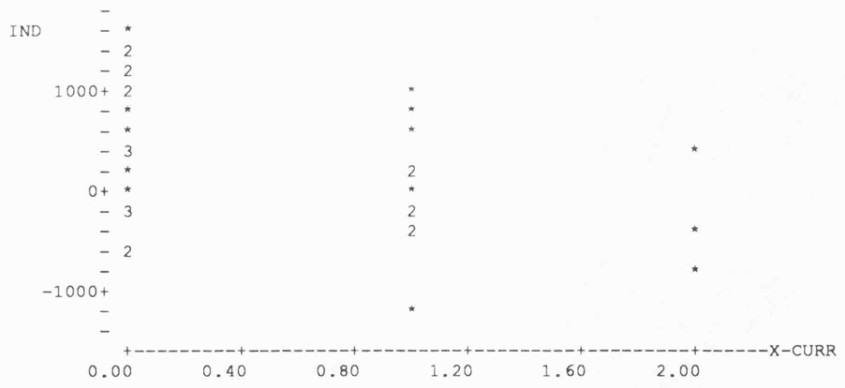

IND
1000+
0+
-1000+
SCI
1.0
2.0
3.0
4.0
5.0
6.0

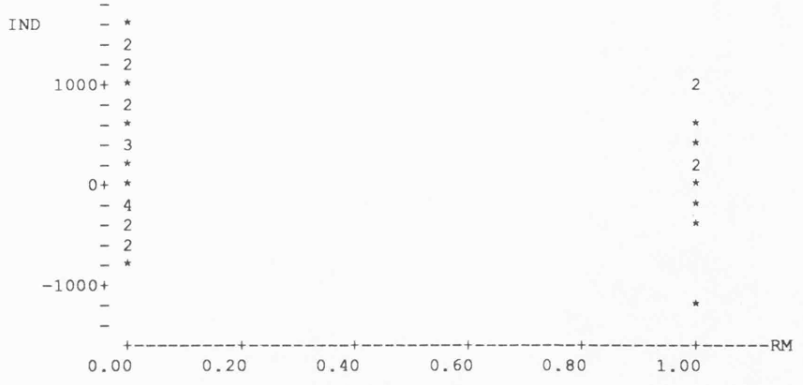

IND
1000+
0+
-1000+
P&L
0.0
1.2
2.4
3.6
4.8
6.0


IND
1000+
0+
-1000+
AEST
0.80
1.60
2.40
3.20
4.00
4.80


IND
1000+
0+
-1000+
2.4
3.6
4.8
6.0
7.2
8.4
EPSC

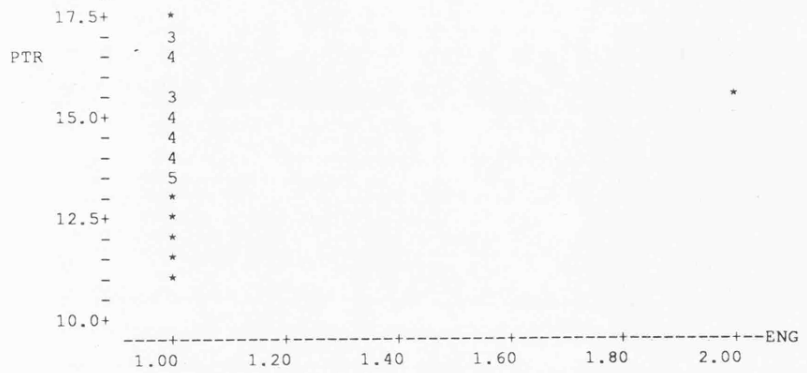

IND
1000+
0+
-1000+
3.0
4.5
6.0
7.5
9.0
OSC

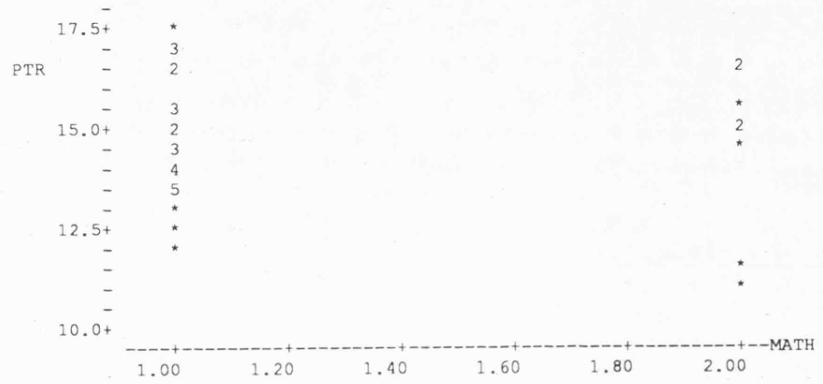

IND
1000+
0+
-1000+
0.00
0.40
0.80
1.20
1.60
2.00
X-CURR

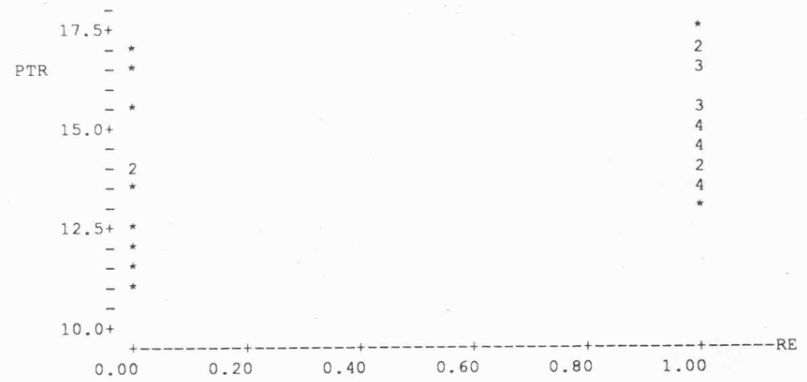

IND
1000+
0+
-1000+
0.00
0.20
0.40
0.60
0.80
1.00
RM

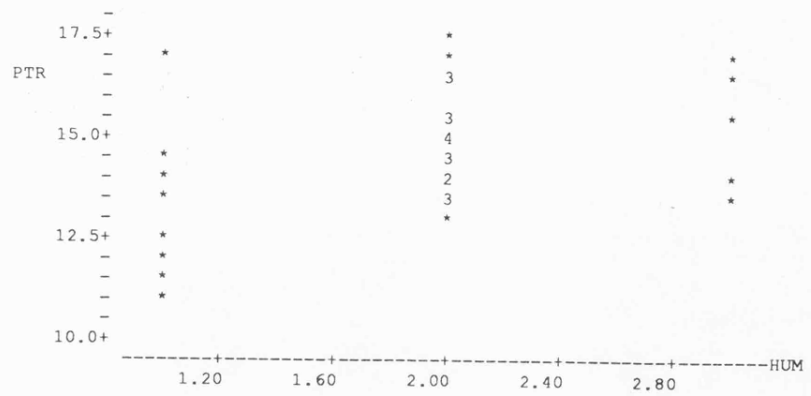
APPENDIX 15 Sheffield: numbers of subjects in each subject grouping versus score on PTR variable, Years 3 and 5

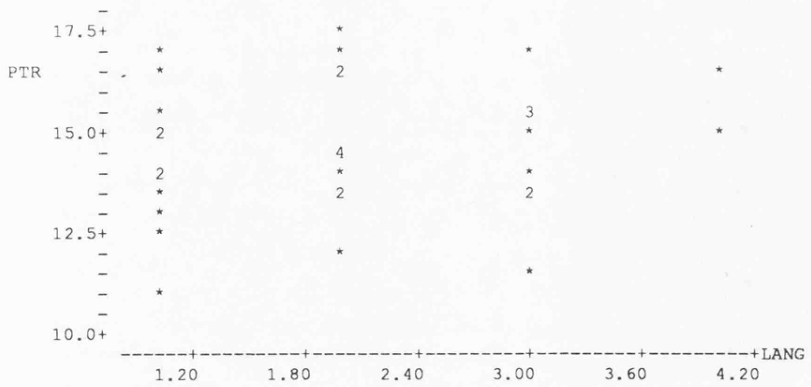
YEAR 3

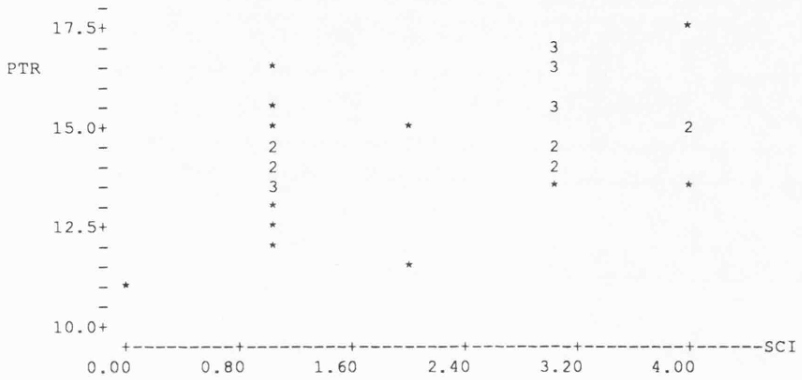


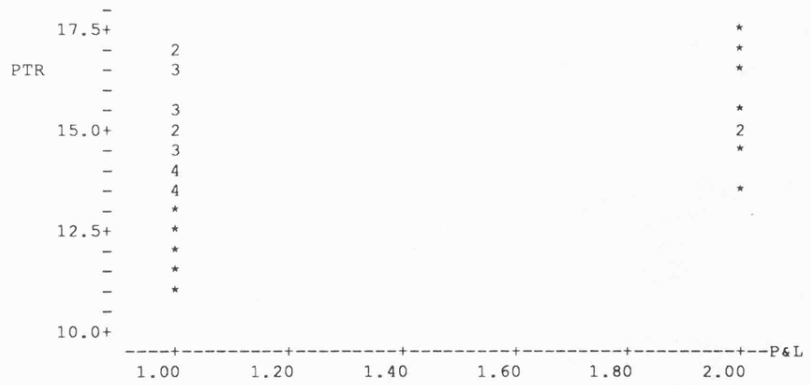


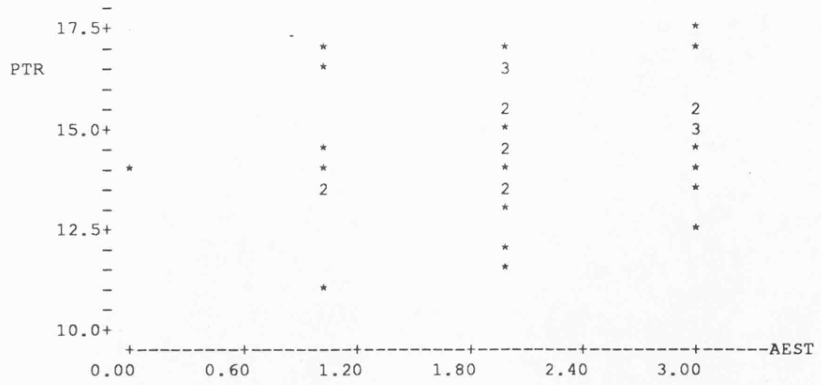


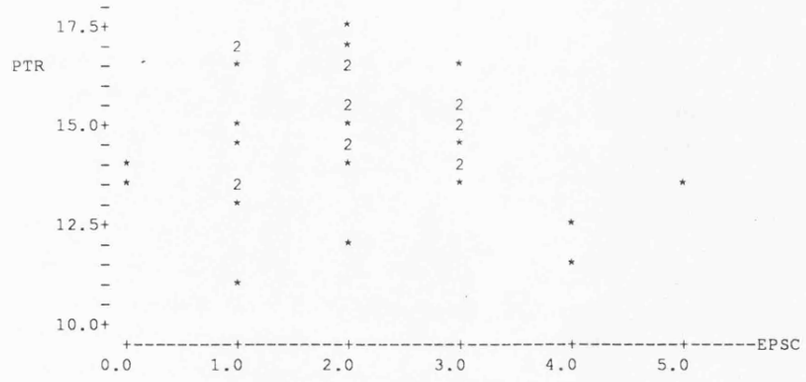


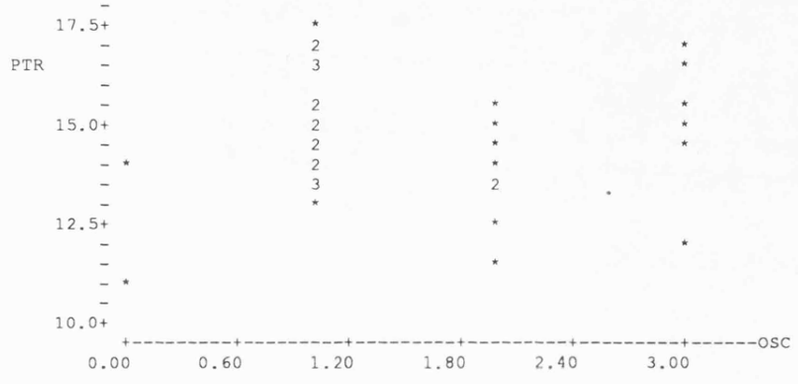

PTR
17.5+
15.0+
12.5+
10.0+
1.20
1.80
2.40
3.00
3.60
4.20
LANG

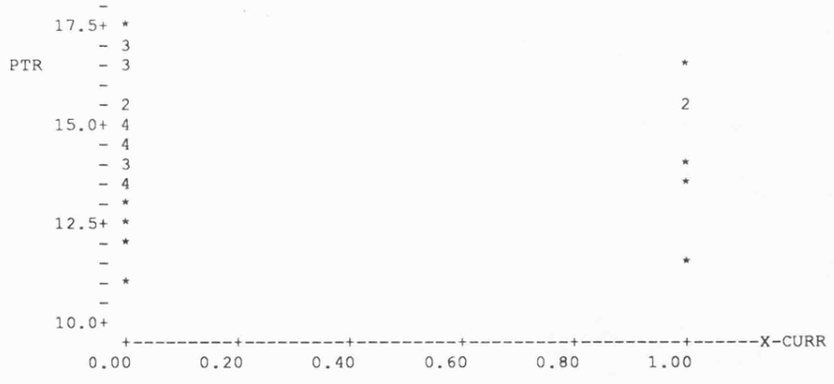

PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.80
1.60
2.40
3.20
4.00
SCI

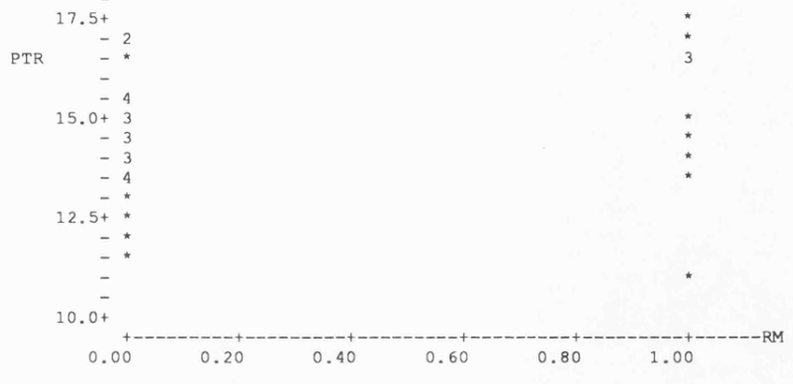

PTR
17.5+
15.0+
12.5+
10.0+
1.00
1.20
1.40
1.60
1.80
2.00
P&L


PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.60
1.20
1.80
2.40
3.00
AEST


PTR
17.5+
15.0+
12.5+
10.0+
0.0
1.0
2.0
3.0
4.0
5.0
EPSC

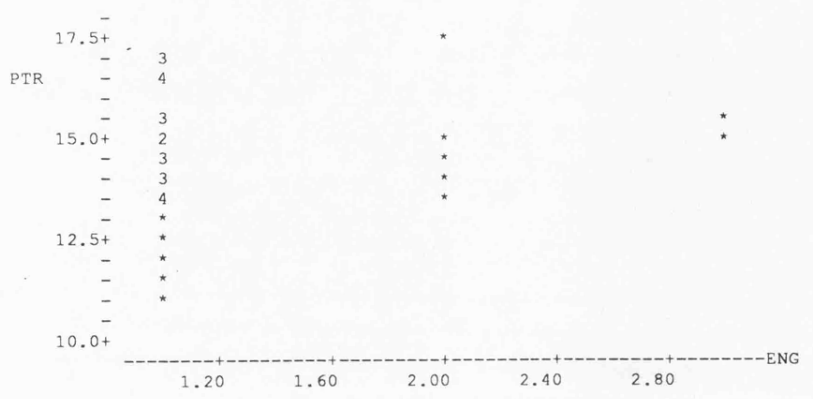

PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.60
1.20
1.80
2.40
3.00
OSC

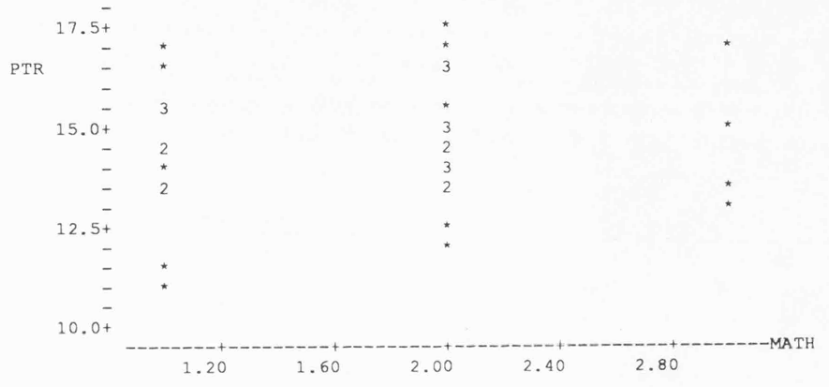

PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.20
0.40
0.60
0.80
1.00
X-CURR

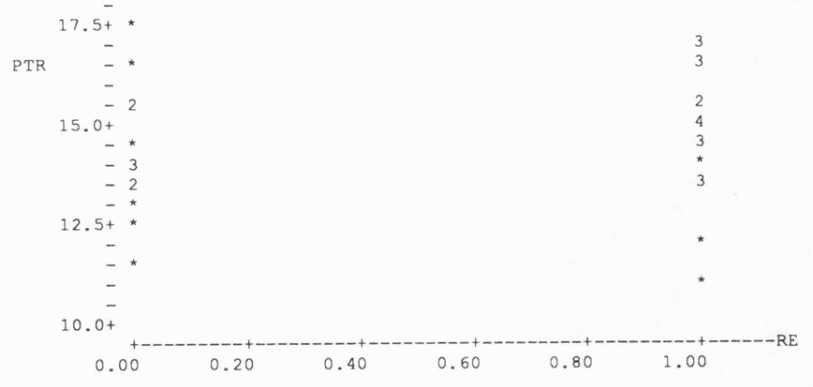

PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.20
0.40
0.60
0.80
1.00
RM

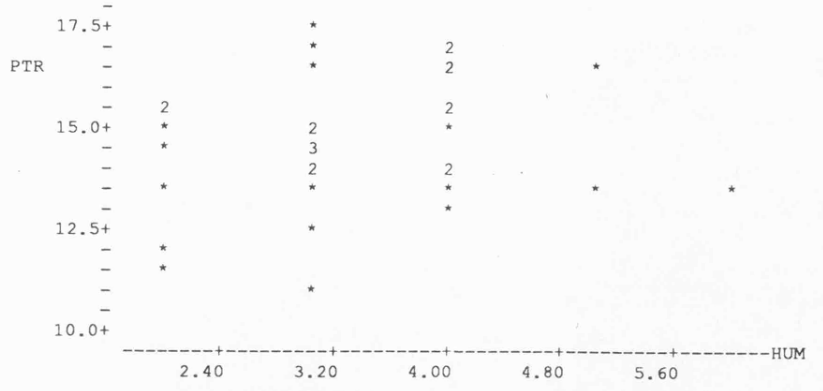
APPENDIX 15 contd.

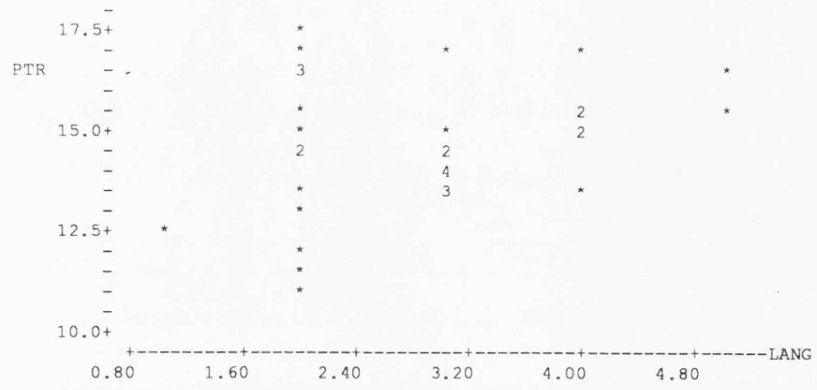
YEAR 5

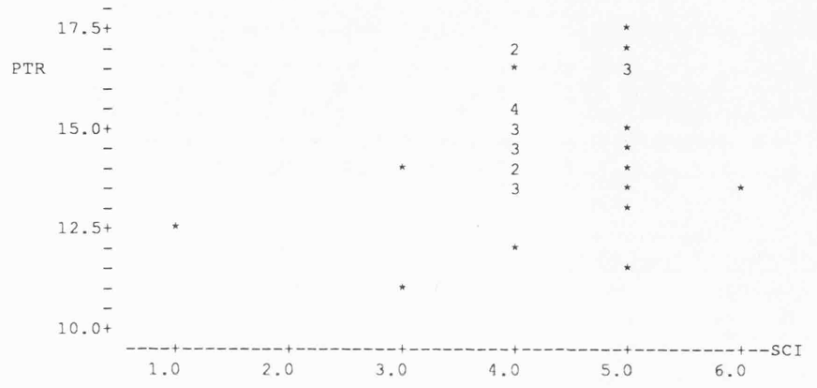


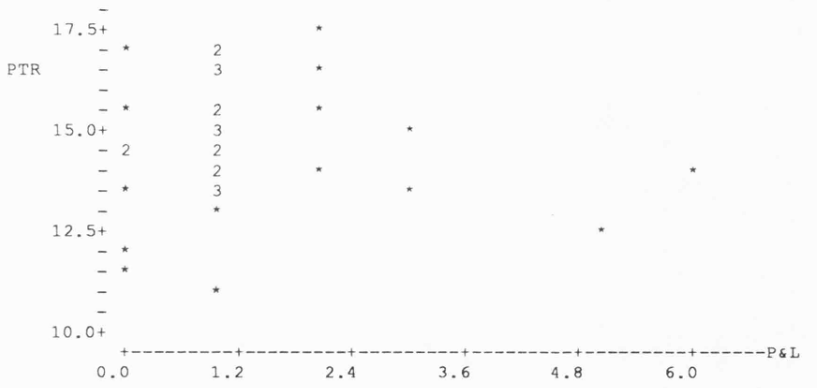


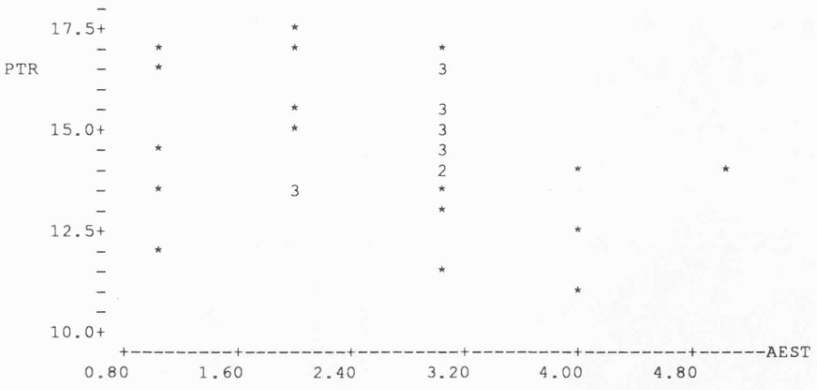


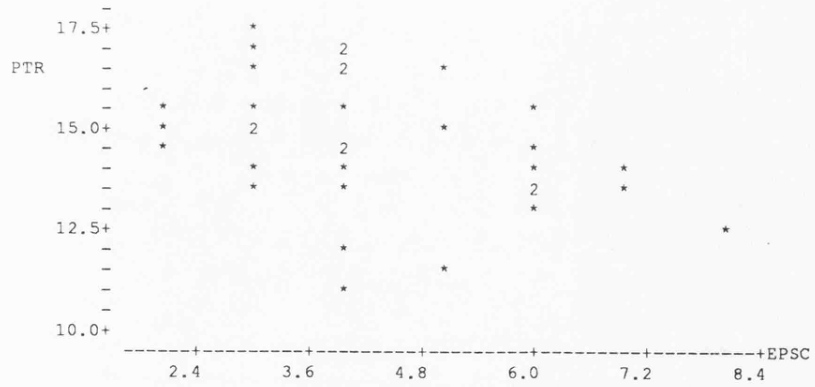


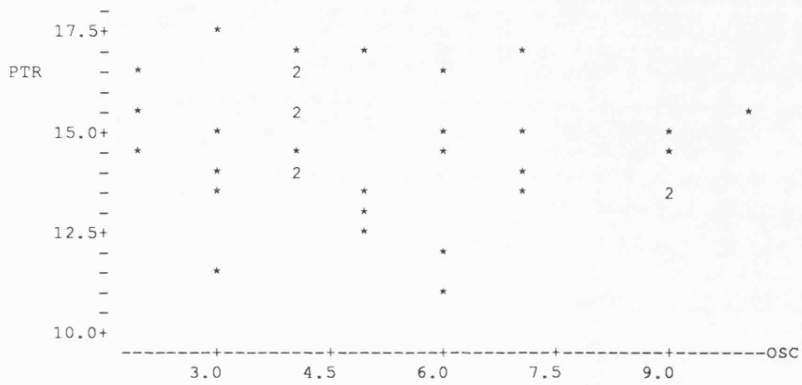

PTR
17.5+
15.0+
12.5+
10.0+
0.80
1.60
2.40
3.20
4.00
4.80
LANG

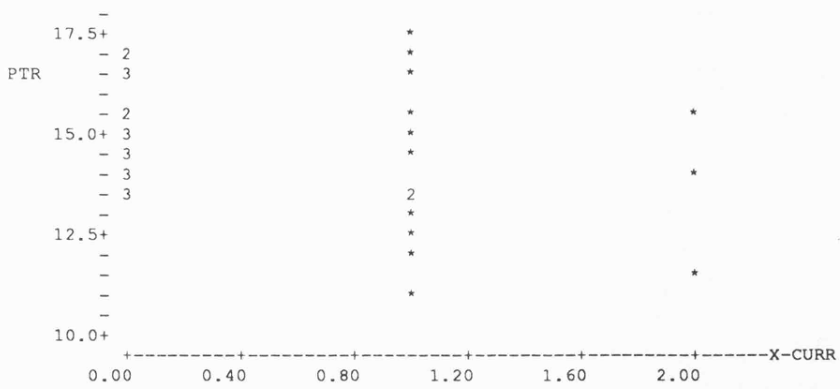

PTR
17.5+
15.0+
12.5+
10.0+
1.0
2.0
3.0
4.0
5.0
6.0
SCI

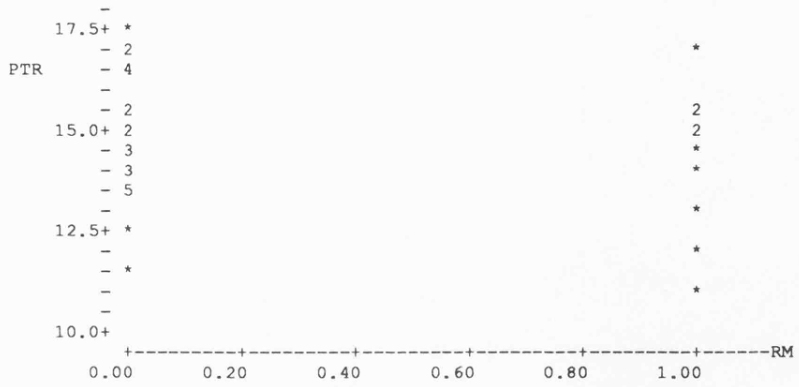

PTR
17.5+
15.0+
12.5+
10.0+
0.0
1.2
2.4
3.6
4.8
6.0
P&L


PTR
17.5+
15.0+
12.5+
10.0+
0.80
1.60
2.40
3.20
4.00
4.80
AEST


PTR
17.5+
15.0+
12.5+
10.0+
2.4
3.6
4.8
6.0
7.2
8.4
EPSC


PTR
17.5+
15.0+
12.5+
10.0+
3.0
4.5
6.0
7.5
9.0
OSC


PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.40
0.80
1.20
1.60
2.00
X-CURR


PTR
17.5+
15.0+
12.5+
10.0+
0.00
0.20
0.40
0.60
0.80
1.00
RM