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A Study of TVEI in Two LEAs

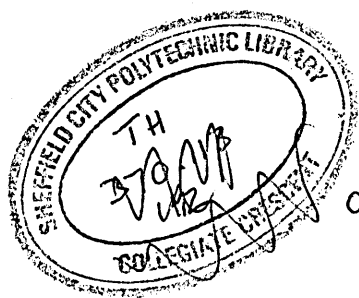
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A Thesis Submitted to the Council for National Aoadafflie Awards
in Partial Fulfilment of the Requirements
for the Degree ofs

Doctor of Philosophy

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August, 1991



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**Resource Management in Pre-Vocational Education:
A Study of TVEI in Two LEAs**

Chris Uzoma Uzodinma

Doctor of Philosophy

1991

The study addresses the management of pre-vocational education programmes in secondary education with particular reference to the management of resources. The educational context is the Technical and Vocational Education Initiative (TVEI) in the United Kingdom which provides opportunities for curriculum and management innovations through experimentation at the local level. The research broadly explores the roles and relationships between the central government, local education authorities (LEAs) and institutions in the delivery of a directly funded educational programme. The primary focus, however, is on determining and interpreting resource allocation forces and the rationale for allocations in secondary schools.

A review of literature on the TVEI, educational innovations and the management of resources leads to a conceptual framework which conceives school activities as comprising 'programmes', with each programme representing a coherent set of resourced activities with its own objectives. A review of literature on the rational and political perspectives on management provides the basis on which the allocative choices of selected schools are interpreted.

The research methodology draws from both positivist and interpretative approaches. It consists of a case study method, involving two LEAs and four schools (two in each LEA), using documentation and interview as the major research instruments.

Using the concept of full-time (pupils and teachers) equivalence as basis, the allocative choices of the schools are assessed against four performance measures - the impact of subjects and the TVEI, economy in the use of resources, equity/balance in the allocation of resources, and pressure/load on teachers.

The analysis leads to the conclusion that the relative distribution of resources to subjects and other school activities will necessarily vary because school objectives are not only many and varied, but also make different resource demands. However, it was also found that, in resource terms, some objectives appeared to be in conflict with others, suggesting that specific educational and resource objectives not only need to be specified, but also considered together when making allocative choices.

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Glossary of Terms and Abbreviations

A. Terms

Local Education Authority (LEA): The education departments of local government councils in England and Wales.

Pre-Vocational Education: Occupation-oriented education aimed at acquainting young people with the requirements and demands of work.

Pupils/Students: Because both secondary schools and colleges of further education are involved in the TVEI, 'pupils' and 'students' have been used interchangeably in this document. However, 'students' have generally been used in relation to both schools and colleges, and 'pupils' in relation to schools only.

Resources: As used in this research, resources include skills, time, money, equipment, consumables and buildings and premises.

Schools: As used here, schools refer to secondary, or post primary educational institutions.

B. Abbreviations

CPVE - Certificate of Pre-Vocational Education

CR - Contact Ratio

DES - Department of Education and Science

Fte-P/Fte-T - Full-Time Equivalent Pupils, and Teachers

INSET - In-service Training for Teachers

LAPP - Lower Attaining Pupils Project

LEA - Local Education Authority

LMS - Local Management of Schools

NFER - National Foundation for Educational Research

NPRA - Northern Partnership for Records of Achievement

RoA - Records of Achievement

R-PTR - Relative Pupil-Teacher Ratio

TA - Training Agency (see Chapter 1, Section 1.8)

UVP - Unified Vocational Programme

YOP - Youth Opportunities Programme

YTS - Youth Training Scheme

CHAPTER 1

Introduction

This study explores the management of resources in education using pre-vocational education as a context and the Technical and Vocational Education Initiative (TVEI) as a focus. The primary emphasis is on understanding processes of resource allocation in secondary schools. Within this context, an attempt is made to link activities, pupils and resources, and to interpret decisions and processes in secondary schools in terms of 'rational' and 'political' management approaches. This chapter outlines the aims and objectives of, and the key issues addressed by the research.

1.1 Pre-vocational Education and the Context of TVEI

Pre-vocational or occupation-oriented education as a provision for preparing young people in secondary schools for adult and working life has been the subject of much debate. This debate has centred on the relative merits of general and vocational education, the level (whether primary, secondary or post secondary) at which vocational education should be provided, the form (formal or informal) which it should take, and whether general and vocational education should be delivered separately or together (eg Coombs, 1968 and 1985; Lillis and Hogan, 1983; Grubb, 1985; Dale, 1985a; King, 1985; Gleeson, 1987 and 1989; Heyneman, 1987; Psacharopoulos, 1987; Bowman, 1988; Weir 1988). The debate has embodied a variety of views concerning the merits of pre-vocational education and its place in the education system. These differences have arisen largely because of varying perceptions about the value and relevance of pre-vocational education to students, the society and the nation. On the one

hand, a skilled labour force is considered central to national and economic progress and it is believed that vocational education can enhance the provision of such a workforce (Strinner, 1982). On the other hand, employers are equivocal about the relevance of pre-vocational education provision to performance on the job; for example, it has been noted that employers' reactions to pre-vocational education have neither been homogeneous nor consistent (Dale, 1985a). The lack of agreement among research findings leads Psacharopoulos (1988) to conclude that little empirical evidence exists to confirm or reject hypotheses in favour of pre-vocational education.

Despite this ambivalence, and some neglect, pre-vocational education has in recent years gained impetus in many countries, both developing and industrialised. In developing countries a particular concern has been to diversify the secondary curriculum to include both general and vocational subjects (Lillis and Hogan, 1983; Grubb, 1985; Lewis and Lewis, 1985; Psacharopoulos and Loxley, 1985; Lauglo and Lillis, 1988). In the United States, Scandinavia and Israel, pre-vocational programmes are integral to the provisions of secondary schools; while in Japan there is a lifelong commitment to vocational education and training (NEDO, 1984; MSC, 1985a; Jamieson, 1985; McCulloch, 1986; Holt, 1987; Weir, 1988). The situation is similar in Germany though with separate academic and vocational schools. These, and the introduction of some recent initiatives such as the Certificate of Pre-vocational Education (CPVE) and the Technical and Vocational Education Initiative (TVEI) in the UK, reflect an increasing international consensus that schools need to play a greater role in the vocational aspect of the

preparation of young people (Holt, 1987; Wellington, 1987; Pollard et al, 1988 ; Weir, 1988).

The Technical and Vocational Education Initiative (TVEI) which has been selected for study was introduced into the British school system in September 1983 to 'stimulate the provision of technical and vocational education for young people' (Holt, 1987, p. 56) and to prepare them for adult and working life. The Initiative is designed for the 14-18 age range and although it began as a pilot scheme, it was extended in June 1984 and by June 1987 about 102 out of 104 Local Education Authorities (LEAs) were involved (MSC, 1985b). From September 1990 the Initiative moved into a further extension and expansion phase which is planned to include all LEAs, secondary schools and colleges of further education.

The TVEI is an integral part of the overall provision in existing institutions and, with its special system of resourcing through the Training Agency (TA) rather than the Department of Education and Science (DES), it provides an appropriate framework for studying the management of resources in pre-vocational education. Studies and evaluation reports (eg Pring, 1985; Beattie, 1986; Stoney et al, 1986; Hinckley et al, 1987; Barnes et al, 1987; Sikes and Taylor, 1987; Bridgewood et al, 1988; Barnes et al, 1988) reveal that TVEI projects and schemes differ in terms of curriculum, organisation and management. These variations between the projects in operation make the Initiative particularly suitable for examining different resource management approaches.

As an innovation the TVEI can be examined in terms of its planning, development, implementation or evaluation. However, it

can also be seen simultaneously as a **policy** for educational change, curriculum development and management innovation, as a **project** in which the policy is interpreted and implemented by various LEAs and institutions, and as a **practice** in which the good experiences emerging from various projects are replicated and institutionalised in all secondary schools and colleges of further education (Wright, 1988). This is how the Initiative is seen in this study as its implementation in selected LEAs and schools is examined.

1.2 The Importance of Research on the Management of Resources in Education

It is often argued that the failure of research findings, especially in developing countries, to justify pre-vocational education in cost-benefit and external efficiency terms is not sufficient grounds for abandoning such programmes (Lauglo and Lillis, 1988; Bacchus, 1988; Wright, 1988). One reason is that many of the findings are based mainly at the 'macro' level. They give little consideration to in-school activities, concentrating instead on equity and on internal and external efficiency issues (eg Foster, 1965; Oxtoby, 1977; Sullivan, 1981; Urquidi, 1982; Lewis, 1983; Psacharopoulos and Loxley, 1985; Psacharopoulos, 1985, 1987 and 1988; Lauglo 1987; McMahon, 1988; Zachariah, 1988). Given the direct relevance of 'micro' activities within institutions to 'macro' results, the need to examine the implementation of pre-vocational education programmes with respect to their internal management becomes apparent. However, although internal school management comprises several areas and processes, Dennison (1984, p. 1) points out that:

... the thrust of concerns (in research in education management) have been towards the curriculum and timetabling, the development of staff, decision making,

inter-personal skills, education laws etc, with resource issues a peripheral but not central theme.

It might be argued that the apparent neglect of resource management in schools in the past has been attributable to the small scope of financial decision making within them since the majority of such decisions have been made at the LEA level. However, the situation has been changing rapidly in recent years and resource management, apart from being an important aspect of any educational endeavour, is moving towards the top of the agenda in education and schools.

Since 1982, the Local Government Finance Act has required auditors from the Audit Commission to satisfy themselves that Authorities in England and Wales have made proper arrangements to secure economy, efficiency and effectiveness in the use of resources. More recently, this 'value for money' drive was taken up by the DES in Circulars 7/88 and 9/88 which require LEAs to monitor their financial delegation schemes. More significantly, for this study, the cost-effectiveness of programmes is one of the official (Training Agency) aims of TVEI (Aim b-1).

In general the Local Management of Schools (LMS) which delegates major resource management responsibilities to schools and which became operational from 1990, makes resource management a high priority issue in schools. Thus Levacic (1989c, p. 55) observes that 'schools' practices with respect to the new financial management are likely to evolve and change quite quickly' over the next few years. Given, as Handy (1976) points out, that many schools are not aware of the management opportunities and alternatives available to them, the need arises for education and school managers and teachers to be better informed about allocative options in schools, together with what opportunities

and constraints there are. This research is intended to contribute towards that process.

1.3 Limitations of Previous Research on Resource Management in Education

In 1980 Knight (1980a and b) described as 'very odd' the situation whereby resource management issues were neglected in educational literature, researches and official documents. He likened most of the documents available at the time to Alice's Wonderland where people did not bother about costs. Similarly, other writers (eg Gray 1983 and 1984; Knight 1983; Dennison, 1984; Audit Commission 1986) agreed with Simkins and Lancaster (1983) who observed that 'very little has been written on resource management in educational institutions, especially schools' (p.6). The situation has improved and continues to improve since these comments and observations were made. Nevertheless, the room for further improvement is still considerable.

Much of the literature and research which does exist on resource management in education either relate to colleges of further education, higher education or universities (eg Duffy, 1976; DES, 1987; Birch, 1988), or are limited to costs (eg Knight, 1980a and b; Hough, 1981). One study that examines a directly funded programme is Harland's (1988) Budgeting for Change, although it deals with the Lower Attaining Pupils Project (LAPP) and not the TVEI. Furthermore, little existing literature on schools has attempted to explain the rationale for resource allocations as opposed to the outcome of decision processes in the form of curriculum provisions and costs (eg Gray, 1983 and 1984; Audit Commission, 1984 and 1986). Those that have done so are devoted almost exclusively to higher education and universities (eg

Salancik and Pfeffer, 1974; Pfeffer and Salancik, 1974; Beyer and Lodahl, 1976; Pfeffer, 1977 and 1981; Ebbut and Brown, 1978; Pfeffer and Moore, 1980; Cavanagh, 1983). This research is different from these others because, in addition to being secondary school based, the study empirically explores internal school management from the standpoint of the participants, and attempts to explain the rationale for resource allocations, thereby forming a link between decisions and their outcomes.

1.4 The Aims of the Study

Against this background the aims of the study are twofold:

1. With the TVEI as context, to develop and utilise a framework for examining the management of pre-vocational programmes in secondary education with particular reference to the management of resources.
2. To interpret the allocative choices made in selected TVEI schools with a view to improving resource management practices in education generally, and schools in particular.

1.5 Objectives of the Study

A number of objectives are considered to be instrumental to the achievement of the above aims. An examination of the the first aim shows that it implies the development of a framework which not only enables allocative choices in schools to be interpreted, but also provides a useful basis for thinking about resource management in education generally. Also, the fact that the TVEI is part of, rather than the total curriculum of schools, suggests that the framework should be able to isolate TVEI activities in order to enable the links between the activities, pupils and resources to be examined. Furthermore, the fact that the second aim concerns the improvement of resource management practice suggests the identification of a theoretical basis on which allocative choices can be interpreted.

The aims stated above therefore embody three main

objectives which are to:

1. develop and utilise a methodological framework for investigating resource management in education;
2. explore the management and resource implications of educational programmes targetted towards part of the curriculum of schools; and,
3. consider the extent to which management processes and the rationale for resource allocation in secondary schools can be explained using rational and political perspectives.

1.6 Key Research Questions

The aims of education are many and varied, including economic, social, personal other objectives. At the institutional level, while some have stressed the curriculum as the major concern of schools (eg DES, 1981), others have declared that the central task of the school is the 'pastoral need of pupils' (Marland, 1974, p. 12). In theory, schools might be expected to meet, or at least address, all these aims at once. However, as Hoyle (1988, p. 35) points out, 'school will make their own selection from the range of possible goals'. Hoyle argues that schools have to do this for two main reasons: first, they cannot do all that is expected of them and, secondly, they will seek to forge a distinctive identity.

This means that schools need to decide on which educational goals they wish to emphasise. In doing so, their choices will necessarily be influenced by external factors since they represent only one of the major partners in the delivery of educational services, In the case of the TVEI, the external factors include the TA TVEI guidelines and LEA policies. A major research issue, therefore, concerns the interpretation of TVEI in the selected schools, in terms of curricular provisions and

administrative arrangements, and the extent to which their choices have been influenced by the TA TVEI guidelines and LEA policies.

The resources which schools have at their disposal for achieving their educational objectives are limited. In making their allocative choices, therefore, schools need to consider their educational needs in relation to the needs of pupils on the one hand, and the availability of resources and satisfaction of teachers on the other. In practice, the achievement of one sometimes hinders the achievement of another. This implies that schools need to determine both the educational and resource management objectives which they seek to achieve. It also raises a number of key research issues which derive from the rationale for, and implications of, allocative choices made in schools. One concerns the needs and interests of pupils which the schools have sought to address, and how, in the organisation and delivery of their curricular activities, they have done so. Similarly, because of the need to balance the interests of pupils and the constraints of resources, it is necessary to examine how the allocative choices of the schools have influenced the relative distribution of resources to various curriculum areas, and how teachers have been affected in the process.

In this context, four performance criteria have been selected for examining the allocative choices of the schools, as follows:

- a. **Impact:** As an educational initiative, the 'change' implication of TVEI will be analysed in terms of how it has impacted on the schools. Here, 'impact' is defined as the proportion of pupils involved in designated TVEI activities of the schools.
- b. **Economic Use of Resources:** This relates to the resource demands made by different allocative choices. In this respect, an allocative choice will be considered to enhance the economic use of resources, more than another, if it achieves an objective or set of objectives with less resources than the other.

- c. Balance/Equity in the Allocation of Resources: Equity is here defined as the degree to which the proportion of resources allocated to an activity matches the proportion of pupils involved in that activity.
- d. Load/Pressure on Teacher: This relates to the the extent to which subjects are organised to reduce the overall contact (face-to-face teaching) time of teachers.

The issues discussed above relate mainly to the organisation and delivery of curricular activities, and to teaching. However, apart from teaching, another major activity undertaken in schools is administration. Consequently, the management structures, roles and relationships emerging from TVEI implementation in the schools are important research issues. At the same time, it will be necessary to examine the relationship between the organisation and delivery of the curriculum, and the emerging management structures.

Finally, different schools are likely to make different allocative choices for different reasons. Such choices, as earlier noted can stem from both both external and internal demands. In the case of the TVEI, the external demands may arise from a need to meet the requirements of the TVEI guidelines, or LEA policies. Similarly, internal considerations will include the objectives of particular schools, for as Pring (1985, p. 15) notes:

... to criticise TVEI requires detailed examination of scemes, for it is there that the development of educational thinking (not the implementation of someone else's thinking) is being enacted.

Given these possible influences on the allocative choices of schools, and the fact that it is possible for some schools to make choices without an understanding of their resource implications; and given that a primary purpose of the study is the improvement of educational practice, a major research issue

concerns the rationale for the allocation of resources in the schools. An attempt will therefore be made to interpret the allocative choices of the schools in terms of the rational and political management perspectives.

The key research questions relating the aims and objectives of the study identified above can therefore be summarised as:

1. In terms of curricular offerings and administrative arrangements, how has the TVEI been interpreted in the selected schools, and how have the choices been influenced by the TA TVEI guidelines and LEA policies?
2. How have the schools organised and delivered their curricular activities to take account of the various needs and interests of pupils?
3. How have the allocative choices of the schools influenced the relative distribution of resources to various curriculum areas, and how have teachers' work load been affected?
4. How have the management structures, roles and relationships in the schools changed as a result of the TVEI, and how have these influenced (or been influenced by) the nature, organisation and delivery of curricular activities?
5. How can the rationale for resource allocation in the schools be interpreted in terms of the rational and political management perspectives?

1.7 Scope of the Study

Researches are necessarily limited in scope for a number of reasons, including the need to have a clear focus and the constraint of resources. With respect to this research, the scope has been influenced by two major factors. One is that the TVEI, which provides the context of the study, was still in the pilot phase at the time of the fieldwork. The other relates to feasibility problems, as might be expected in a research conducted by one person with limited resources. Consequently, the following represent the major focus of the study and, therefore, its main limitations:

1. Empirical work covers the 1989/90 academic year and the 1990/91 financial year. This means that, although the TVEI Extension began in 1990, the study is limited to the pilot phase of the Initiative which was still in operation in the case study schools at the time of the investigation.
2. For reasons of manageability, the study focuses on two Local Education Authorities (LEAs) and two schools in each of them. This means that, although the Initiative is a 14-18 curriculum initiative in schools and colleges, fieldwork is limited to 4th and 5th year provisions in schools.
3. Although the TVEI has both educational and resource implications, analysis is limited to the allocation of resources in schools.

1.8 An Explanatory Note

It is necessary to note two points which are pertinent to some of the terms contained in this report. The first concerns the sponsors of the TVEI, the Training Agency (TA). The name of the Agency has been changed twice since the inception of TVEI in 1983. At the inception of TVEI, it was known as the Manpower Services Commission (MSC). In 1988, its name changed to the Training Agency (TA); and later still, in 1991, it became known as the Training, Enterprise and Education Directorate (TEED) of the Department of Employment. The 'Training Agency (TA)' is used throughout this document because it was the name by which the Agency was known at the time of investigation, and because it is the name used in most of the documentation from the case study LEAs and schools.

The second point is that a considerable number of terms and abbreviations are contained in this document. For reference purposes therefore, a glossary of key terms and abbreviations is included at the beginning of the document.

1.9 Outline of the Thesis

The following three chapters provide a structure through which the key research questions can be addressed. Chapters 2 and 3 review literature relevant to the study. Chapter 2 draws on relevant literature on the background to the TVEI, as well as documentation and evaluation reports on practices in the pilot phase of the Initiative. The discussion is linked to educational practice generally and resource management in particular in order to provide the context on which the analytical framework will later be developed. Chapter 3 embodies a critical analysis of the rational and political models of management, followed by an outline of the basis on which the allocative choices of the schools will later be interpreted. In Chapter 4, a conceptual framework for analysing resource management in education is developed. This links activities, pupils and resources by conceiving of school activities in terms of 'programmes' or self contained sets of resourced activities with specific objectives. Within this core framework, school processes and outcomes are operationalised into a researchable form.

In Chapter 5 a discussion of both positivist and interpretative research methods is followed by the derivation of the research design, incorporating the case study method, to address the key research issues. The choice of the case study sites and a review of the conduct of empirical work are also incorporated into that chapter.

Chapters 6, 7, 8, 9 and 10 are concerned with the presentation, analysis and interpretation of the data arising from the empirical work. Chapter 6 discusses the interpretation of TVEI in the case study LEAs, focussing on the overall approaches adopted, and how these affected the outcomes. Chapter 7 describes the curriculum organisation and delivery approaches adopted by the case study schools in terms of the 'programmes' framework of the research, drawing out strategic similarities and differences. Chapter 8 is an empirical analysis of the resource implications of the allocative choices of the schools based on the findings in Chapter 7. Chapter 9 is an empirical analysis of the management structures, roles and relationships resulting from TVEI implementation in the schools. Chapter 10 interprets the allocative choices and emerging management structures in the schools in terms of the rational and political perspectives described in Chapter 3.

Although the concluding chapter, Chapter 11, incorporates a summary of the findings, its function is primarily one of synthesis. It brings together the highlights of the analytical chapters, and the conclusions from them. Further, the implications of the research findings for policy formulation and implementation are addressed by linking the conclusions to educational practice. Finally, the research design, methodology and implementation are reflected upon.

The TVEI and the Management of Resources in Education

2.1 Introduction

Berman (1980) notes that implementers play a significant role in the success of any innovation. Similarly, it has been argued that the relationship between policy and implementation is influenced by the distance between the initiator or sponsor of an innovation and its implementers in terms of the number of tiers in the implementation process (Ingram and Mann, 1980). Thus, the implementation of an initiative in which the initiator is also the implementer will differ from one in which the initiator and implementers are different.

The TVEI falls into this latter category because, as Fullan (1982) and Mercer (1988) have noted in relation to most major educational initiatives, it was 'externally triggered' by the central government. The TVEI's sponsor, the Training Agency (TA), does not relate with the ultimate implementers (educational institutions) directly but through Local Education Authorities (LEAs). This situation has important implications for the management of the Initiative since the interests of the various parties need to be reconciled. The level and type of support and commitment given by participants at both LEA and institutional levels will depend on the degree of congruence between their perceptions and the perception of the central government regarding the Initiative's objectives and the means of achieving them. Thus, the relationship between policy and practice is not linear, and apparent 'mis-matches' between policy and implementation can occur for a variety of reasons.

This chapter addresses the key research questions identified in the previous chapter by reviewing relevant literature, documentation and evaluation reports on the implementation of TVEI in LEAs and schools. The discussion is linked to resource management in schools in order to provide the context for the analytical framework which will be developed in chapter 4.

Wright (1988) has made a distinction between vocationalism as a policy, a project and a practice in an attempt to highlight the various contexts of implementation of pre-vocational education policy. According to him, a major educational initiative needs to be seen within three contexts. In the first, the initiative is seen as a 'policy', actively pursued simultaneously by all those concerned. This is a case of implementation without a pilot phase. Secondly, the initiative can be seen as a 'project', designed and implemented over a given period of time. This reflects the pilot phase of a policy implementation. Finally, it can be seen as an on-going 'practice' which continues to exist in a multiplicity of non-spectacular forms throughout a country. This reflects the adoption of the lessons from the pilot phase of an initiative throughout a country.

This analysis is pertinent to this study in the sense that an educational philosophy, encapsulated in the TVEI policy guidelines, underlies the introduction of TVEI by Central Government. The TVEI policy has then been interpreted by LEAs and schools and reflected in TVEI pilot projects and schemes. Since a primary objective of the TVEI pilot is replicability and transfer of practice, the success of the TVEI Extension phase will depend on the contribution of TVEI projects to educational practice. A study, such as this, which focuses on the TVEI pilot, therefore, needs to look beyond the 'project' phase and

examine the implications of practices in TVEI projects for educational practice in general.

Consequently, the chapter comprises three main parts. In the first part, the TVEI **policy** is examined through a review of literature relating to the background and inception of the Initiative. Drawing on documentation and evaluation reports, this is followed by an examination of the TVEI **project** in which the implementation of the pilot phase of the Initiative in LEAs and schools is reviewed. Finally, the implications of developments in TVEI projects for educational practice will be examined in relation to resource management in education generally, and schools in particular.

2.2 The TVEI Policy

As an educational initiative, the TVEI is aimed at addressing a perceived deficiency in the educational system. Consequently, its policy guidelines should form a basis for evaluating its implementation. In implementing the Initiative, however, LEAs and schools will interpret and translate it in different ways. This suggests that an examination of the management of the TVEI needs to start from its policy objectives in order to form the basis on which its various interpretations can be judged. This section therefore examines the context and policy objectives of TVEI, as well as the potential of its guidelines for influencing its implementation and management.

2.2.1 The Background to the TVEI

The practical impetus for the TVEI stemmed from a consideration of the UK's perceived lack of competitiveness in the World market (NEDO, 1984; MSC, 1985a; Stokes, 1987) which has been heightened

by technological changes (Dale, 1985b) and, internally, by pressure from employers (Jamieson, 1985; Weir, 1988). Added to these have been the social, economic and political implications of unemployment and shifting patterns of employment. These led to a human capital analysis which saw education as a solution (MSC 1981a and b). This analysis highlighted a growing concern among parents, employers and some teachers that secondary education should relate more to the needs of students in relation to the demands of society and the world of work (MSC, 1981a and b; NEDO, 1984; MSC, 1985a Owen, 1985). The situation, ultimately, precipitated a political response in the form of government intervention in curriculum matters.

Although the TVEI was announced in 1982 and became operational from 1983, the government had, long before this, indicated its intention to become more directly involved in education. Government determination to tackle the problem of unemployment and to involve schools in vocational education and training increased in the early seventies. Specifically, this determination led to the introduction of the Employment and Training, and Education (Work Experience) Acts in 1973, the subsequent disbandment of the Schools Council in 1984 and, more significantly, the creation, in 1974, of the Training Agency (TA) (Dale, 1985a; Farley, 1985; Jamieson, 1985; Gleeson, 1987; Holt, 1987). The Training Agency has since then provided training programmes for unemployed youth and adults through its Special Programmes Division (SPD) and its Training Services Division (TSD). Such training schemes included the Unified Vocational Preparation (UVP) Programme, from 1976, and the Youth Opportunities Programme (YOP), from 1977 (Ainsley, 1988). These were later merged into the Youth Training Scheme (YTS) in 1983.

Although these programmes have been based outside schools, they are relevant to the attention which was later directed on schools and to the rationale for the introduction of TVEI.

Many writers and commentators (eg Dale, 1985b; Jamieson, 1985; McCulloch, 1986; Holt, 1987; Gleeson, 1987; Ansley, 1988; Weir, 1988) have traced the origin of the TVEI to the speech made in October 1976 by the then Prime Minister, James Callaghan, at Ruskin College, Oxford, and the 'Great Debate' that followed. Callaghan had outlined schools' deficiencies in terms of the inappropriate states of mind that the school curriculum and processes produced in students and the lack of an appreciation, understanding and commitment on the part of students to industry's needs and work (Dale, 1985b). Callaghan had attempted to reconcile the visions of secondary and vocational education:

... to equip children to the best of their ability for a lively constructive place in society and also to fit them for a job of work. Not one or the other, but both (James Callaghan, quoted in Weir, 1988, p. 3).

Callaghan then inaugurated a 'Great Debate' on these issues which was taken up with considerable vigour by academics as well as by both the popular and educational media. The debate concerned the search for skills which are appropriate for new or emerging industrial needs, and the role of schools in the process. However, opinion on this has been mixed. Thus, while some have argued for a distinction between **education**, undertaken in educational institutions, and **training**, undertaken in industries (Lawton, 1984), others have referred to such a distinction as a 'false dichotomy', arguing that the same activity can be both educational and a training (Pring, 1985). In general, the debate was aimed at seeking ways of ensuring that young people are

prepared not only to get jobs, but also to be 'better employees'
(Dale, 1985a)

The 'Great Debate' and the educational initiatives that followed were therefore stimulated by a growing criticism and concern that schools were not responding adequately to the needs of students on the one hand, and the economy on the other, a situation which was partly attributed to schools' and teachers' 'licensed autonomy' (Dale, 1985b). As Saunders (1988) notes, the whole issue of educational effectiveness was presented as important enough in the public and political 'mind' for government to readjust its traditional view on the relative autonomy of schooling and consider more 'direct' forms of influence. As will be discussed shortly, the government, in an attempt to reduce this autonomy, moved from its normal approach of influence (in its relationship with schools) to one of intervention. That intervention came in the form of the TVEI, leading Dale (1985b) to observe that TVEI is the outcome of the analysis that, not only does what is taught and how it is taught in schools need to be changed, but that the process of this change also needs to be changed.

2.2.2 The Inception of TVEI

The Technical and Vocational Education Initiative (TVEI) (originally known as the N (New) TVEI) was announced in the House of Commons by the then Prime Minister, Margaret Thatcher, on 12 September 1982. The programme started in September 1983 (1983/84) with 14 LEAs (out of 66 that applied) (MSC, 1985b). In subsequent years, those 14 were joined by 48 (1984/85) and then another 12 (1985/86) with a further 29 in September 1986. By September 1987, 102 out of 104 LEAs were involved. Although the

Initiative started as a pilot programme, in June 1986 the Secretary of State for Education announced that it was to be 'extended' and opened to every LEA and school in Britain. The average annual expenditure of the Initiative over ten years (1983 to 1992) has been estimated to be about £90 million (Gleeson, 1987 and 1989).

The TVEI, from the outset, has been characterised by two major peculiarities: the manner in which it was conceived and launched, and its level of resourcing. The former relates to the pace with which the Initiative was launched (and extended) and the decision to sponsor it through the Training Agency rather than the traditional channel, the Department of Education and Science (DES). Thus, terms like 'haste', 'secret' and 'unconventional' have been used by commentators to describe the introduction of the Initiative. Dale (1985b, p. 53) argues that TVEI, as an interventionist strategy, does not follow any of the main routes previously used to bring about educational change in Britain. However, it is suggested that direct intervention was impossible under existing frameworks and conventions, in particular via the DES (Dale, 1985b; Saunders, 1988). This, added to the increasing government concern with unemployment pointed to the need for a quite different agency to, according to Saunders (1988, p. 157), 'puncture the shield of autonomy that schools had hitherto enjoyed'. In such a situation, the Training Agency, unfettered by the constraints of custom and the procedural straitjacket of a government ministry, its recent history of intervention in youth training, and its close ties with the National Economic Development Council (NEDC) was an obvious choice. The decision to introduce the TVEI through the TA rather than the DES was therefore based on the expediency of a quick take-off. According

to the then chairman of the Training Agency, David (now Lord)

Young:

Supposing we had decided to launch a debate We might have had a Royal Commission and it might have taken five years or even ten to get off the ground. Now we have a pilot project due to start by September next year (Lord Young in The Times, 22 November, 1982).

Both the use of the TA and the haste with which the TVEI was introduced generated swift and sometimes unfavourable reactions from educational commentators, managers and teachers (Holt, 1987). For many LEAs and schools, however, the manner in which the Initiative was launched was of less importance than the needed resources which it could provide. Compared with other educational initiatives in schools, the TVEI has been described as a resource-led curriculum change (Dale, 1985a; Gleeson, 1987 and 1989; Fulton, 1987; Knight, 1987; McMahon, 1988). When the relatively high resourcing in TVEI pilot is set against the problem of reduced budgets facing many schools at the time of its inception, its potential value to schools becomes clearer. Thus Holt (1987, p. 56) has described the Initiative as 'lavish by any standard and overwhelming to schools whose budgets had been severely cut'. He points out that in the year 1984/85 the TVEI cost was over £27 million and notes that this is more than the Schools Council spent in its 20 years of existence (1964-84). He further calculates that the amount was spent on some 3% of the secondary school population which came to more than £17 per student per week.

The method used to introduce the TVEI (discussed above) and the strategies used by the TA to deliver the Initiative (discussed below) both have important educational and management implications. For example, the speed with which the Initiative was launched and, indeed, extended has been reported as affecting

implementation in terms of schools' degree of readiness (eg Stoney et al, 1986; Hinckley et al, 1987; Bridgwood et al, 1988). It is obvious that the level of pressure on LEAs and schools can affect the nature and quality of their decision processes. Similarly, some people, concerned with replicability, have been sceptical of the situation during TVEI Extension and beyond if the level of resourcing in the TVEI pilot is not maintained. In this respect, the evidence (eg MSC, 1985b) indicates that the level of TVEI funding started to fall as the pilot phase progressed.

2.2.3 The TVEI Implementation Guidelines

The TVEI policy is encapsulated in the TVEI Aims and Criteria as developed by the Training Agency. Those aims and criteria represent more than guidelines because, in addition to forming the basis on which LEAs developed their TVEI proposals, they are also expected to inform and direct the implementation of the Initiative and provide a basis for its evaluation. The Aims and Criteria have been reproduced in Appendix I. As can be seen, the TVEI guidelines are relatively explicit although substantial scope exists, and indeed is recognised in the guidelines, for local initiatives. Hence the indication (Aim b.v) that individual projects are to be managed at the local level. The guidelines also have important implications for the management of the Initiative and it might be useful to briefly comment on some of them before proceeding to the discussion of the Initiative's implementation in projects.

The first point is that the TVEI is concerned with both curriculum content and teaching methods. This is reflected by the explicit reference to the provision of general, vocational

and technical programmes (content) and to the need for schools to be more practical and to help students to develop problem solving skills (method). Secondly, the guidelines recognise that changes in the curriculum and teaching methods will, necessarily, also make some demands for administrative and management changes. Thirdly, the guidelines contain some clear assumptions about curriculum and management arrangements. Thus in developing their programmes, LEAs and schools are expected to provide for equal opportunities, work experience, careers guidance and records of achievement. Similarly, with respect to management, the appointment of project co-ordinators is reflected in the guidelines. This implies that projects will show some similarities in terms of the provision of certain activities and positions. Also, the emphasis on accountability and cost effectiveness as well as on careful monitoring and evaluation suggests that TVEI programmes need to be relatively identifiable in terms of activities and how resources relate to them.

An issue which has attracted considerable comment from writers has been the method adopted by the TA for funding the TVEI. The funding arrangements for TVEI programmes, called by some 'categorical funding' (Harland, 1987; Fulton, 1987) and by others 'honeypot management' (Knight, 1987) have involved LEAs in quite a new form of operation (Dale, 1986; Baines, 1987) in which the contract, accountability, monitoring and evaluation are the key characteristics. Harland (1987) argues that policy implementation through categorical funding comprises several distinct stages:

- a policy is developed
- funds, generous enough to attract those who can and may deliver, are made available.
- voluntary co-operation is invited in exchange for a share of the resources.

- acceptance of the resources is equated with acceptance of policy and ability to deliver.

From the perspective of the Training Agency, therefore, the TVEI's delivery system consists of a process of competitive bidding in which LEAs compete for resources through their proposals; of a contract whereby acceptance of funds on the part of an LEA amounts to a bond to deliver; and of categorical funding in which activities and outcomes resulting from the utilisation of the funds received need to be identifiable for accountability and replication purposes.

There are some obvious implications of categorical funding for education management in general and the management of TVEI in particular. For example, Saunders (1986 and 1988) has identified a number of 'models' of implementation which reflect different degrees of integration between TVEI and schools' overall curricula: adaptive/extension, accommodation and containment. The 'adaptive/extension' model represents a strong interpretation of TVEI in which a school experiments with the philosophy of the Initiative across the whole school. Saunders refers to this tendency to spread TVEI developments across the school in the TVEI pilot as 'pre-emptive replication'. Next is the 'accommodation' model in which TVEI programmes are adapted to fit the general shape of existing arrangements. Finally, 'containment' represents the weakest interpretation of TVEI as its effect is confined and absorbed by existing school practices.

Contrary to categorical funding, which implies that participation amounts to a contract to deliver, this analysis suggests that a willingness to participate is not necessary a contract to deliver according to specifications. The word 'specification' is significant here. Thus, although the 'adaptive' model represents

a strong interpretation of TVEI, the 'pre-emptive replication' of TVEI reflected in the model is not consistent with the TVEI requirement that its activities should be clearly identifiable. In other words, the model does not deliver according to the implied specifications. The analysis therefore indicates that no clear or causal connection can be assumed to exist between policy and practice, and there may well not be congruence between policy intentions and the reality of implementation.

In resource management terms, the implication of categorical funding is as much about curriculum relevance as about differences in emphasis and priorities regarding, for instance, the deployment of resources or the balance between educational and financial accountability. With respect to accountability, Fulton (1987, p. 220) has suggested that 'it seems inevitable that the use of categorical funding will create a disproportionate emphasis on financial as opposed to educational accountability'. Although categorical funding may enhance accountability by narrowing the scope which LEAs and schools have for committing resources, other pressures and constraints within the implementation arena may prove more influential in the determination of what goes on and how it goes on in schools. This will now be examined as we turn to the management of TVEI projects and its implications for educational practice.

2.3 The TVEI Project

Dennison (1984) notes that the traditional DES-LEA-school hierarchy contains a resource dependency. Thus, an LEA which chooses to overtly contravene central government policy (or a school an LEA policy), even where there is no compulsion to comply, disadvantages itself in any contest for resources. The

dependency model appears to be even more apparent in the context of TVEI where the notion of resource dependency has been made explicit rather than implicit through 'categorical funding'. Further, as already noted, the fact that TVEI guidelines are quite specific in relation to components of programmes design, and the fact that TVEI funds are fixed for each project over the duration of the pilot, suggest that local freedom in the control of the definition of goals, the allocation of resources and the monitoring of their use is reduced.

From a management perspective, however, financial decisions cannot be separated from other (eg curriculum, staffing and administrative) decisions. Thus, in organising their projects, LEAs have the choice in such matters as the number and type of institutions to be involved in the TVEI pilot, the balance between general and vocational education in TVEI programmes, the student population to be targetted and the consequent resource commitments in terms of staffing, equipment and premises arrangements. For LEAs, this presents a challenge in terms of bringing these issues together to produce justifiable proposals and on-going implementation plans. Thus, Harland (1988, p.1) notes that 'knowing how to write curriculum development submissions in order to attract extra resources to supplement their own educational spending is becoming an essential skill for all LEA and school managers'.

This section examines the ways in which LEAs have used the (additional) TVEI resources and some of the approaches they have adopted in the development and management of their TVEI projects and schemes. This will be done by looking at the selection of participating institutions and students, the administration of TVEI projects, and the organisation and delivery of the

curriculum. Attention will be given to the relationship between policy and practice by exploring the possibility that practices in TVEI projects are influenced by the TVEI policy guidelines on the one hand, and by the reality of the implementation arena on the other. This needs to be borne in mind as the discussion turns to the variety reported in TVEI projects in terms of organisation, curriculum and management (MSC, 1985b; Hopkins, 1986; McCabe, 1986; Stoney et al, 1986; Barnes et al, 1987 and 1988; Gleeson, 1987; Lines and Stoney, 1989, TA, 1989).

2.3.1 The Selection of Participating Institutions and Students

In general, the requirement for TVEI to be provided for the 14-18 age range has resulted in a group of schools (14-16/18 years) and colleges of further education (16-18/19 years), varying from two to 17, being involved, either separately or as a consortium or consortia, in each LEA project (MSC, 1985b). A primary consideration in an examination of the TVEI pilot, therefore, concerns the number and combination of participating institutions and the methods used to select them. The number, type (school and colleges) and combination of participating institutions is important because there will tend to be an inverse relationship between the number of institutions involved and the level of resources available for delivering the Initiative in the selected institutions. This is particularly crucial in the TVEI where, as already noted, the Initiative has been described as resource-led and where replicability is a major objective. Similarly, the balance between schools and colleges is important because it is indicative of the extent to which TVEI projects reflect the 14-18 (rather than 14-16) requirement of the Initiative, particularly where only 11-16 schools are involved.

Related to the selection of institutions is the issue of the identification of participating students. Although the TVEI Extension is designed to include all secondary schools and pupils, the national criteria on the pilot suggested that each project should provide for between 800 and 1000 students in the 14-18 age range over four years, or 200-250 students per year group. This group represented the official TVEI 'cohort'. The requirement led some LEAs, particularly those in the initial rounds of the pilot, to concentrate TVEI programmes on a select group of students within the 14-18 age range. As the implementation progressed, however, other projects locally extended their programmes to include more students thereby blurring the distinction between TVEI and non-TVEI students.

The notion of 'cohorts' raises a range of management issues. For example, an LEA decision to select a TVEI cohort from the relevant age range could create tension in situations where the Initiative is popular with schools and pupils and where many of them want to participate. Conversely, tension could still arise in situations where the Initiative is unpopular and many students do not want to participate but where the LEA is anxious to meet the stated target in order to attract the necessary funds. This latter case also presents problems in terms of meeting the requirement that participation in the Initiative should be voluntary. Again, given that schools are of different sizes, the issue could arise as to whether the cohort figure for an LEA should be allocated equally between all participating schools, or whether the allocation should be linked to various school populations, particularly where the cohort is used as the basis for resource allocation.

2.3.2 The Management of TVEI Projects

The decision to invest in personnel needs to be considered in relation to the high proportion of expenditure attributable to staff salaries. Thus, Hinckley (1988) notes that decisions about whether to put the bulk of a budget into staffing or equipment are not taken lightly by managers in education. One reason for putting more money into people rather than into equipment is that equipment often goes easily out of date. Further, as Dennison (1984) points out, whereas an activity can be undertaken (albeit inefficiently) without equipment, no activity can be undertaken without a human input. Costs apart, however, an important issue relating to staffing concerns the ways in which organisational tasks and members relate to one another. This section therefore examines the key roles and relationships emerging from the implementation of TVEI projects.

Project Management Structure: The project structure formally defines the roles of, and relationships between, the major groups and individuals within it. According to Sims (1986, p. 31), TVEI project management structures have been built around 'the formulation of policy, the implementation of policy and the monitoring of progress' with a clear accountability mechanism being incorporated into the structures. At the LEA level, project structures are typically made up of two main categories of individuals and groups: a TVEI special committee structure and a full-time TVEI central team, separate from LEA officers and advisers.

The former typically embodies a number of management committees, advisory groups and development and working parties which are charged with specific roles and functions. For example, Sims

(1988) reports that all TVEI schemes have a steering committee (sometimes called the monitoring/advisory/management group) to give overall guidance and direction with membership drawn from local councillors, the LEA, and representatives from industry, the trade unions and institutions in addition to the project co-ordinator.

In addition to steering/advisory committees, projects also have (senior) management committees/groups, the titles of which also vary according to LEA: for example, Project Development Group, Management Committee and Planning group. These groups usually consist of headteachers and principals of participating schools and colleges, the project co-ordinators, careers officers, and representatives from industry. While steering groups meet about once or twice per term, management committees convene more often and their function is to formulate policy and oversee the implementation of policy. The agendas for their meetings are usually set by the co-ordinators who also constitute an executive or implementation group of their own. This committee of project and institutional co-ordinators meets at least once a month and sometimes more than once a fortnight, although the meetings have tended to be less frequent as TVEI implementation has progressed (Lines and Stoney, 1989). A final major group in the project organisational structure consists of a series of curriculum (development) groups/panels. These groups consist of representatives of a number of curriculum areas, either subject or cross-curricular based, and are drawn from all participating institutions.

Of, perhaps, more importance to the management of projects is the central TVEI team. In accordance with the TA requirement, projects are managed within an LEA by a project co-ordinator who

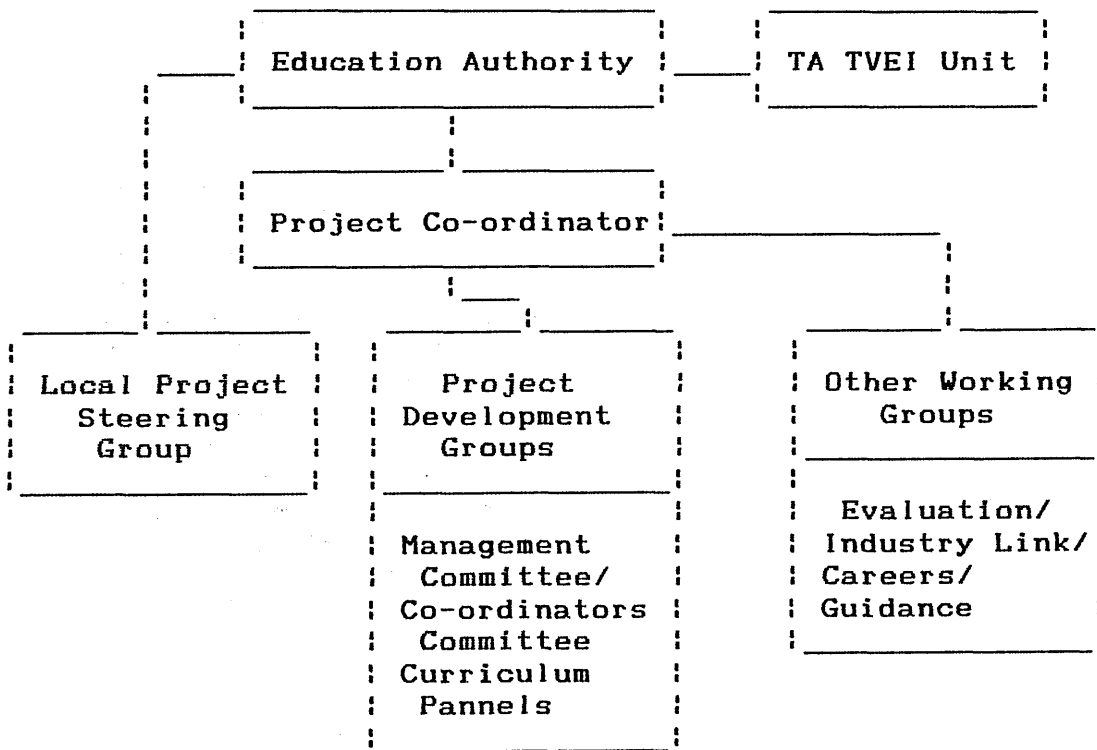
usually has some clerical and administrative assistance based in the same location (eg MSC, 1985a; Stoney et al, 1986; Gridgwood et al, 19889) In several projects, the central teams also include deputy project co-ordinators and a few others who are responsible for specific aspects of the project development and management. In addition to these project 'central teams', Hinckley (1988) reports that many TVEI projects have introduced some form of central team, outside the LEA advisory service, in order to provide a variety of back-up services for the Initiative at the school level. At the institutional level, co-ordinators have also been appointed in most participating institutions to take charge of the management of the Initiative in their respective institutions.

The introduction of these new management structures raises issues which extend beyond those relating to managing an innovation, or teacher support and training. They have important implications in terms of, for example, the relative allocation of material and staff resources within projects and the extent to which the individual schemes within projects are centrally controlled and supported or are devolved (in terms of managerial responsibility and resources) to schools. A typical project management structure is shown in Figure 1 below.

Roles and Relationships: Although management structures of the type outlined above give some indications of the roles and relationships existing within an organisation, they do not make the dynamics within the system explicit. In the TVEI, for example, project co-ordinators are responsible for the overall management of projects, including the management of TVEI funded resources and liaising with the TA. In many cases, however, they are appointed after participating institutions have been selected

Figure 1

TVEI Project Management Structure



and initial TVEI plans have been developed. Besides, their briefs are often not explicit (Saunders, 1988). Similarly, whilst some project coordinators have been reported as valuing the guidance and support provided by their steering groups, others have stated that their groups had not found a useful role for themselves (Sims, 1986). Again, Sims (1986) reports that co-ordinators often referred to their management committees as 'the powerhouse' of their projects, suggesting that some groups are more vital than others. For these and similar reasons, roles and relationships are context dependent.

There are a number of important issues relating to roles and relationships in TVEI. One concerns the approach adopted by LEAs for developing initial and on-going TVEI plans. Various approaches have been reported in this connection. For example, Stoney (1986) reports that, in some instances, institutions within the LEA were required to draw up their own submissions and compete for selection. This approach, when extended to the implementation of TVEI, has implications in terms of the degree of control which the LEA has over institutions within it in relation to the interpretation and implementation of the Initiative. In this context, Barnes et al (1987, p. 8) have identified three possibilities:

Central Control - The LEA sets up a structure which gives schools the task of carrying out decisions made elsewhere.

Collaborative Control - The LEA uses its power to set up structures which encourage groups of teachers from different schools to meet together and take decisions for instituting changes.

Diffused Control - The LEA effectively delegates power to the institutions taking part.

Each of these types of relationship between the LEA and institutions is likely to affect institutional choices

differently. Such choices include decisions relating to curriculum content, organisation and delivery, as well as staffing, finance and resources.

A key individual at the project (LEA) level is the project co-ordinator who has been identified as a central figure in the TVEI (MSC, 1985b; Stoney et al, 1986; Bridgwood et al, 1988; Lines and Stoney, 1989). At the school level, key administrative positions typically include those of the head, deputy heads and heads of department. However, with the introduction of TVEI there has developed a number of new roles and positions within education for both teachers and administrators. One of these, which is central to the implementation of TVEI, is that of the school co-ordinator. The appointment of school co-ordinators as well as co-ordinators for specific developments in the TVEI enhances the status of the Initiative and emphasises the need to relate personnel directly to new developments for the effective delivery of educational initiatives. Beyond the appointment of co-ordinators, however, arises the issue of how the new roles relate to the existing ones as well as the management implications of such new roles.

In the TVEI, while the project co-ordinator is a key actor at the LEA level, both the headteacher and the school co-ordinator are key figures at the school level: the headteacher as the chief executive, and the school co-ordinator by virtue of his/her central role in the implementation of TVEI in schools (Stoney et al, 1986; Bridgwood et al, 1988; Lines and Stoney, 1989; TA, 1989). As pointed out above, the issue, then, is how these individuals relate to one another and to others, such as LEA officers and advisers at the LEA level and heads of department and co-ordinators of curriculum areas in schools. In practice

such relationships are likely to have both formal and informal elements. For example, Sims (1986) reports the practice of informal 'sounding out' of key personnel by project co-ordinators whereby the outlines of new policies or policy adjustments were often discussed individually between the project co-ordinator and the relevant institutional heads, institutional co-ordinators and LEA advisers thereby ensuring a considerable exchange of ideas before policies reached the committee stage.

Because roles and relationships are context related, their analysis can be strengthened by examining the factors enhancing or constraining them. Such factors could result from elements of the TVEI criteria as well from the management styles of key actors, or physical factors. For example, the constraint of time has been reported in most projects (MSC, 1985b, Gleeson, 1987; Saunders, 1988). This arises from the pressure created not only by the speed of TVEI's adoption, but also by the pace of educational reforms in schools in recent years. Thus, co-ordinators and school managers have struggled to develop and administer TVEI provision while preparing for such other initiatives as the National Curriculum. One headteacher, commenting on the pace of educational reforms, put it this way: 'I am not against changes but because there are too many changes we find ourselves coping, not with changes but with changes to changes' (Headteacher in BBC's Newsnight, Monday, 3 December 1990). Other factors which have been cited as affecting TVEI developments (eg collaboration) include the geographical factor of distance, structural and timetabling problems, and issues of adjustment resulting from differing organisational climates, particularly in school-college links (MSC, 1985b; Stoney, 1986).

At the individual level, management literature identifies a number of role problems (eg Ribbins, 1985). Such problems include role ambiguity, conflict, and overload. In the TVEI, Sims (1986) reports that project co-ordinators have expressed frustration at having to serve several masters including the TA, the LEA and the school. The same can be said of school co-ordinators who may be torn between their responsibility to the project consortium, the school and individual teachers and curriculum areas. Given such a situation, the question arises as to how much autonomy co-ordinators have to organise their projects and schemes. Similarly, role overload, especially for key participants, is likely to occur in the TVEI where the concern is with both curriculum and administration including teaching and learning innovation, and where additional demands are placed on staff time by such developments as guidance, records of achievement and residential and work experiences (SHA, 1988). This has implications for the organisation of activities, and the allocation of resources in schools in terms of possible 'slack' mechanisms aimed at accommodating the development and delivery of the above named activities (in addition to planning and INSET).

With respect to role conflict, it would appear, as Roberts and Ritchie (1990) have noted in relation to the National Curriculum, that the TVEI undermines the traditional hierarchical model of school management by creating new posts necessary for inter-school and inter-disciplinary curricular planning. An issue of primary concern is the status and role of the school co-ordinator relative to the head, deputy heads, and heads of department. Within the school, attention has been drawn to the likely tension that could arise between the co-ordinator and the

deputy head because of the overlap between some elements of the co-ordinator's role and the traditional roles of deputies (Pole, 1988; Lines and Stoney, 1989). In such situations, deputy heads may see co-ordinators as usurping some of their functions. A similar situation could occur in the relationship between the co-ordinators and headteachers. Lines and Stoney (1989) report that most co-ordinators report directly to the head. However, because of their 'gate-keeper' roles, co-ordinators must necessarily have a lot of contact outside the school. Some of these contacts, especially with the project consortium, may generate a need for some kind of policy (eg curriculum) modification within the school. In such a situation, if the co-ordinator's role is not explicit, or the co-ordinator does not have the necessary mandate from the head, this might result in tension between the two.

With regard to heads of department, the issue appears to concern the opportunities available for all to participate and to contribute to the development and delivery of programmes. For example, Lines and Stoney (1989) report that, in schools, most co-ordinators were seen as occupying a central, non-departmental role with a middle management status, suggesting that they generally have the same status as heads of department. However, the same report reveals that many heads of department indicated that they were not involved in TVEI activities beyond their departments, with a third not being 'involved in any TVEI related committees, either inside or outside the school' (Lines and stoney, 1989, p. 21). If common, this could have a significant implication for the management of the Initiative in general and collaboration within it in particular.

Monitoring and Evaluation: Emphasis is given to the monitoring and evaluation of projects and schemes in the TVEI guidelines. The Training Agency funded a number of independent evaluation studies at the inception of TVEI. For example, a team at Leeds University was commissioned to undertake studies on aspects of curriculum change and development while the National Foundation for Educational Research (NFER) did the same on the organisation, operation and reception of the Initiative. Several evaluation reports have been published by these and other groups (see Appendix II). For the purpose of this discussion, however, it is the local (LEA and school) evaluation that is more significant because the TVEI criteria and, in particular, the guidelines on local evaluation, have implications for the management of the Initiative. For example, since projects started as pilots, it was important for them to be monitored and evaluated as they developed in order that the educational and management lessons learned might be of wider application. At the same time, such evaluation creates an additional burden for LEAs and institutions, thereby presenting special challenges to them. Furthermore, the emphasis on monitoring and evaluation implies that TVEI programmes needed to be clearly identifiable relative to existing provisions in schools. In this respect, Saunders (1988) argues that such 'pilot discreteness' results in a management paradox. The argument is that pilot discreteness causes disruptions because it creates pilot 'enclaves' in which losers are at odds with winners. At the same time, pilot enclaves can be dismantled and pilot discreteness minimised by 'pre-emptive replication' (local extension). This, however, would also mean that TVEI programmes will be less identifiable and therefore less susceptible to monitoring and evaluation. This suggests that issues of evaluation are related not only to

the evaluation process but also to the entire management and implementation process.

Although, as noted in the previous chapter, school objectives are many and varied, the TVEI objectives of schools relevant to this study are mainly twofold: the educational objective of pupils' achievement, and the economic objective of efficiency in the use of resources. The focus here is on the resource aspect; elsewhere, (eg Fitz-Gibbon et al, 1988; Hopkins and Leask, 1989), the educational outcomes of TVEI have been examined.

As noted in the previous chapter, apart from the Local Management of Schools (LMS) which makes resource management a high priority in schools, the cost-effectiveness of programmes is one of the aims of TVEI (Aim b-i). These developments suggest that the gap between educational and business or commercial establishments in terms of budgetary and resource management strategies is not only closing, but that the thrust towards greater control and accountability is gaining momentum. The developments also pose a challenge to LEAs and schools. In practice, resource utilisation may or may not reflect allocation intentions. However, categorical funding implies a linkage between resources and objectives and activities. By adopting the strategy, the TA is indirectly challenging LEAs and schools to meet these expectations or to adapt them if they are felt to be inappropriate.

2.3.3 The Organisation and Delivery of TVEI Programmes

The school curriculum is constantly developing, influenced by changes in educational thinking, changes in demands from industry and society and in the needs and aspirations of young people themselves. In this process of change, the management of

resources, both human and material, is an important factor. However, as Dennison (1984, p. 112) points out, 'there is a world of difference between a dynamic, responsive curriculum and a static, inflexible approach: even when provided by the same level of resources'. Such differences occur partly as a result of the differing managerial capabilities of school managers and partly because, as Handy (1976) notes, many schools are not aware of the management opportunities and alternatives available to them. This section considers the relationship between resource availability and curriculum implementation in secondary education generally and TVEI in particular. This will be done by looking at the management implications of organising and delivering the school curriculum with particular reference to the TVEI.

The TVEI Curriculum: LEAs are eligible to receive financial support only to deliver those identifiable elements in the curriculum that are different from what was on offer previously. Principally, but not exclusively, curricular innovation in projects has occurred in the more technologically based subject fields such as Business Studies, Craft, Design and Technology and Information Technology. This trend appears not only to be general, but also sustained in projects over the TVEI pilot, although the emphasis shifted progressively from content (subject based) to process (teaching and learning styles) as the implementation of the Initiative progressed (TA, 1989).

The general emphasis on technologically-based subjects apparently reflects the desire of LEAs and schools to address the technical and vocational focus of TVEI. However, the shift from content to process is less susceptible to explanation and could reflect a response to a variety of factors and/or forces. For example, it could reflect a reaction to initial project evaluation reports,

or a desire to take account of the needs of teachers and/or parents. A reaction to evaluation reports could stem from the fact that the TVEI guidelines emphasise both content and process. Thus, while changing guidelines may be a possibility, once subjects and courses are established, the content aspect may be felt to be largely addressed and emphasis would then be directed towards process. At the same time, an emphasis on content will invariably involve only a proportion of teachers and curriculum areas while an emphasis on process will involve more areas and teachers since teaching methods can be applied in any area, TVEI as well as non-TVEI. The shift from content to process could, therefore, reflect a desire to involve more areas and teachers in the Initiative in order to avoid internal conflict amongst teachers. The same argument can be advanced with respect to parents, particularly where parents are reacting negatively towards the Initiative. This is because parents are less likely to notice changes in process (in the form of teaching methods) than changes in content (in terms of subjects and courses) since the latter can be easily discerned from pupils' reports. These examples are relevant to the issue of the relationship between policy and practice and suggest that the same choice might be made by different schools for different reasons, so that an understanding of the choice requires an examination of particular contexts.

The requirements for LEAs to meet other criteria, such as, catering for the full range of abilities and the provision of practical, experiential learning and equal opportunities has meant that projects' curricular activities are not limited to subjects and courses. In practice, LEAs and schools have addressed these issues through devising new patterns of

curricular organisation and giving greater emphasis to cross-curricular activities. Many of such activities (including careers guidance, profiling and records of achievement, and work and residential experiences) were explicitly encouraged in the TVEI Aims and Criteria and most TVEI projects included them in their curricula. Similarly, several TVEI schools are reported to have placed considerable emphasis on residential (out-of-school) experiences (Barnes et al, 1988). Given that these activities are contained in the TVEI guidelines, the issue becomes less about whether they have been included in projects than about how they have been included and managed. This can be addressed by examining the organisation and delivery of TVEI activities.

Curriculum Organisation: Two important developments reported in TVEI projects in relation to the organisation of curricular activities are the 'integration' and 'modularisation' of subjects and courses (Barnes et al, 1988; TA, 1989). Integrated courses are developed by combining elements from different subjects and/or cross-curricular activities. Typically, such elements are derived from groups of related (generic) subjects. With respect to the modularisation of subjects, Barnes et al (1988, p. 90) report that 'modularisation of the TVEI curriculum was a strong feature of TVEI activities' in many schools. According to them, teachers claimed that modules, or the organisation of activities into small self-contained units, led them to identify the main components of courses, and to present course-work in smaller, more manageable parts. These developments obviously have resource implications. For example, since teachers are normally trained to teach particular subjects, the integration of elements from different subjects into a course has implications for

resource availability and teacher utilisation as well as for teacher specialisation and staff development.

Typically, the school curriculum is classified into core activities, undertaken by all pupils, and optional activities, undertaken by a proportion of pupils. Optional subjects are primarily designed to address pupil differentiation by giving them the opportunity to select subjects of their interests and capabilities. The decision as to whether to provide TVEI subjects as core or as options is an important choice in relation to the organisation of programmes. In this respect, the Training Agency (MSC, 1985b, p. 6) points out that: 'the new programmes must be an optional component, since the criteria for the Initiative require entry to the programme to be voluntary'. This statement represents an example of a TVEI criterion which, in practice, might not occur, reflecting a disjuncture between policy and practice.

Within the option system, however, three alternatives - 'free', 'constrained' and 'blocked' have been reported in TVEI projects (MSC, 1985b; TA, 1989). For the free option subjects, pupils can select from them as they wish to make up their total programmes. When the options are constrained, however, subjects are grouped according to particular patterns (which vary between schools), usually according to disciplines or, as commonly called in schools, core areas (usually creative studies, humanities, science and languages). Pupils are then expected to select one or more subjects from each of those categories. The device of constraining some options is aimed at enhancing curriculum breadth and balance for individual pupils. Sometimes options are 'linked', resulting, for example, in a 'double option' situation whereby the selection of one option from a particular category

requires the selection of another. This is done to ensure curriculum depth and coherence; thus, a school might have Business Studies I and II as double options. The balance between TVEI subjects as core and as options has resource implication, for as the Training Agency (TA, 1989, p. 21) points out, 'the more that can be done to increase the size of the unit for curriculum planning the more economies can be effected'.

A primary indicator of the linkages between activities, pupils and teachers is the school timetable. In the TVEI, 'block timetabling' whereby pupils are committed to large blocks of curriculum time (periods) has been reported in some schools (MSC, 1985b; Barnes et al, 1987 and 1988; TA, 1989). Various reasons, such as enabling resources to be pooled together and used at the same time have been given for this. However, the arrangement needs to be examined beyond this reason. The Training Agency (TA, 1989) for example, has instanced one case where 30% of curriculum time was spent on technological subjects, but not a single girl was involved. Similarly, by devoting a large percentage of time to an activity, a large proportion of teachers and other resources may be inflexibly committed, thereby affecting the overall flexibility of the system.

The Pupil Dimension: As indicated in chapter 1, curriculum organisation cannot be fully defined without a linkage between programmes and relevant pupil groups. This is relevant to the issue of pupil differentiation which also has implications for resource utilisation. For example, pupils differ in gender and ability level, and there are some with special educational needs. A primary consideration in the organisation of programmes is therefore the need to cater for such variations in pupil characteristics. Similarly, account needs to be taken of the

age/year groups of pupils in the organisation of activities and allocation of resources. Approaches to these issues are likely to differ from school to school. Thus, while some may adopt separate sex, ability and special needs pupil groupings, others may decide to have mixed groups. Every school will have a reason for adopting a particular approach and every approach has its merits and demerits in educational and resource terms. For example, the separation of pupils by particular characteristics may demand more or special resources, or may be better suited for meeting individual pupil needs.

Teacher Utilisation: LEAs have, necessarily, called on extra staffing resources in the implementation of their schemes. The extra resources are, partly, taken up in the development of ideas and materials for new programmes, but they are also necessary to keep the programmes running. The balance between staff costs for development and for maintenance of programmes as well as between teaching and administration is a crucial factor in determining staffing costs for the extension and replication of TVEI.

Although there are several types of resources, both human and material, the importance of people in the delivery of educational programmes is particularly significant. Similarly, although teaching and non-teaching staff play vital roles in schools, teachers play a much more dominant role, not only because they are directly involved in curriculum delivery, but also because they represent a substantial proportion of schools' resources in terms of cost. For these reasons, only the utilisation of teachers will be treated here.

Staff utilisation in the delivery of the curriculum is a matter of educational concern and of economic use of resources. This is more so given the current demand on schools for educational

accountability and pressures for fiscal restraint. In such a situation school managers may feel a great necessity to match teachers and pupils effectively and to use staff talents and skills to the best advantage. However, the achievement of effective allocation and utilisation of resources, which this implies, is not an easy task. In the context of this research, two issues, the specialisation of teachers and the related in-service training for teachers (INSET), are considered important.

The existing curricular practice of a school influences its current utilisation of staff, equipment, accommodation and other resources. Those resources, in turn, are likely to dictate and, sometimes, constrain the future curriculum. Similarly, teachers are recruited with expertise to meet current curriculum objectives and, once recruited, their specialisation could affect the direction in which the curriculum can change. Many TVEI programmes have not simply involved the enhancement of existing subjects; rather, schools have introduced completely new subjects into their curriculum. Obviously, these could not be delivered by instantaneously importing new teachers to match the new subjects. What has happened is that teachers have been transferred to new subject fields (Barnes, et al, 1987 and 1988; Hinckley et al, 1987; TA, 1989). For example, noting that few teachers were specifically trained to teach Electronics, Computer Studies and Information Technology, Hinckley (1987, p. 11) reports that 'it is interesting to note that for some, the subjects which they were teaching, were not those for which they are trained to teach'. Such 'migrations' or re-distribution of teachers clearly have resource management implications in terms of both flexibility in the use of resources, and the

effectiveness of the teaching process. On the one hand, certain developments in some TVEI projects, such as the integration of courses, makes the deployment of teachers across their areas of specialisation a necessary choice. On the other hand, the decision needs to be set against the quality of teaching as teachers try to come to terms with some unfamiliar subject matter.

Naturally, this development has entailed staff development on a considerable scale, adding to the significance of such migrations for the management of teacher resources in particular and overall school management in general.

With the inception of TVEI, a programme of TVEI related in-service training for teachers (TRIST) was organised for schools, both those which were already undertaking the initiative and those which were not. In addition to TRIST, however, those LEAs already involved in the Initiative organised specific in-service training for teachers (INSET) programmes to meet their particular needs. Staff development has been given a high priority in the TVEI, probably because the introduction of previous initiatives has been restricted by practitioners receiving inappropriate and insufficient training (see for example Stoney and Lines, 1987; Harland and Dias, 1988; Lines and Stoney, 1989). Although staff development in TVEI has largely been an LEA (project-wide) activity, instigated by the project co-ordinator (Pole, 1986), its management implications are reflected in schools. These implications have been highlighted at various points in this discussion. What needs to be emphasised here is that staff development is relevant to this research in terms of scope of INSET provisions and the areas which have benefited. For example, Lines and Stoney (1989)

indicate that teachers who were not teaching TVEI on TVEI schemes were involved in TVEI-related INSET either because the INSET was jointly financed by TVEI and non-TVEI funds, or because in-service training is being used to disseminate the lessons of TVEI. Equally important are the related issues of cover arrangements for those who are out on training, and the ways in which possible disruptions arising from the process are managed. Such disruptions are usually caused to schools' normal organisational and staffing arrangements by the simultaneous demands for teaching and INSET.

2.4 Implications for Resource Management

It has been noted that schools need to consider their educational objectives in relation to the needs of pupils and the efficient use of resources. Similarly, as an educational initiative, the introduction of the TVEI is expected to result in changes in the curricular offerings of participating schools. This section therefore briefly discusses some implications of TVEI implementation in schools for resource management and, therefore, this research. This will be done under three headings as follows:

- a. 'Change' implications of TVEI curricular choices.
- b. Efficiency in the use of resources.
- c. Decision making.

Change Implications of TVEI Curricular Choices: The definition of TVEI, in terms of the disciplines emphasised in the TVEI curriculum of a school, relative to existing provisions, is indicative of the change implication of the Initiative in the school. In addition to English and Mathematics, other school subjects are traditionally classified under, what are called in

schools, 'core areas'. These are usually the areas of creative studies (including craft and technologically based subjects), humanities (including geography, history and religious education), and science (including biology, chemistry and physics). The linkage of TVEI subjects and courses to such areas will not only highlight the balance between general and vocational/technical education (a TVEI criterion), but also identify, as will be elaborated in the next chapter, the 'winners' and 'losers' in TVEI implementation relative to the various curriculum areas.

The secondary school curriculum is typically structured around subjects and courses. However, as already noted in respect of TVEI, the curriculum has recently been developed to give more emphasis to cross-curricular activities. At the same time, the nature, and manner of organising these activities are likely to differ between schools. In research terms, therefore, the degree to which a new curricular activity has affected the overall curriculum of a school needs to be examined, since programmes introduced as a result of TVEI need to be seen in the context of existing ones. In this respect, a document from the TVEI Curriculum Database at Trent Polytechnic (TA, 1989) categorises TVEI programmes into (a) newly introduced with TVEI, (b) enhanced by TVEI and (c) unaffected by TVEI. This categorisation, as acknowledged in the document, is imperfect because 'enhancement', for example, is a subjective measure, varying in degree and depending on the evaluation criteria used. Thus, the same document combines 'newness' with 'impact', where impact is defined in terms of the number pupils involved in an activity, the amount of time allocated to it, the number of schools which have introduced it, and/or a combination of the three.

In organising their programmes, schools have a number of possibilities. For example, a TVEI curricular activity can be added to the existing provision without any change to the structure of the existing activities. In this case the total number of school subjects will increase. Alternatively, the new subject can be used to replace one or more existing ones with others remaining as before. In this case, the total number of school subjects may either be the same or less than previously. Again, a new activity can be injected into one or more existing ones. Here, the total number of school subjects will be the same but the structure of some subjects would have changed. In practice various combinations of these methods may be used but, whatever the method used, each will have different resource implication.

Efficiency in the Use of Resources: It is argued here that in education generally, efficiency in the use of resources in relation to choices on curriculum organisation and resource deployment needs to satisfy at least three conditions: first, the choice needs to meet the varying characteristics, needs and interests of pupils; secondly, it should minimise the use of resources; and thirdly, it should have the potential of reducing the pressure on teachers. With respect to the first condition, it was earlier noted that pupils differ in ability, sex and special educational needs. The extent to which activities are organised to take account of these differences, therefore, determines the extent to which pupils educational needs are met. At the same time, different choices will make different resource demands which may or may not enhance the achievement of the other conditions.

In relation to the three conditions identified above, pupil and teacher-periods are typically used as measures of pupil and teacher involvement in curricular activities (Knight, 1983; Dennison, 1984). This implies that the choices relating to the core and option status and the relative allocation of periods to subjects, as well as pupil group sizes are relevant to the achievement of efficiency in the use of resources.

Class sizes have both educational and resource implications. Educationally, a lower group size is claimed to be linked to educational effectiveness because it has the potential of enabling teachers to give more attention to pupils. In resource terms, group size affects the economy of teacher utilisation. Thus a lowering of group size will mean the creation of more groups and, therefore, the involvement of more teachers while the reverse will be the case if the group size is raised. In general, class sizes need to be optimised but that does not necessarily mean making them as big as possible. The concern here, however, is less about the determination of that optimal point and more about examining the variations in group size between subjects and schools, the factors that lead to them and their effects on teacher utilisation.

Class size typically relates to timetabled activities of pupils and teachers. Apart from class size, therefore, it is also important to have an idea of the 'out-of-class' (out-of-timetable) time needed to support effective learning 'in-class'. This involves a consideration of teachers' contact and non-contact time or **contact ratio (CR)**. The contact ratio is taken as the ratio between the time spent by teachers in 'face-to-face' contact with their classes and the total curriculum time. The contact ratio thus gives an idea of the

number of timetabled periods in a week spent by a teacher on teaching as opposed to preparation and/or administration. Considered in relation to individual teachers, a primary function of contact ratios is that they provide information on teachers' teaching loads (teacher-periods) which can be used to determine over and under loading of teachers.

As a measure of teacher work load, however, Dennison (1984) points out that the contact ratio in fact needs to be combined with class size because the former does not take account of the number of pupils actually taught. Thus, it would be inappropriate to say that two teachers with the same contact ratio have the same load when the total number of pupils taught by one is double those taught by the other.

Apart from teacher load, the relationship between group size and contact ratio can be explored in another way. For a given staffing level in a school, there is an inverse relationship between average class size and contact ratio. It is pertinent to point out that while the CR is a useful indicator of teachers' face-to-face teaching time, it is not suitable for examining the amount of teacher time devoted to particular subjects. This is because the CR relates to individual teachers who typically teach various subjects. Teacher-periods, rather than CRs, are therefore normally used when examining the utilisation of teachers relative to individual subjects or the whole curriculum.

Decision Making: In general, the criteria on which schools make their choices will influence the outcomes of decisions. While some of the choices may be influenced by external factors, it is the decision criteria adopted within schools that are more

significant here. For example, many LEAs have been reported as not being fully prepared (mainly as a result of the short lead-in time) before embarking on the Initiative (MSC, 1985b; Stoney et al, 1986; Gleeson, 1987 and 1989; Bridgwood et al, 1988). Similarly, Harland; (1988) warns of 'front loading', or the purchasing of all equipment from the start without taking account of resource needs that might arise during utilisation, as that could result in resource redundancy. At the same time, Seekington (1985, p. 28) also warns of the danger of schools drifting 'towards expensive and questionable over-arching structures'. While the first example is attributable to an external factor, the other two clearly rest with particular LEAs and/or schools.

With respect to the nature of the decision criteria, two forms - objective-quantitative and subjective-qualitative have been identified in relation to the rational and political management perspectives (Simkins and Lancaster, 1983; Simkins, 1989). These characteristics of decision criteria can therefore be used to examine decision processes. For example, in addressing monitoring and evaluation, a range of options will be available to LEAs and schools. Taking two extreme examples, one approach would be to develop detailed, objective and explicit performance indicators which will be applied formally, uniformly and systematically across the organisation at pre-determined intervals. Such an approach implies a substantial gathering and analysis of data and formal and immediate feedback. At the other extreme, the approach would be to trust that everyone is doing the right thing, to informally discuss performance as part of 'staffroom chat', and to provide feedback only when it is requested (assuming there is something to feedback). It is

obvious that this latter approach involves little or no need for statistical data. The point being made here is that the roles of information and communication in the evaluation process are relevant management issues, and that school practices lie at different points along this hypothetical continuum.

Finally, in this era of changing educational priorities in schools as reflected by the TVEI, it is clear that the relative status and power relationships between subjects or departments in the secondary curriculum will not remain stable. Thus subjects departments are likely to be rearranged into new hierarchies or other structures. In this transformation process, some will emerge as 'winners' and others as 'losers'. A number of issues, raised in this chapter, are indicative of relative winners and losers in TVEI implementation. What remains to be answered is what and who are concerned, and why? These and related issues are the subject of subsequent chapters.

2.5 Conclusion

By way of conclusion, the highlights of this chapter will now be summarised and linked to the key research issues stated in the previous chapter. As an innovation, the TVEI is aimed at enhancing the provision of technical and vocational education in secondary schools and colleges and its Aims and Criteria provide ample guidance for LEAs and schools. Within the TVEI framework, however, both LEAs and schools have substantial scope for local initiatives and choices. Several lessons can therefore be learned from a study of how the Initiative is managed in terms of the relationship between policy and practice and the intended and unintended consequences of an innovation. For example, despite the high profile accorded to vocational developments in the TVEI,

Lines and Stoney (1989, p. 33) report that 'a bulk of students' learning has concentrated on traditional general education topics'. The implication of this, as has been illustrated at several points in this chapter, is that policy implications are subject to different interpretations and that even where policy guidelines are largely explicit, apparent 'mis-matches' between policy and practice are likely to occur for different reasons. Similarly different implementers, in this case schools, can adopt the same practice for different reasons.

It has been noted that the TVEI guidelines embody a number of explicit curriculum and management assumptions. Similarly, the combination of the resource-led nature of TVEI, the speed with which it was launched and extended, and the its 'categorical funding' system of delivery present a special challenge to schools. However, a willingness on the part of schools to participate in the pilot cannot be equated with a contract to deliver according to specifications. This means that a primary research consideration concerns the degree to which TVEI practices in schools have been influenced by the TA TVEI guidelines, LEA policies, school objectives, and individual and groups within schools.

In organising and delivering their TVEI offerings, the achievement of a broad, balanced and relevant curriculum which takes account of the different characteristics of pupils not only needs to be the objective, but has also been emphasised in the TVEI guidelines. While having different options available to them, the disciplinary focus, the core and option system and the integration of subjects and courses have been identified in this chapter as relevant to choices about the use of resources.

Similarly, class or group size and the relative allocation of time (periods) to subjects have been noted to be relevant to the utilisation of teachers and other resources and, therefore, to the research.

Apart from addressing pupils' needs, the number and types of available teachers also need to be considered in the organisation and delivery of programmes. Because teachers are normally trained in particular areas, it is sometimes the case that the number of teachers may be adequate overall, while shortages exist in certain areas. The question of numbers and shortages in certain areas also raises the point about the load and pressure on teachers. In general therefore, the contact and non-contact time of teachers, their specialisation and mechanisms for staff development are relevant to the research.

Administratively, the TVEI has created new positions and management structures. Thus, such roles as those of TVEI co-ordinators have been created while other existing ones have been modified. The roles and relationships resulting from the introduction of TVEI in the selected schools will therefore be explored in this study. Of course roles and relationships are acted out in decision making and other processes. In terms of this research, those processes include the allocation of resources and the monitoring and evaluation of performance.

Although TVEI policy implications have been interpreted in different ways by different schools, the achievement of satisfactory outcomes in both educational and resource terms is the ultimate objective of every school. A primary consideration with respect to outcomes will therefore be to examine how resources have been distributed as a result of TVEI. In this

respect, it has been pointed out that the efficient use of resources will enhance the replicability of TVEI practices. This means that costs, both direct and indirect, are important research issues. Similarly, as an innovation, the 'change' implications of TVEI activities in terms of 'newness' and 'impact' will be examined.

CHAPTER 3

Managing Resources in Education: Rational and Political Perspectives

Literature on organisational decision making and implementation processes identifies a number of management perspectives which help to explain the relationship between an organisation, its members and the tasks performed in it. Pfeffer (1981), for example, identifies four organisational decision making models: the rational, the bureaucratic, the decision making/organised anarchy and the political power models. Of these, the rational and political perspectives are the most significant and have been most widely studied in recent times, although they represent opposing strands. They are particularly useful for analysing organisational management because they highlight the potential conflict between economic considerations of efficiency, effectiveness and goal-maximisation (rational approach) and the political reality of management arena in terms of physical and personal limitations and differences in values, preferences and management styles (political approach).

As indicated in chapter 1, the allocative choices of the case schools will be interpreted in terms of the rational and political management approaches (Pfeffer, 1981; Salancik, 1986; Welsh and Slusher, 1986; Cibulka, 1987; Scott, 1987; Lachman, 1989; Langley, 1989; Levacic, 1989; Simkins, 1989). This chapter briefly reviews these management perspectives and outlines the basis on which the various allocative choices of the schools will be interpreted. This will be done by starting with a description of the models.

3.1 The Rational Perspective

A rational perspective is based on a number of assumptions: clear, explicit and generally agreed and accepted organisational goals which provide a basis for action; a clear relationship between means (implementation strategies) and ends (outcomes); and a stable working environment in which the goals of an organisation can be achieved using resources (Pfeffer, 1981; Simkins, 1989). The key concepts underlying the rational model are 'purpose' and 'consistency'. The model assumes that events are 'purposive choices of consistent actors' (Allison, 1971, p. 11) and that 'behaviour reflects purpose or intention' (Allison, 1971, p. 13). The relationship between 'purpose' and 'consistency' in the model is explained by Allison (1971) who notes:

What rationality adds to the concept of purpose is consistency: consistency among goals and objectives relative to a particular action; consistency in the application of principles in order to select the optimal alternative (Allison, 1971, pp. 28-29)

These three concepts, consensus, purpose and consistency, are therefore considered the criteria on which the rational perspective will be judged. The notion of 'consistent actors' with 'purposive behaviours' implies that all organisational members share common purposes or goals which they seek to achieve through convergent means. In other words, a high degree of consensus exists within the organisation. In this case, consensus relates to organisational objectives which are largely shared by all organisational members. Because of the shared objectives, the organisation acquires a common purpose which its members then seek to achieve. In doing so, Pfeffer (1981) notes that the behaviour of members is not accidental, random, or rationalised after the fact; rather, behaviour is deliberate and guided by the pre-existing purpose. Finally, because consensus

and common purpose already exist, there is consistency between objectives, means and outcomes relative to the whole organisation on the one hand, and its sub-units on the other. These concepts need to be operationally defined, but before doing so, it will be necessary to outline the implications of the rational model for managers and the resource management process.

Simkins (1989) notes that the implications of the rational model can be encapsulated in three principles. First, decision and operational processes should encompass a comprehensive view of the organisation with choices reflecting organisation-wide objectives and priorities and a recognition of longer-term implications of particular resource commitments. This implies the need for a strategic plan which provides a framework for the management process and an information system which enables managers to relate key organisational results to organisational objectives and to decisions and operational processes.

Secondly, the rational process embodies a thorough consideration of alternative courses of action and, in particular, an assessment of the likely outcomes or consequences of the various possible courses of action. This latter requirement assumes that consequences can be fully and completely anticipated at the decision making stage. Difficult as this may be, the implication here is that the decision process should involve adequate consideration of options. Furthermore, the search for alternatives and assessment of consequences further highlights the need for a comprehensive information system and substantial cognitive effort on the part of decision makers.

The third implication of the rational model relates to the rationale for assessing likely consequences of available

alternatives. Thus, optimal results in terms of, for example, allocation and utilisation of resources is a primary objective of the model. This implies that selected alternatives should reflect this objective. Also, because it is possible to select the 'wrong' alternative and because unforeseen circumstances could result in inconsistencies or deviations (from the set out plan) during implementation, it implies that the performance of sub-units should be evaluated on an on-going basis in terms of their efficiency and effectiveness in achieving the stated objectives at acceptable costs. Furthermore, in order to enhance future performance and evaluation, the outcome of this evaluation needs to be explicitly expressed, perhaps in the form of performance indicators. The nature of this kind of evaluation process, again, emphasises the need for a comprehensive information system.

To summarise the discussion so far, the rational model is characterised by **consensus** about objectives, means and outcomes, **purposive** or **deliberate** behaviour, and **consistent** actions. In order to achieve these criteria, decision making and other processes need to have an organisation-wide focus with emphasis on longer-term plans. Additionally, the process involves the search for alternative courses of action, the assessment of the likely outcomes of available alternatives and the selection of those options which will produce optimum results relative to the organisational objectives. Further, the performance of sub-units need to be evaluated on a regular and formal basis and the outcome of the process explicitly expressed in the form of performance indicators. Finally, a comprehensive information system that informs decisions and actions is central to the model.

There is a strong case for a rational approach to management in general and resource management in particular. For educational institutions, the case is strengthened when they are faced by increasing demands on scarce resources arising from a combination of such factors as enrolment decline, national economic downturns and, in some cases, declining local economies. The model is popular both in management literature and in practice. Thus, Pfeffer (1981) notes that it is not only prescribed as being the best way to make choices in organisations, but frequently claimed to be descriptive of actual choice processes as well. Similarly, Lilly (1989) has noted that the emphasis on rationality has tended to portray other forms of behaviour (political in particular) as illicit so that when people exhibit political behaviour they, sometimes, tend to seek rational ways of legitimising it. Simkins (1989) also points out that by emphasising the importance of relating resources to desired ends and by considering what options are foregone when a particular pattern of resource use is chosen, the rational model provides a clear framework for thinking systematically about resource management. For these and similar reasons, the rational approach to management in general and resource management in particular has been the subject of much advocacy and substantial amount of literature over the past three decades (eg Lyden and Miller, 1978 and 1982; Levacic, 1989).

However, this image of rationality has increasingly been eroded by research in recent years. The limits to rationality are traceable to limitations at both individual and group/organisational levels. At the individual level, it is apparent from the discussion so far that rational approaches are extremely greedy for information. The first constraint on

rational decision making is therefore the limited cognitive and information-processing capabilities of individuals (Simon, 1955 & 1957; March and Simon, 1958; Cyert and March, 1963). Although the idea of 'bounded rationality' (March and Simon, 1958) is not necessarily a threat to the fundamental premises of rational processes, Simon's (1955) concept of 'satisficing' recognises the limits to the individual's ability to search for alternatives and to process information.

The second limitation of the rational model relates to the group or organisational level. The assumption of consensus or general agreement about objectives, the means of achieving them and their outcomes ignores differences in the personal characteristics, values, interests and preferences of group and organisational members. Furthermore, the model takes little account of other important organisational needs, especially those for control and stability. Thus, by requiring the consideration of a wide range of choices before decisions are made, and by implying at least thorough periodic reviews of all activities, the model could not only increase pressure on, and uncertainties for those who plan and manage the system, but also increase the degree of threat experienced by organisational participants and sub-units and hence the potential for conflict between them. Weick (1969), for example, points out that human motivation is divergent and self centred.

Finally, a third limitation stems from the fact that the model assumes away the significant difficulty associated with attempts to define, operationalise and agree upon organisational objectives. For example, it is often difficult to reach agreement on objectives, particularly in education where individuals and groups often have deeply held but divergent

values. The model thus becomes intrinsically problematic in organisations (especially educational ones) where goals are ambiguous, contested or conflicting, or where the relationship between means and ends is unclear. In this connection, Handy and Aitken (1986) have argued that, in addition to having strictly educational functions, schools also have custodial, certificating and socialising ones. Thus, they note:

It is hard to be friend, judge and guard-dog at the same time Faced with conflicting functions and no way of measuring success, schools have a major management problem. Without clear and agreed objectives there are no criteria for deciding how to allocate resources; everything becomes a political debate about priorities (Handy and Aitken, 1986, p. 39).

The successful adoption of the rational model in educational institutions is further complicated by the nature of their structures and processes. Educational institutions have been characterised as 'organised anarchies', 'garbage cans' and 'loose-coupled' systems (Cohen et al 1972; Weick, 1976; March and Olsen, 1986; Levitt and Nass, 1989; Masuch and LaPotin, 1989). In such a situation, streams of loosely coupled problems, solutions, participants and choice opportunities flow into the organisation at different rates and connect or disconnect according to a temporal rather a causal logic. According to Cohen et al (1972, p. 16), processes in such organisations 'depend on a relatively complex intermeshing of elements, (including) the problems that have access to the organisation, the mix of solutions looking for problems, and the outside demands on the decision makers'. This scenario, combined with the limitations of the rational model outlined above, particularly variations in the demands and preferences of individuals and groups within the organisation, largely form the basis on which the political perspective is built.

3.2 The Political Perspective

As indicated above, a primary criticism of the rational model is that it fails to take account of the diversity of interests and goals within organisations. This apparent oversight is recognised by the political model which sees organisations as being characterised by pluralism in terms of differences in the values and interests of individuals and groups within the organisation. These differences then generate divergent demands; that is, claims that particular values or interests should be furthered or protected. In order to achieve their particular demands, individuals and groups within the organisation use the 'power' which they possess to influence the behaviour or beliefs of others and, therefore, the organisational outcomes. In doing so, they also develop strategies for developing their power bases (political resources) where such bases are considered to be inadequate. Thus, as Simkins (1989) points out, the political model places particular emphasis upon differences among groups, especially formal groups such as sub-units or departments within organisations. March (1962) therefore describes business firms as 'political coalitions'. The key concepts of the political process, then, are pluralism, power/political resources and influence.

Following Lilly (1989), 'power' or political resource is seen here as stored energy while influence is seen as the use or application of that energy. Power is therefore static while influence is dynamic. According to Pettigrew (1973, p.25), 'a position (a political resource) may give a leader authority, but the exercise of that authority (influence) requires interaction'. Power, then, is not an attribute of the person but an attribute of the relationship and the situation (Pettigrew, 1973, Lilly,

1989). Political resources not only need to be possessed, but also to be controlled and used by organisational participants. As Bannester (1969, p. 386) succinctly points out, 'it is immaterial who owns the gun and is licensed to carry it; the question is who has his finger on the trigger'.

Because the political model recognises the existence of different, and even divergent, interests and preferences in organisations, the approach does not treat disagreement or conflict over values or objectives as problematic; it treats them as axiomatic. Where such conflict exists, the model presumes that the political resources of various social actors determine the outcome of the decision process, with those with the greatest resources receiving the greatest reward. In resource terms, the target for the exercise of power will include the allocation and use of resources. This is because the obtaining of such resources provides participants with the basis for developing those programmes which embody their values and further their interests; provides organisational legitimisation for the activities they are engaged in; and strengthens their political bases relative to the future. In relation to the last point, Gyford and James (1983) have distinguished between resources as prizes and resources as weapons: the resources which are bargained for (prizes) now form part of the array of resources which are bargained with (weapons) in future. The acquisition of resources is indeed the focus of one definition of political behaviour:

Political behaviour is defined as behaviour by individuals, or, in collective terms, by sub-units, within an organisation that makes a claim against the resource sharing system of an organisation (Pettigrew, 1973, p. 17).

The implications of the political model for organisational decision making and operational processes are rooted in the three key concepts of pluralism, power/political resources and influence, earlier identified. The concepts raise particular questions: pluralism, about differences in values and interests among organisational participants; political resources, about the sources/bases of individual and group power; and influence, about the strategies through which individuals and groups utilise their political resources.

Pfeffer (1981) points out that heterogeneity of goals is one condition for power. This is because, in organisational terms, heterogeneity resulting from task or structural differentiation is likely to yield sub-groups with different perceptions of situations as well as unequal status in terms of political resources. Political behaviour is further enhanced when differentiation is accompanied by specialisation and interdependence (Pettigrew, 1973; Pfeffer, 1977 & 1981; Welsh and Slusher, 1986). According to Pettigrew (1973), structural differentiation and consequent task differentiation in a condition of interdependence are likely to lead to particularistic sub-group attitudes and values and intergroup conflict. Thus the more sub-units have in common, in terms of overlapping activities, and the more task functions are specialised, the more likely it is that political behaviour will take place. As will be argued later, since the basis for differentiation could stem from the nature (eg activities included in the curriculum) or structure (eg subjects and departments) of tasks, it follows that the kind, nature and structure of school activities are relevant to the political model.

The second key variable is the political resources that individuals and groups can bring to bear upon the decision making process of the organisation. At the individual level, several classifications of sources or bases of power have been identified. Thus, an individual's political resource within an organisation may arise from position (formal or informal) within the organisation, from expertise or information needed by others, from personality (eg charisma), from possession of or control over key tasks and resources, or from an ability to use physical sanctions to influence decisions (Handy, 1976; Pfeffer and Moore, 1980; Hoyle, 1986; Lachman, 1989). These power bases have implications for internal management structures of schools. Thus, in addition to formal hierarchies of headteachers, deputy headteachers, senior management teams, and heads of departments, other lateral groups such as the group of year heads, heads of departments or form tutors are relevant to the analysis of the political model.

Various factors have also been suggested as affecting the political resources of sub-units within educational organisations. One is the ability of the sub-unit to control critical contingencies or environmental uncertainties for the organisation, through, for example, its ability to mobilise external resources and to meet the needs of key external stakeholders (Hickson et al, 1971; Salancik and Pfeffer, 1974). A second is the degree of cohesiveness of the sub-unit (Lodahl and Gordon, 1972; Lodahl and Gordon, 1973; Pfeffer et al, 1976). Using the concept of 'paradigm' (Kuhn, 1962), Beyer and Lodahl (1976), for example, argue that high levels of 'paradigm development' in such disciplines as physical/biological sciences or engineering (as opposed to humanities and social sciences)

will lead to greater departmental consensus about goals and means of goal attainment which in turn will reduce internal conflict, facilitate coalition formation and hence strengthen the department in any contest for political resources. Finally, it is generally argued that access to decision making structures and the ability to use these effectively is a political resource which is important in sub-unit influence. Thus, for example, representation in several committees will be seen as a measure of subunit influence. For schools, this implies that representation in senior management teams might increase the status (political resource) and therefore the potential influence of those areas to which the members belong.

The final variable (influence) concerns the processes through which political resources are brought to bear on the decision making process. A range of strategies are possible, depending on the nature of the decision and the relative political resources of the sub-unit concerned. In the allocation of resources, for example, one strategy is the selective use of objective criteria. Thus, Salancik and Pfeffer (1974, p. 462) note that 'one use of organisational power may be to influence the criteria used in organisational decision making'. This means that organisational participants are likely to, first, assess the position of their sub-unit relative to the organisational decision making criteria in operation and, second, to use their political resources to influence the implementation and use of those elements of the criteria most favourable to their position.

Another important strategy relates to the control of information. The role of information in decision making is quite obvious. Consequently, secrecy, or the limitation of access to information can be used strategically by power holders to enhance and

maintain their capacity for action in the organisation or by decision makers to legitimise their actions. Such control of information, therefore, could relate to both the making of decisions and the communication of results. As with the rational model, this emphasises the role of information in the political process.

Two main parties are involved in any allocation process: those who control resources and those who seek them. The political perspective therefore assumes and even expects each of these parties to adopt certain strategies in their relationship with the other. With respect to those seeking resources, Greenwood et al (1980) note:

A department's share of scarce resources depends upon the skills of its advocates in the use of essential political tactics - such as knowing how much to bid for, how far to pad estimates, how far to over/underspend, how to 'read' the political climate, how to generate and utilise public support (Greenwood et al, 1980, :p. 29).

And for those in control of budgets, Tonn (1978, p. 29) includes the following as the strategies at their disposal.

- * Structuring the activities, timetable and responsibilities of other persons in the budget process.
- * Retaining authority for establishing planning assumptions and budget preparation guidelines.
- * Controlling access to information about important elements of budgeting, such as past performance of sub-units, budget guidelines, expectations of influential persons and one's own priorities.
- * Retaining large discretionary accounts or accounts such as travel and equipment so that 'favours' may be given.
- * Retaining authority for budget control so that mid-year and end-of year transfers among accounts may be made easily and obscurely.

To summarise, the political model is characterised by **pluralism**, **power/political resource**, and **influence**. The political model does not see conflict as problematic but as often inevitable and even desirable. Pluralism, which results from differences in values and interests among organisational participants leads to different individual and group demands. In addition,

heterogeneous goals when reflected in the form of structural and task differentiation or task and role specialisation, increases the chances of political behaviour. Further, both individuals and groups have various political resources which they can use to influence others in order to meet their particular demands and hence satisfy their interests. Further still, in order to influence others, both individuals and groups within the organisation have several strategies at their disposal. The nature of the strategy used and the degree to which it is applied will depend on the relative political resources possessed by and the role of the individual or group adopting the strategy. Finally, as in the rational model, information plays a central though different role in the analysis of the political model.

3.3 The Implications of the Models for Resource Management

Mangham (1979, p.8) points out that no model can fully specify 'how to organise in all circumstances'. Stating that such an assumption would be fallacious, he nevertheless calls for models which recognise all sides of decision processes: 'the good, the bad, and the ugly' (p. 16). The adoption of the rational and political models as the basis for interpreting schools' allocative choices largely addresses this issue, for, the 'theory of action' which explains the skills and strategies behind organisational behaviour has been argued to comprise two strands: 'espoused theory' and 'theory-in-use' (Argyris and Schon, 1974 and 1978; Argyris, 1985; Argyris, et al 1985). According to Argyris and Schon (1974), espoused theories are used to describe and justify behaviour while theories-in-use determine practice. When this analysis is combined with Pettigrew's (1973, pp. 5/6)) assertion that research models need to trace 'decisions empirically to find out what actually happens rather than what is

ideally expected to happen', the basis of this approach becomes clearer.

It has been argued that the political model can be analysed by examining the source, process or outcome of the use of power (Pfeffer, 1981; Lilly, 1989). It is similarly argued here that decision processes and outcomes in schools can be interpreted in terms of both the rational and the political models. This argument can be made clearer by highlighting some points which are relevant to the models.

First, with respect to the rational model, the concepts of consensus, purpose and consistency in relation to objectives, the means through which they are achieved and the their outcomes, beg the question: on whose definition? In the TVEI for example, the TA, LEAs and schools are all major partners in its delivery. Thus TVEI guidelines may be reasonably explicit but not followed by LEAs. The argument is also valid with respect to the relationship between an LEA policy and the decisions taken by its schools. Therefore, the fact, as can be seen from chapter 2, that different LEAs and school have adopted different curriculum and management approaches within TVEI suggests that the main issue is about whose definition prevails and why?

Similarly, with respect to the political model, Pettigrew (1973) was earlier cited as noting that power is not an attribute of the person but an attribute of the relationship and the situation. The implication of this is that political behaviour is reflected mainly in the interaction between participants in organisational processes. However, as Lilly (1989) points out, different people can apply the same strategy using different political resources while different people with the same political resource can apply

different strategies. At the same time, because influence is the outcome of social interaction, a given situation (eg decision making) may produce a political behaviour by certain actors in one context (school) but not in another. The latter could result from the holders of political resources (as a matter of choice) not being willing or ready to use them, or their not being able to do so due to lack of opportunity or because the political resources are dispensable or the issue is not critical to other relevant organisational members. For these and similar reasons, political behaviour is difficult to assess (especially after its occurrence) and much of the rationale or, in this case, motive for behaviour can frequently only be implied.

The second point about the rational and political models is that they may not be mutually exclusive in terms of interpreting either processes or outcomes. A decision, for example, may be seen to have both rational and political aspects; everything depends on the context and, as Allison (1971) points out, on the perspective from which the decision is examined. A number of examples may buttress this point.

First, consensus is often linked to the rational model and conflict to the political. However, the absence of conflict does not necessarily mean that a consensus exists. Thus, organisational goals can either be derived by consensus, or through effective imposition within the organisation. Similarly, an issue, as earlier noted, may be contested in one organisation but not in another, depending on the personal characteristics of organisational participants.

Secondly, rational intentions can create situations with political outcomes. For example, centralisation is often

associated with the rational model and decentralisation with the political. However, the formalisation of functions (a rational strategy) could leave decision making in the hands of a few individuals and groups and thereby lead to centralisation. At the same time, the formation of decision 'cliques', or the strategic use of information (political strategies) could also yield the same result. Similarly, decentralisation could be a deliberate process of delegation of functions and therefore a rational approach. At the same time, it creates more decision points and, therefore, more interest groups (a condition for political behaviour). Furthermore, it could be an attempt by dominant groups to create 'territories' for themselves and thus reflect the outcome of a political process.

Again, organisations with high levels of task specialisation are argued to display less consensus among members (Pfeffer, 1981; Welsh and Slusher (1986). This, by implication, means that the specialisation of functions enhances political behaviour. However, the specialisation of functions could reflect a deliberate and articulated system of division of labour, thereby reflecting a rational choice. Thus, Pettigrew (1973), in recognition of the rational and political implications of specialisation, notes that the specialisation of functions not only procedurises and so restrains power (the rational model), it also creates functionaries with a function to defend and a constituency to represent and draw strength from (the political model).

The final point concerns the rational concept of consistency and the political notion of winners and losers in relation to decision outcomes. On the one hand, political processes are often seen in terms of competitions in which some are winners and

others are losers. Lilly (1989) describes this as the 'distributive' or 'zero sum' perspective of power relations. On the other hand, the outcomes of rational decisions are expected to be consistent within and between organisational sub-units because choices involve the selection of goal-maximising alternatives, regardless of which particular groups within the organisation favour those alternatives, or are favoured by them. In general, therefore, the rational aspect expects choices and outcomes to be uncorrelated with the interest of particular groups, and vice versa for the political. However, this view, on its own, raises at least three problems. First, consistency of outcomes relative to particular activities or groups could result from organisational priority (a rational concept) rather than from the influence of the groups concerned. Secondly, the 'prior preferences' of particular individuals and groups are usually covert and therefore difficult to ascertain. Finally, a lack of consistency could be the effect of shifting power relations in a situation where the relative political resources of sub-units are not stable but shifting.

Two points can be discerned from this argument. The first is that goal maximisation is a primary objective of the rational model and, as a result, the model sees outcomes in **organisation-wide** terms. By contrast, because of the concept of pluralism underlying the political model, sub-unit interests are emphasised and, as a result, the model sees organisational outcomes in **sub-unit** terms. The second point is that the criterion of 'winners' and 'losers', in relation to organisational outcomes, is as relevant to the political model as to the rational. The difference between the two is that the rational model sees 'winners' in terms of organisational

priorities, while the political model does so in terms of sub-unit gains and losses. These two points will form part of the basis on which the allocative choices of the case study schools will be interpreted in terms of the rational and political models.

Cibulka (1987) identifies three types of rationality:

'technical/functional', 'substantive' and 'employee justice' rationality. According to him, technical rationality emphasises the maximisation of efficiency, regardless of which goals are selected or how they are selected. Similarly, substantive rationality aims at 'the pursuit of proper organisational goals' (Cibulka, 1987, p. 29), which may or may not reflect the interest of all concerned parties. Finally, employee justice rationality focusses on the satisfaction of organisational members. As Cibulka points out, the three strands of rationality make different and, sometimes, conflicting demands on organisations. Thus, it is unlikely that they can maximise technical rationality, substantive rationality and employee justice rationality simultaneously. The various strands also have implications for the political management perspective in terms of reconciling the objectives being addressed, the means of achieving them, and the interests of organisational members and sub-units.

Translated into the context of schools, and in relation to the research issues outlined in chapter 1, these strands of rationality relate to the educational and resource objectives which schools seek to achieve, but which can sometimes conflict with one another. For example, the need to meet the needs of pupils may not be compatible with the need to reduce the pressure on teachers. In making allocative choices, therefore, an

important aim will be the reconciliation of the relevant educational and resource objectives. This need to maximise the achievement of both the educational and resource objectives of schools, together with the two points identified above, will form the basis on which the allocative choices of the schools will be interpreted.

The interpretation will take two forms. First, the allocative choices, in terms of the patterns of curriculum organisation and delivery and administrative arrangements reflected in the schools, will be analysed to establish relative 'gains' and 'losses' and the individuals, groups and/or areas affected. Secondly, an attempt will be made to interpret the gains and losses. The first part will seek to establish the degree to which the various choices of the schools have produced winners and losers; and the second part will attempt to explain the rationale for the gains and losses against the background of efficiency in the use of resources, the needs of pupils, and the satisfaction of teachers.

The Analytical Framework

4.1 The Concepts of 'Programmes' and 'Subprogrammes'

Five key research questions were identified in chapter 1 and elaborated upon in the review of literature in the previous two chapters. Those questions need to be operationalised into a researchable form. As literature on research design and methodology points out, there needs to be a clear relationship between the definition of the problem, the design of the research study, the kinds of data gathered and the researcher's role; that relationship is the focus of this and the next chapters. In this chapter, a conceptual framework will be developed which will enable those research questions to be addressed by a methodology derived in the next chapter.

Bacharach et al (1990) have noted that many studies of participative decision making have adopted a monolithic (single domain) approach to the construct. Pointing out that such studies have failed to identify the specific domains of decisions in which an organisation's members can become involved, they call for 'multi-domain' approaches in which the examination of decision processes includes identification of, and analysis at different decision levels. Valid as this argument may be, it is also clear that the number and variety of activities taking place in schools are so many that it is not feasible to incorporate each and every one of them in a single research framework. At the same time, to conceive school processes as one huge lump of activities will make it difficult for internal processes to be meaningfully explained. As will be made clearer shortly, a compromise position that takes account of the problems and

limitations associated with these extreme positions has been adopted.

It is argued that, typically, school activities can be grouped into four categories: curriculum, cross-curricular, curriculum support and administration. Curriculum activities relate to subjects and courses in various disciplines, while cross-curricular activities relate to inter-disciplinary or non-disciplinary activities. Similarly, curriculum support activities relate to curriculum and staff development, while administration relates to other non-teaching activities. Given that schools will have different arrangements for these activities, an objective of the research is the development of a framework that takes account of these variations. In analytical terms, therefore, the concepts of **programmes** and **subprogrammes** are employed.

A programme is here defined as a coherent set of resourced activities with its own objectives. A subject in the curriculum could, for example, be a programme as could the whole curriculum, depending on the level of analysis. A subprogramme is a sub-unit of a programme with resource implications different from other sub-units within the programme. Thus, if the whole curriculum is a programme, then subjects/courses within it will be subprogrammes provided that they make different resource demands.

The basic framework for considering these issues is an adaptation of Brown's (1978) approach to programming in government services. According to Brown, programmes can be generated in two ways: either by starting from broad purposes or objectives and moving down to activities, or by starting from the bottom, with activities, and working up to objectives. The latter approach is

adopted here because, this way, one works with tangibles (activities) rather than intangibles (objectives). The approach is further in tune with the decision to examine aims and objectives indirectly. Programmes can be formulated in two basic ways, and Brown's (1978) terminology might be useful for explaining this. According to him, every programme consists of two components: a 'what' component and a 'for whom' component. A programme is fully defined only when both components are specified; for example, Mathematics (what) for 4th year pupils (for whom). Subprogrammes will result only if at least one of the following conditions exists:

1. The 'what' component is not homogeneous: for example,

Programme: Science for 5th year pupils

Subprogramme A: Biology for 5th year pupils

B: Physics for 5th year pupils

2. The 'for whom' component is not homogeneous: for example,

Programme: English for 4th year pupils

Subprogramme A: English for 4th year mainstream pupils

B: English for 4th year special needs pupils

A third possibility will be when both components are heterogeneous simultaneously. By the definition adopted here, a further requirement is that, to be significant, subprogrammes will show evidence of different resource demands through, for example, one subprogramme requiring specialist and/or more (or less) resources than others within the same programme. A special needs provision, for example, will be shown to have a different resource implication from mainstream provision if an examination of the 'for whom' component indicates that it is provided

separately, and that specialist and/or different amounts of teacher time or other resources are needed for its delivery.

It will be noticed that a consideration of the resource implications of programmes and subprogrammes implies the consideration of a third component: the 'how' component. While the first two components identify activities and the people, in this case pupils, for whom they are designed, this component describes how the activities are organised and delivered. Programmes will therefore be examined within a three cell schema: 'what', 'for whom' and 'how' (Figure 2).

4.2 The Components of Programmes

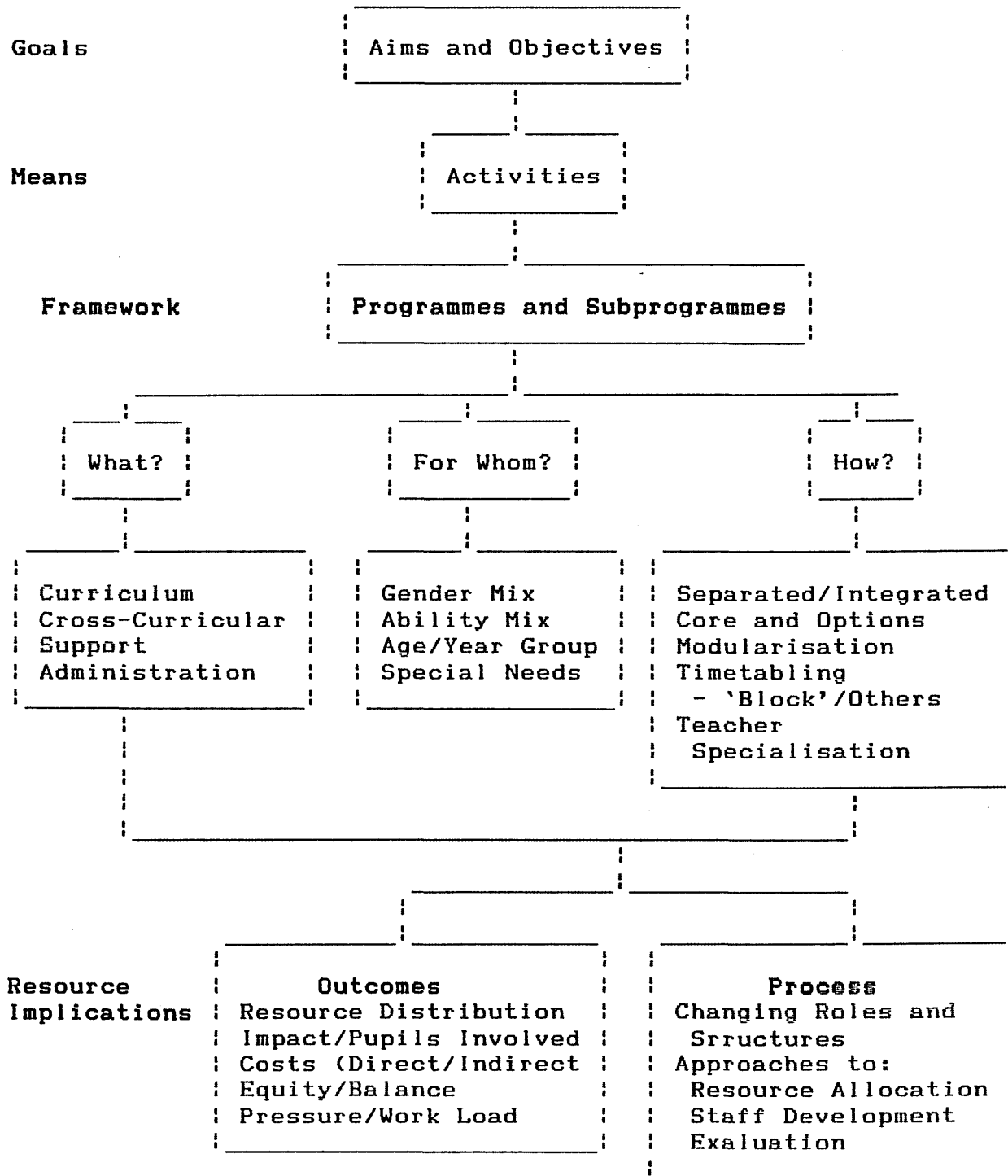
4.2.1 The 'What' Component of Programmes

As can be seen from the examples of programmes given above, the 'what' component relates to activities undertaken in an organisation. In relation to schools and the TVEI, it has been noted that these activities can be grouped into four major headings: curricular, cross-curricular, support and administration.

The decision as to what should or should not be included in the curriculum has educational as well as resource implications. Educationally, the outcome of the decision will be indicative of the types of learning experiences available to pupils. In other words, it determines the breadth of pupils' learning experiences. In resource terms, the nature and number of curricular activities will influence the type and amount of resources needed to deliver them. The decision also has implications for the rational and political models since, in interpreting the policy objectives of TVEI, schools need to reconcile the educational and resource

Figure 2

The Analytical Framework



objectives of the school with the interests of sub-units (curriculum areas) within them.

The TVEI Aims and Criteria (Appendix I) discussed in chapter 2, contain explicit references to curricular and cross-curricular activities. Thus, the reference to 'the provision of full-time general, technical and vocational studies' (Criteria, para. 1) has clear implications for curriculum activities in terms of the disciplinary focus of the activities. In practice, this is likely to be reflected in terms of subjects in schools. Again, with respect to cross-curricular activities, the provision of careers and educational counselling, records of achievement and work experience is explicit in the guidelines. Similarly, the requirement that each project and scheme should appoint a co-ordinator indicates the creation of at least one administrative (co-ordination) 'programme' in TVEI. These activities, and others identified in the case study schools, represent individual programmes in the four main activity areas.

In relation to the TVEI and this research, therefore, the nature and variety of curricular and administrative activities resulting from the implementation of TVEI in the case study schools will be examined under the 'what' component of programmes. It was noted in previous chapter that schools classify their curricular activities according to certain major disciplines, typically creative studies, humanities, languages and science. The TVEI subjects of the schools will therefore be examined in terms of these disciplines. On the one hand, the choices of the schools will be examined in terms of the schools' interpretations of the policy objectives of TVEI; and on the other hand, the choices will be examined in terms of how the major curriculum areas have benefited (or not benefited). Similarly, administrative

activities will be examined in terms of sub-unit and school-wide arrangements.

In summary, and as reflected in Figure 2, the 'what' component of programmes relates to curricular, cross-curricular, support and administrative activities. Furthermore, curricular activities will be examined in terms of subject and non-subject based activities and their disciplinary orientation, and administrative activities in terms of sub-unit and school-wide arrangements.

4.2.2 The 'For Whom' Component of Programmes

With the relevant activities identified, the next step in the development of the programme structure is to link the activities to the relevant pupils. This involves the introduction of the 'for whom' component of programmes. As discussed in chapter 2, the relevant variables here are the age/year group, gender, ability and special educational needs. The research, at this point, will therefore examine how the programmes identified under the 'what' component have been organised relative to these variables. Here again, the TVEI guidelines contain specific references to a target pupil group and acknowledge differences in their characteristics. Thus, the guideline not only specifies that the TVEI curriculum is for the 14-18 age range, but also emphasises the need for projects to cater for the full range of abilities and to provide for equal opportunities for pupils, including those with special educational needs.

Specifically, the research will, at this stage, examine the extent to which TVEI curricular activities at the schools have been differentiated, in organisational terms, relative to these variables. This is where the concept of subprogrammes comes in. Thus, while the differentiation (or lack of it) of activities to

take account of pupils characteristics addresses the educational objective relating to meeting pupils' needs and interests, its implication for the programme framework concerns variations in the resource demands made by the various choices of the schools.

In summary, the 'for whom' component relates to pupils and the relevant variables are age/year group, gender, ability and special needs. Furthermore, the research focus will be on examining the extent to which the schools have organised their TVEI curricular activities relative to mixed and/or differentiated pupil groups. and the variations (if any) in the resource demands made by the various options.

4.2.3 The 'How' Component of Programmes

Having linked activities to pupils, the next step will be to relate activities, pupils and resources. This involves the introduction of the final, 'how', component of programmes. It will be noticed that while the 'what' component identifies the nature of activities and the 'for whom' component defines the activities in relation to the nature of pupil groups, the 'how' component establishes the relationship between the activities, pupils and resources. In resource terms, therefore, while each of the components has its special value, the 'how' component represents the core of the programme structure. It not only explains how activities are organised for delivery purposes, but also how resources are distributed.

In operational terms, a number of key resource choices, based on practices in TVEI projects, were identified in the chapter 2. These are the integration and modularisation of subjects, the core and optional status of subjects, timetabling and the allocation of periods to subjects.

It was noted in chapter 2 that a significant development in the structuring of the curriculum in TVEI projects has been the integration of subjects. Consequently, an issue examined under the 'how' component concerns whether curricular and cross-curricular activities have 'separated' or 'integrated' structures. It has been indicated that subprogrammes can result when either the 'what' or the 'for whom' component of programmes are heterogeneous. The separated and integrated structuring of subjects is therefore relevant to the concept of subprogrammes relative to the 'what' component of programmes. Thus, because integrated courses are made up of elements from a number of different subjects, the research at this point examines the extent, and under what conditions, integrated courses make different resource demands from their component parts offered separately.

It was earlier noted that the nature and number of curricular activities relate to curriculum breadth. What the core and optional system in schools adds to curriculum breadth is curriculum balance and relevance. Thus, one of the objectives of the core and option system is to ensure that the learning experiences of individual pupils are not only balanced, but also relevant to their particular interests. While relating to an important educational objective, the core and optional status of curricular activities is also an important research issue in two ways. First, it was indicated in chapter 2 that the TVEI guidelines require pupil participation in the Initiative to be voluntary, implying that curricular activities should be in the options. It was also noted that institutions may or may not comply with the requirement. The TVEI curricular activities of the schools will therefore be examined in terms of the extent to

which they are provided as core or as options. Secondly, beyond the TVEI guidelines, the core and optional status of curricular activities also has resource implications in terms of how it affects group size.

Within the 'how' component, such other practices as block timetabling, across specialisation teaching and collaboration within and between institutions will also be examined in terms of the opportunities which they provide for enhancing the educational and resource objectives of the schools, as well as potential implementation problems.

With respect to administration, while the 'what' component is concerned with identifying administrative activities, the 'how' component relates to roles and relationships. In this context, it was indicated in chapter 2 that the roles and relationships resulting from the implementation of TVEI in the schools will be examined within the context of their approaches to the allocation of resources and staff development. Similarly, the ways in which the various administrative choices of the schools have affected, or been affected by the organisation and delivery of curricular activities will be examined in order to interpret the relationship between curricular and administrative activities.

4.3 Relating the Components to Educational and Resource Objectives

The programme framework outlined above represents the core of the research framework. Empirically, practices in the case study schools will be described in terms of this framework, drawing out strategic similarities and differences. Analytically, the resource implications of the various choices of the schools will be examined. In this context, a number of measures were

identified in chapter 1 which will be used to assess the various choices of the schools.

First, the impact of the TVEI in schools will be examined in terms of the proportion of pupils in the relevant year groups who are involved in designated TVEI curricular activities. In this respect the choices of the schools in relation to the core and optional status of TVEI subjects will be relevant since it influences the level of pupil involvement in various curricular activities.

Secondly, economy in the use of resources will be examined against the background of other educational objectives. For example, it was indicated in chapter 2 that pupil and teacher-periods are typically used to measure pupil and teacher work load. This suggests that the allocation of periods to subjects, and pupil group sizes are relevant to the economic use of resources. At the same time, economy needs not be achieved at the expense of other educational objectives. Consequently, the focus here will be on examining the criteria for allocating time to subjects in the schools, as well as the factors that influence group size. These will then be used in conjunction with various curriculum organisation choices (eg integration and modularisation of subjects) reflected in the schools to determine the conditions that favour the economic use of resources.

Thirdly, the balance or equity in the allocation of resources will be examined in terms of the degree to which the resources allocated to various activities match the proportion of pupils involved in them. This measure has been included because it is felt to be particularly relevant to the rational and political management models. As indicated in the previous chapter, the

rational model sees outcomes in organisation-wide terms, while the political model does so in sub-unit terms. By matching resources with pupils, the measure not only determines the curriculum areas which have been resourced more than others, but also highlights factors, other than pupil numbers, which influence the allocation of resources.

Finally, the 'pressure' on teachers will be considered in terms of the ways in which the curriculum organisation choices of the schools have affected the contact (face-to-face teaching) and, by implication, non-contact time of teachers. The measure has been selected because it is related to the 'employee justice' aspect of rationality discussed in the previous chapter. It is argued that the more the curriculum can be organised to reduce teachers' overall contact time, the less pressure they will have and, consequently, the more employee justice will be achieved.

In conclusion, the programme structure provides a useful framework for examining the key research questions outlined in chapter 1. By breaking down activities into components, the framework enables the various components to be examined separately thereby making the linkages between activities, pupils and resources more explicit. As a result, the programme framework adopted for this study enables the educational and resource objectives of the case study schools to be considered together.

The Research Methodology and Empirical Work

In order to utilise the conceptual framework developed in the last chapter, a research methodology has to be adopted and a research design developed. The research design includes the identification of the organisations to be studied (sample LEAs and schools) and the techniques to be used for collecting data. This chapter addresses these issues and, because the conduct of empirical work is intimately linked with research method and design, the chapter also includes a description of the conduct of the fieldwork.

5.1 Positivist and Interpretative Methodologies

There are two main research paradigms variously referred to as the positivist-experimental-nomothetic and the interpretative-ethnographic-ideographic (Burrell and Morgan, 1979; Bynner and Stribley, 1979). Positivists primarily seek facts (physical or social) or causes of physical and/or social phenomena. The positivist approach rests on the use of a research design which is specified before data collection commences, the research design focusing on the testing of hypotheses derived from specified models and theories. The predominant methods of data collection are the use of experiments, tests, and/or surveys. The positivist methodology relies primarily on quantitative data. The positivist approach is used most explicitly in experimental research where changes are observed and interpreted in terms of predetermined hypotheses. In the social sciences the approach can be traced back to such social theorist of the nineteenth and early twentieth century as Comte and Durkheim (eg Durkheim,

1938). The approach stresses the development of valid and reliable measures of the variables under examination and the control of extraneous variables. It is also used in non-experimental research where it is difficult (or impossible) to control variables in which case 'factorial' or 'multivariate' designs replace physical controls. In such a situation, data analysis will depend on the correct choice and use of appropriate statistical tests, especially tests of significance, perhaps related to the use of multiple regression, factor analysis or the analysis of variance.

Although positivist or hypothetico-deductive methods can show relationships between variables and have strong potential for generalisation, they have been criticised on the grounds that findings of statistically significant relationships do not, by themselves, establish causality because they do not yield enough evidence about internal organisational processes. In a research study of educational innovation, Daft and Becker (1978) emphasise the limitations of statistical analysis of survey data:

Thus far our major findings have depended upon correlation and regression analysis. These types of analyses are efficient and enable us to identify the correlates of innovation adoption, but they do not yield specific evidence about internal organisational processes. Researchers can make conjectures about internal organisational processes on the basis of correlations and regressions. We have done that ... in an attempt to weave the correlation findings into a coherent explanation about the innovation process. But these explanations remain conjectures unless we verify them with data about what is happening inside the schools (Daft and Becker, 1978, p. 97).

Similarly, the positivist method, especially with respect to social situations, has been criticised for placing more emphasis on the researcher's than on the participant's interpretation of events and situations (Atkinson, 1978; Haralambos and Heald,

1980; Shipman, 1985a; Silverman, 1985). Thus Haralambos and

Heald (1980) have noted that:

By constructing a set of criteria to categorise and measure, ... in scientific language, by operationalising the concepts, ... they (positivists) will merely be imposing their reality on the social world (p.499).

Silverman (1985) similarly notes:

... it must be recognised that the social world does not speak for itself. So, while aiming to stay close to the fact is laudable, in practice it means imposing by fiat a particular theoretical scheme upon reality (Silverman, 1985, p. 13).

A further criticism of the positivist approach relates to its emphasis on quantitative data. Silverman (1985) notes that analysis based on such data had been particularly favoured by such professional as psychologists, economists, clinicians and administrators, especially before 1965. More recently and particularly in education, however, quantitative methods have been criticised. Thus Mehan (1979) observes that 'tabulating' behaviour into discrete categories can obscure the contingent nature of interaction. According to him:

... because (such tabulations) focus almost exclusively on the teacher, they minimise the contributions of students to the organisation of classroom events. The classroom is socially organised. Teachers and students work in concert to create this organisation (Mehan, 1979, p. 10).

Although Mehan was here concerned with the curriculum and classroom activities, his remark is equally true of educational management in which managers and other staff, to use his words, work in concert to create the organisation. For these and similar reasons, the positivist approach has come under increasing attack in the past two decades. Thus Shipman (1981) notes that teaching and research have moved away from the confident use of psychological and sociological evidence as its limitations have been exposed.

The research methodology not only presented as an alternative to positivism but also advocated as being potentially more able to reveal internal processes and the intrinsic meaning of events and situations is the interpretative methodology which rests on foundations laid by Weber. A particularly influential variant of the paradigm is that of phenomenology (eg Silverman, 1970; Greenfield, 1975, 1978 and 1980; Gray, 1982; Gromm, 1987) which emphasises the understanding of events and actions from the participant's own frame of reference. Phenomenologists therefore mainly seek understanding from particular points of reference, aiming primarily not to discover the social 'facts' which the positivists seek, but to collect rich data and thus to establish an insightful portrayal of social situations, recognising that different participants have different perceptions of the same set of events.

An interpretative methodology using case studies is often used for the discovery or generation of 'grounded theory' (Glaser and Strauss, 1967) rather than for testing hypothesis or theory. Studies based on interpretative approaches are usually evaluative rather than prescriptive. In such studies, the unusual, unrepresentative or 'deviant' case is considered as important (if not more important) in revealing social processes than the typical or 'normal' case:

Population samples are chosen to be illustrative rather than statistically representative. The atypical and abnormal result, far from being averaged out into insignificance, is regarded as of equal interest with, or even of greater interest than, the norm. The investigator is concerned with trying to understand why things happen rather than simply with measuring what does happen (Becher and Maclure, 1978, p.142).

The details of an interpretative research design tend to be emergent rather than pre-determined or pre-specified. Also, the

dominant approach to the collection and analysis of data within such a paradigm is qualitative rather than quantitative. Rather than using experiments, tests and structured questionnaires and interviews, the major methods/techniques for collecting data within the interpretative approach are interviewing, observation and the use of documentation.

Studies based on interpretative and case study methods aim to identify unique features of particular situations which may hold the key to the puzzle but which can easily be obliterated by positivist methods of the survey type. In doing this, researchers start with 'open' research designs which become more focused as investigation proceeds, in contrast to survey techniques in which researchers tend to find only what they seek by focusing mainly on what are covered in survey instruments.

Despite the potential usefulness of interpretative approaches in the explanation of internal processes, they have a number of limitations which derive from the different theoretical frameworks underpinning them. For example, the typical data collection methods (eg observation and interview) imply that the researcher has to be selective; but such selectivity is not easily open to the checks which are required and can be applied in positivist methods (Nisbet and Watt, 1978; Shaw, 1978; Wragg, 1978; Silverman, 1985). This means that the interpretative approach is in danger of being personal and subjective. Further, the method relies, at least in part, on recall by key informants, a situation which could lead to inadvertent or deliberate partial recall of information or a mixup of events and outcomes. Indeed, participants may construct (or reconstruct) reality, so that there may be a gap between the rhetoric and the reality. Thus it can be difficult to discern whether particular statements

represent what actually happened, what the informants believed happened, what they would have liked to happen or what they would like others (especially researchers) to believe happened.

A final point that needs to be made regarding the limitations of case studies relates to their results. The results are not easily generalisable. Nisbet and Watt (1978), for example, note that generalisation in case studies can only be achieved through an intuitive judgement that 'this case' is similar to 'that case'. These problems relate not only to the reliability or internal validity of researches, but also to their generalisability or external validity which every research method (positivist or interpretative) needs to address. Before addressing issues of reliability and validity, however, it will be necessary to first identify the method adopted for this research.

5.2 The Research Methodology

The adoption of either a positivist or an interpretative perspective opens up various possibilities for insight but also excludes others; as Mangham (1979, p.3) remarks, 'any way of seeing is simultaneously a way of not seeing'. However, although there is a definite disjuncture between the positivist and interpretative methodologies, the approaches used in one may overlap to some extent those employed within the other. Indeed, the approaches as outlined above represent two extremes between which there is substantial middle ground containing elements of both perspectives in varying degrees. Rather than seeing the methods as mutually exclusive opposites, therefore, they can be usefully combined to support and supplement one another. Thus as Silverman (1985) argues:

The question remains whether any bridging position is possible between these two (positivist and interpretative) apparently incompatible perspectives ... I shall argue that ... the internalist (interpretative) concern with form and universality and the externalist (positivist) commitment to content and variability are complementary rather than contradictory (p. 170) Neither kind of data are intrinsically better than the other; everything depends on the method of analysis (Silverman, 1985, p. 156).

Partly in agreement with this analysis by Silverman and partly to make the best use of the strengths of both methodologies relative to particular problems under investigation, more researches have, in recent years, drawn from and utilised the methods of both paradigms (eg Lancaster, 1988). This is the position adopted in this study. In making that attempt it is recognised that:

... the kind of research which seeks to bridge the gap between the two standpoints comes under attack from both sides. Research in this area is regarded by the objective purists as woolly and unscientific, and by those adopting a subjective stance as too concerned with essentially artificial theoretical concepts far removed from the day-to-day realities of the actors in the situation. To hold the middle ground means accepting that both subjective and objective viewpoints are important in interpreting a social situation (Hewton, 1986, p. 172).

In attempting to draw from both traditions here, it is recognised that there is a danger that neither will be as fully developed as an analysis rooted within one theoretical tradition only.

According to Shipman (1985b), research methods, the data collected and the theories which are verified or generated are inseparable. The choice of an appropriate methodology therefore depends not only upon the nature of the problem under investigation, in this case the management of resources in education, but more importantly on the objectives of the research and relevant research criteria. Based on this consideration, a combination of positive and interpretative approaches is adopted here, although weighted towards the interpretative. For example, no hypotheses are formulated for testing and no 'interventions'

are made, or variables 'manipulated' either experimentally or statistically. For instance, hypotheses contending that allocative choices in schools reflect a rational more than a political perspective, or vice versa, are not formulated. Rather, the various implementations of TVEI in selected LEAs and schools are examined in their natural settings using the case study method. At the same time, analysis is based on both quantitative and qualitative data.

In developing the methodology of the research, the importance of the criteria of reliability and validity are recognised. Most text and handbooks on educational research discuss various kinds of reliability and validity as well as possible ways of addressing them (eg Denzin, 1970; Tuchman, 1972). Essentially, reliability or internal validity relates to the extent to which the data used for analysis are not only representative of the actual state of affairs, but also relevant to the problem under investigation. Similarly, external validity relates to the extent to which the findings of a study are applicable to similar situations; that is, the extent to which findings are generalisable. Of course, of the two criteria, internal validity is the sine qua non because external validity and therefore generalisation is only possible when findings are based on reliable data. Thus, most of the potential threats to internal validity are also relevant to external validity.

Methodologically, internal and external validity in this study are addressed at several levels of the research process. Thus account has been taken of both criteria in the development of the theoretical model, the selection of the research method, the determination of the research design and the collection and analysis of data. The details of these will be given in the

relevant sections; for now, it will only be necessary to outline the general approach to the criteria.

With respect to reliability, in addition to possible confounding effects of history and maturation, other potential threats to internal validity identified in literature on research methodology include the possible lack of instrumentation reliability, reactivity (the effect of repeated data collection), bias in sample selection and sample attrition. The adoption of a case study method means that test-retest and split-half types of reliability are neither relevant nor necessary. Reliability in this study is therefore concerned with issues relating to instrument and data collection techniques as well as with the interpretation of data. For example, it is necessary to take account of the possibility that a particular occurrence can result from different causes or be subject to more than one interpretation. This has been largely addressed, as discussed in the last chapter, by analysing resource management at different decision stages (objectives, processes and outcomes) and, as will be discussed shortly, by interviewing different groups of people (at both LEA and school levels).

The internal validity of the research is further addressed by the time horizon of the research data. In relation to internal validity, Lancaster (1988) notes that:

While cross-sectional studies using, for example, analysis of variance methods can, in principle, help to separate out the confounding effects of various independent variables, longitudinal studies using interpretative methods offer more persuasive possibilities of addressing the problem of simultaneity and of untangling causes and effects by using inter-temporal variations to facilitate causal inference (Lancaster, 1988, p. 115).

The relevant terms here are 'cross-sectional' and 'longitudinal' studies. Although this research is mainly cross-sectional since

data is focused mainly on one academic year, it also includes a longitudinal element because, as will become clearer in due course, data relating to some activities were collected over the TVEI pilot (3-4 years) in the schools. In addition to illuminating the evolution of management concerns over the period, such data also help to explain processes by isolating the causes of some actions, thereby enhancing the validity of findings.

While the case study method is not particularly problematic in terms of internal validity, the same cannot be said of the method with respect to generalisation or external validity. While the limitations of qualitative and case study methods used in this study are recognised, its claim to validity and generalisability rests on two methodological and theoretical foundations. First, as already noted, attempts have been made (conceptually, methodologically and analytically) to increase the reliability of the research which is fundamental to any claim to validity. Secondly, and more importantly, it is also argued that the claim to validity of this research rests largely on the validity of the theoretical model on which it is based. This argument finds support in the logic of case studies as demonstrated by Mitchell (1983) and elaborated by Silverman (1985).

According to Mitchell, the logic of case studies is theoretically rather than statistically defined; thus, the aim is not to select a 'typical' case, but a deviant or compelling case. Based on this argument, Silverman (1985) points out that:

... in a case study, the analyst selects cases only because he believes they exhibit some general theoretical principles. His account's claim to validity depends entirely on demonstrating that the features he portrays in the case are representative not of a population but of this general principle inference from case studies cannot be statistical. We can extrapolate from case studies to like

situations by logical inference based on the demonstrated power of our theoretical model to account for initially negative instances. The claim, therefore, is not to representativeness but to faultless logic (Silverman, 1985, pp. 113/114).

This is the view held here. While recognising the limitations of case studies in general and the approaches used here in particular, it is argued that the validity of the research is substantially addressed. Thus, the rational and political models have been selected largely because they represent management strands which are most likely to be in evidence in organisations in general and schools in particular. In addition, as already noted, it is not hypothesised, for example, that the rational or political perspective is the dominant mode; instead, the focus is on explaining the actions of organisational participants based on the theoretical bases of both the rational and political models of management. In addition to limiting the tendency of the researcher to look for 'only what he wants' it is argued that this approach limits the particularity and enhances the representativeness of findings.

5.3 The Research Design

The research design is influenced by both the theoretical issues and conceptual framework developed in previous chapters and by the methodological issues addressed above. These considerations led to a research design that is constructed around the case study method of investigation.

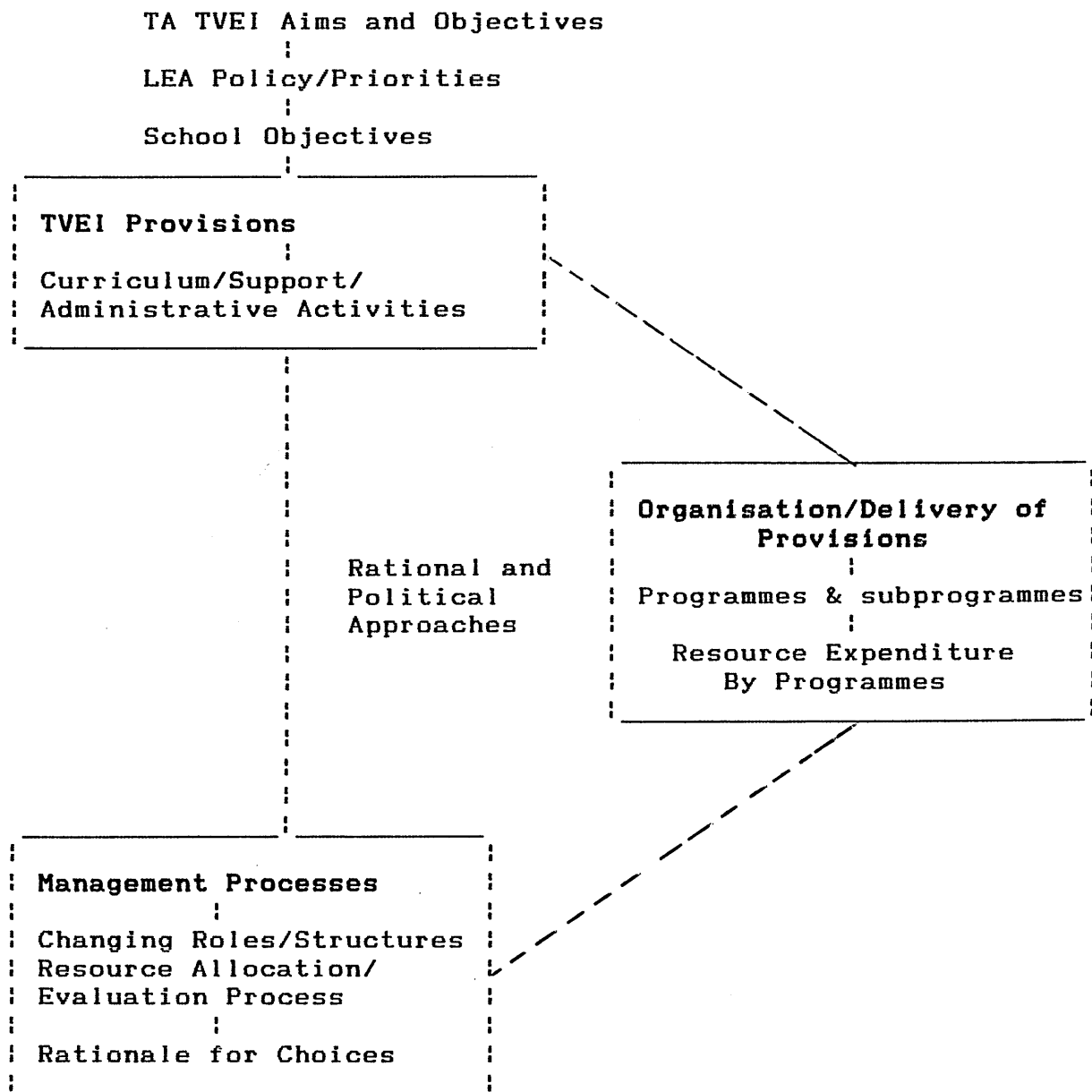
A case study involves the examination of some issues with respect to an individual, group or organisation. In the context of this research the organisations are four schools in two LEAs and the issues are embodied in curricular, cross-curricular, support and administrative activities. Methodologically, the key issues are

examined in three components. The first component is concerned with how the LEAs have defined and interpreted the TVEI in terms of curricular, cross-curricular, support and administrative activities. The second component focuses on the organisation and delivery of TVEI provisions in the schools, while the third component addresses related administrative arrangements and decision processes. The three components form a 'problem triangle' (Figure 3) which can be constructed both rationally and politically. In terms of the analytical framework developed in the previous chapter, the first component of the problem triangle relates mainly to the 'what' component of programmes. Similarly, the second and third components of the problem triangle relate largely to the 'for whom' and the 'how' components of programmes. In particular, the second component of the problem triangle represents the 'nerve centre' of the programme framework developed in chapter 4. Thus, the component examines the allocative choices of the schools in terms of the relationship between activities, pupils and resources.

Although it has been noted that the TVEI guidelines are quite explicit, the rational and political management perspectives discussed in chapter 3 suggest that the LEAs' and schools' interpretation of the Initiative are likely to differ. In the first component of the problem triangle, therefore, TVEI provisions of the schools will be examined in general terms with a view to analysing them to determine the extent to which they reflect the policy implications of the Initiative as contained in the TVEI guidelines. This component indirectly explores the aims and objectives of TVEI in the LEAs and schools because the decision to include particular activities, but not others implies (where not explicitly stated) some objectives.

Figure 3

The Problem Triangle



The second component, the organisation and delivery of the provisions, is concerned with how activities are structured and resources deployed for the purpose of delivery. The research activities relating to this component examine the distribution of resources which, in terms of 'winners' and 'losers', will form the basis on which the allocative choices of the schools will be interpreted in rational and political terms. Methodologically, outcomes in terms of the structuring and resourcing of TVEI provisions in the schools are examined before the management processes that yielded these in order to have the evidence with which to 'confront' the decision makers. Similarly, possible programme groupings are determined through analysis of documentation and then corroborated and clarified through interview with key actors.

In the third and final component of triangle, the management structures and roles emerging from the implementation of TVEI in the schools are examined. Given that schools can decide how to use their resources, the criteria/rationale for allocations is an issue within this component. Similarly, the fact that there are differences in the ways decisions are made in schools in terms of the nature and level of participation in the decision making process makes staff involvement in school processes an issue within this component. Furthermore, possible evolutionary trends in TVEI implementation in the schools in terms of modifications and changes may emerge from the analysis of data. Thus the present decision making structure or pattern of the schools may have evolved from others, the knowledge of which could explain or confirm certain findings. Wherever possible, therefore, the decision making patterns from the inception of TVEI in each

school are considered to reflect the longitudinal aspect of the study.

Data Collection Instruments: The requirements to meet the criteria of both internal and external validity suggest the use of multiple methods for collecting data. The advantages of the use of triangulation are well rehearsed in the research methods literature. Four types of triangulation are identified by Denzin (1970) and have since been elaborated by others. They are:

- a. Theoretical triangulation: the use of different, and possibly competing, theoretical perspectives, such as positivist and interpretative methods, as discussed earlier in this chapter.
- b. Data triangulation: the use of different sources of data within a particular data collection method. For example, the use within case studies of both documentation and interviews.
- c. Methodological triangulation: the use of more than one method of collecting data, for example, the use of both case study and survey methods.
- d. Investigator triangulation: for example the use of more than one researcher within a case study.

Denzin (1970, p. 310) further notes that multiple triangulation exists when researchers 'combine in one investigation multiple observers, theoretical perspectives, sources of data, and methodologies'. Although the advantages of triangulation are obvious, the extent to which it can be applied depends on several factors. These include the nature and context of the problem under investigation, the dominant methodology adopted, and feasibility in terms of the time and other resources at the disposal of the researcher(s).

On the basis of these and similar considerations, the data collection techniques selected have been influenced by the case study method adopted, by the the nature and kinds of responses envisaged from informants, and by feasibility considerations. Thus, the first two kinds of triangulation outlined above, theoretical and data, are incorporated within the study while, on feasibility grounds, investigator triangulation is not. Similarly, methodological triangulation is excluded because although the questionnaire (a survey instrument) could usefully supplement the documentation and interviews used, the nature of the problem under investigation and the nature of the information sought led to its exclusion. As will be discussed further in chapter 11, under 'Reflections on the Research Process', the use of a questionnaire to supplement documentation and interview was considered at the early stages of the research but was abandoned as investigation proceeded. This was mainly because information needed for an analysis of processes in general and rational and political elements in particular is not, to use rather extreme examples, such that requires 'yes/no', 'agree/disagree', 'always/never' or 'satisfactory/unsatisfactory' responses. In addition, the use of questionnaires (as a supplement) on a wider sample than those interviewed, in order to corroborate the interview data, was later thought unnecessary on the grounds that relevant sub-units (possible interest groups) were covered in the interviews.

The research instruments, therefore, are documentation and interviews which, it is argued, are best suited for case study investigations (Nisbet and Watt, 1978, Wragg, 1978; Haralambos and Heald, 1980; Silverman, 1985). Although observation is a useful interpretative and case study method, and although, like

the questionnaire, it was initially considered as an additional technique, it was not eventually utilised, because relevant activities for observation, such as meetings, were either too few to make any impact or not made accessible to the researcher.

The research design is one that is flexible and evolving.

Broadly, it comprises two phases: a review of literature phase and an empirical phase. The first phase, the outcome of which has been discussed in chapter 2, entailed a detailed review of literature and documentation (including government White Papers) on the TVEI and on the management of resources in education generally, and schools in particular. Documents analysed included Training Agency (TA), National Foundation for Educational Research (NFER), and other individual and group TVEI studies and evaluation reports (Appendix II). In addition to the study of literature and documentation, the methodology of this phase included interviews with a few selected individuals from both within TVEI and the education system generally who had experience and expertise relevant to the general issues underlying the study. Those interviewed included teachers on full-time and part-time post graduate courses in education management at the Sheffield City Polytechnic. The documents and interviews were used to obtain information about TVEI policies, guidelines and implementation in LEAs and schools. The outcome of this phase influenced the development of both the conceptual framework and general methodology of the research. The phase was undertaken mainly between September 1988 and March 1989 but was updated throughout the duration of the study.

The second phase, the fieldwork, also had an evolving rather than pre-determined structure. In general, it consisted of two stages: an exploratory stage and a more focused stage. The

exploratory stage was undertaken between May and October 1989. During this period, visits were made to the selected schools for the dual purpose of acquainting the researcher with the case study environments generally and key respondents in particular, and collecting preliminary information which would form the basis for the more focused phase. In the process, relevant documentation was sought from each of the case study sites and key participants were interviewed. Specifically, these participants included the headteachers and TVEI co-ordinators of selected schools as well as relevant heads of department and co-ordinators of curriculum areas who were identified in the process (Appendix III). The process involved discussions of a general nature in the form of unstructured but focused interviews with these people. The exercise was aimed at identifying TVEI provisions and activities particular to the various schools and those responsible for them in readiness for the next stage.

The final and more focused stage was undertaken between October 1989 and December 1990. This stage represented the core of the fieldwork and, as will be elaborated shortly, consisted of a number of parts. In general the activities of this stage consisted of the collection of relevant documentation and the conduct of interviews with key participants. However, unlike the exploratory stage, particular documents and interview data were now sought. Similarly, the sample of people interviewed was expanded to take account of issues raised during both stages (Appendix III). The process involved a series of semi-structured interviews at both LEA and school levels. In addition, documents for analysis included the LEAs' TVEI proposals and other submissions to the TA as well as the schools' TVEI information

booklets, statistical returns, informal (sometimes loose) data sheets, and timetables (Appendix II).

The research design enabled a number of the advantages of case studies to be obtained. Thus it enables the research issues to be investigated in more depth and contextual issues to be related to wider organisational activities than would be the case, for example, in a survey-based design. The research design does, however, have some disadvantages compared with the option of incorporating a survey element into the design, or of using a survey-based design as an alternative. Such limitations, as already noted, relate mainly to the generalisability of findings. However, the research design developed here is claimed to be appropriate to the objectives and main research issues identified in chapter 1, and to enable the theoretical model developed in chapter 3 to be tested. The research design is summarised in Figure 4 below.

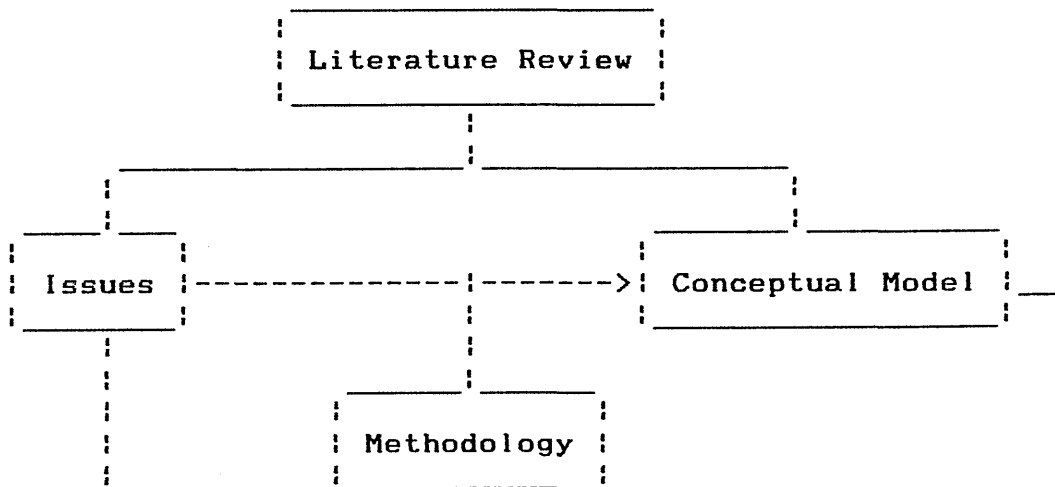
5.4 Choice of Sample

Having determined the research methodology in outline, it was necessary to decide, in respect to the case studies, the sample size and method by which the sample was to be chosen. As already indicated, case study investigations were carried out in two LEAs and four schools. The decision about the size of the sample (the number of LEAs and schools) was not made in isolation from considerations of the criteria on which the sample was chosen; rather, the two decisions were inter-related. Further, the decision on the number of LEAs was influenced by considerations about the number of schools and vice versa. It was felt that case studies in four or more LEAs would not be feasible given that the research was to be conducted by one person with limited

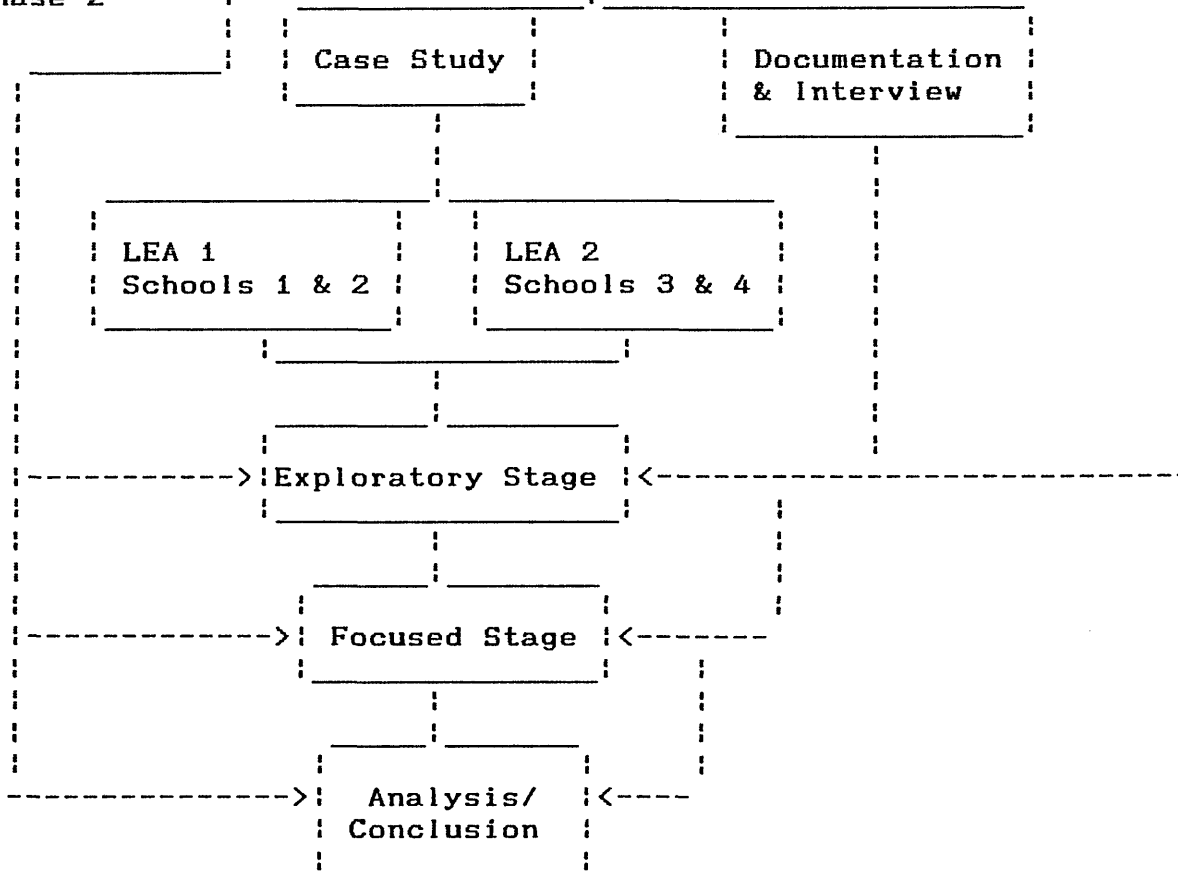
Figure 4

The Research Design

Phase 1



Phase 2



resources. At the same time, considerations of external validity, discussed above, led to an initial preference of more than one LEA. Initially then, the preferred number of case study LEAs was two or three.

However, when these numbers were related to possible number of schools, a choice of two LEAs was made. The argument underlying this choice is as follows. First, for reasons of external validity, it was felt that it would not be appropriate to select only one school from an LEA. This meant that the minimum number of schools from an LEA would two. Given this position, the selection of two LEAs would yield at least four schools; and the selection of three LEAs at least six schools. Feasibility considerations at this point then led to a choice of four schools and, therefore, two LEAs.

Having decided the number of LEAs and schools, the next issue was to determine the criteria on which to base their selection.

Although Mitchell (1983) and Silverman (1985), have argued that case study samples need not be typical or representative of the population, the issue of representation is addressed by applying a number of criteria in the selection of LEAs and schools. In this regard, practical and methodological considerations led to the use of a purposive rather than a random sample. A number of criteria were used in deriving this purposive sample. These are: accessibility, size and phase of entry into TVEI.

Accessibility: Because the research was being carried out as a full-time independent programme rather than a funded study, feasibility problems relating to the mobility of the researcher were anticipated and taken account of. Thus, the case study sites needed to be accessible on a short-term basis from the

researcher's home and department base. This invariably, restricted the choice of LEAs to those nearest to the researcher's base. The effect of this restriction, however, is substantially compensated for by the variations between the LEAs and schools on the other two criteria.

Size: LEAs and schools vary considerably in terms of size, as measured by population and number of educational institutions for LEAs and number of pupils for schools. As the size may affect the variables underlying the particular issues studied, it was considered desirable to stratify LEAs and schools with respect to size. Accordingly, although both LEAs are Metropolitan Boroughs, one is more than twice the size of the other both in area and in population. Thus one has a population of over 500,000 while the other has a population of about 250,000. Furthermore, at the time the study commenced, the larger LEA maintained 37 comprehensive schools and six colleges of further education, while the other had 18 comprehensive schools, a sixth form college and three colleges of further education. With respect to schools, one school in each LEA was more than double the size of the other in the same LEA at the time of investigation. Thus the ratios of the population of the schools were 1300:650 (2:1) in one LEA and 1471:380 (over 3:1) in the other. The 1471 of the larger school in the second LEA, however, includes 181 in the sixth form.

Entry into TVEI: It was also necessary to stratify the LEAs and schools in terms of duration of TVEI experience. This variable was considered important because the review of TVEI literature showed that TVEI funds depreciated as implementation progressed, with first round projects benefiting the most. Apart from the fact that the level of funding can influence decisions and choices, the experience of the Initiative, in terms of the period

of time spent in it, is also considered significant because experience is an important management variable. One of the LEAs, and therefore the schools in it, started the TVEI in September 1986 while the other started in September 1987. Because the Initiative started in September 1983, this means that TVEI is a fourth round project in one LEA and a fifth round project in the other. In addition, all the schools had been involved in curriculum development initiatives other than TVEI, including TVEI-Related In-Service Training (TRIST) for teachers and the Northern Partnership for Records of Achievement (NPRA). Three of the schools are 11-16 schools while the fourth is an 11-18 school.

These three criteria were used to select the two LEAs and four schools (two from each LEA). The LEAs will subsequently, in order to preserve the confidentiality promised the research participants, be anonymised and referred to as City and Town as follows:

Large LEA: City LEA
Small LEA: Town LEA

Similarly, the four schools will be referred to as follows:

Large school in City LEA: Big-City School
Small school in City LEA: Small-City School
Large school in Town LEA: Big-Town School
Small school in Town LEA: Small-Town School

5.5 Research Access

Burgess (1980, 1982 and 1984) emphasises that the means by which the researcher gains entry to an organisation is important in defining the pattern of events, including the researcher's role.

According to Burgess (1982):

... the way in which researchers establish themselves and their projects will influence the pattern of events that occur in the field, the degree of access that they are given, and the relationships that they establish with their

informants. In short, it is important for researchers to define their projects and their roles as this will influence the whole of the research process (Burgess, 1982, p. 16).

Asking whether the leader of a group or an institution should be the first person to be contacted, he points out that group leaders and the institutionally powerful are seen by some researchers as the gatekeepers who can grant access. With respect to this study, access was initiated through an informal network of LEA and school TVEI co-ordinators and subsequently formalised in specific schools through those co-ordinators.

With the assistance of the research supervisors, initial contact was made with the TVEI project co-ordinator of City LEA. After some discussions, the project co-ordinator wrote formally to the research supervisors (and copied the researcher) indicating that the LEA would 'welcome the programme of proposed research', and that 'the research findings will be valuable to the LEA as it plans for the extension of TVEI to all schools and colleges'. Thereafter, the project co-ordinator introduced the researcher to headteachers, deputy headteachers and TVEI co-ordinators of Big-City and Small-City Schools. The project co-ordinator actually volunteered to personally accompany the researcher on his first visits to both schools. The same method was used in respect of Town LEA and the two schools in it. Their response was also similar to that of City LEA although the initial reply of the project co-ordinator was oral rather than written.

Burgess (1982) points out that access needs to be negotiated, otherwise covert research will be done, adding that even when research intentions are declared, the question still remains about whether those researched fully understand what is being done. In this regard, the intentions of this research were fully

explained to all concerned although it was considered both unnecessary and inappropriate to discuss the rational and political aspect of the research with respondents or other people within the case study sites. Once initial introductions had been made and permission to use the schools obtained from relevant headteachers, the principal contacts in the schools became the school TVEI co-ordinators who introduced the researcher to heads of department and other staff in their schools and also helped to arrange subsequent interviews for the researcher. How those interviews were conducted and, indeed, how the research strategy was implemented will now be discussed.

5.6 Empirical Work

This section discusses the operationalisation of the research methodology developed above in relation to Phase 2 of the study. The conduct of the fieldwork is discussed in the chronological order in which it was carried out: first, the exploratory stage; and secondly, the focused stage of the case studies.

The Exploratory Stage: As already indicated, this stage was undertaken between May and October 1989. The exercise consisted of a series of two day visits to each of the case study schools. Visits to Big-City School were made in May while those for Small-City School were undertaken in June. Similarly, visits to schools in Town LEA were undertaken in September (Big-Town School) and October (Small-Town School) after the summer holidays. The exercise was aimed at getting a general impression of the state of affairs in the schools relative to the (TVEI) issues under investigation rather than on looking for specific evidence. The outcome of the first phase of the study, the review of relevant literature, played a major role in the process

as possible TVEI provisions had already been identified in general terms. The activities of this stage were then aimed at identifying the TVEI provisions particular to the schools, their general organisation and the people responsible for them. The activities involved seeking relevant documentation from the case study sites and interviewing key participants, mainly the headteachers, the school TVEI co-ordinators and some heads of departments and co-ordinators of curriculum areas.

It was necessary to start the interviews at this stage with headteachers and school TVEI co-ordinators rather than other members of staff, for two reasons. First, the headteacher is the chief executive of a school and school TVEI co-ordinators were identified within the review of literature as focal figures in the implementation of TVEI. It was therefore reasonable to assume that they were in the best position to know what goes on in their respective schools with respect to the Initiative, and that data relating to the overall picture of TVEI in the schools, which this stage sought to address, will be more authoritatively, quickly and comprehensively obtained through these sources. Secondly, it was felt necessary, methodologically, to attempt to obtain data that was comparable and consistent in terms of source. That would not be achieved by interviewing staff at random as those interviewed may either not be directly involved in the Initiative or may have limited and partial knowledge of its implementation. These considerations are in turn based on the fact that obtaining basic facts about TVEI in the schools in the shortest possible time, rather than a detailed examination of processes in the schools, was the main objective of this stage. The interviews, as already noted, were unstructured; thus questions were not rigidly and systematically addressed to the

participants. However, the questions were focused and generally took the form: what are your TVEI provisions? how are they organised? and who is involved/responsible?

In addition to acquainting the researcher with the environments of the schools, the process provided a reasonable working picture of TVEI in them. Similarly, although the process did not result in the identification of all potential interviewees, it provided some focus for the research in this respect. On the basis of the outcome of this stage, the review of literature and the conceptual framework, draft interview schedules were produced and piloted. The pilot took place between September and October 1989 when the focused stage of this phase started. The draft interview schedules were tested on a sample of teachers in a TVEI school in City LEA other than those included in the case study. Their opinions were sought on the clarity and relevance of the individual questions and on the schedule as a whole. On the basis of the answers provided, and particularly the comments, modifications were made to produce the interview schedule used in the second, more focused stage.

The interview schedules were in three parts (Appendix IVa-c) corresponding with the three broad issues of the 'problem triangle' (earlier identified): the context and provisions of TVEI, the organisation and delivery of the provisions, and management processes. The schedules were semi-structured and contained relatively loose questions in order to allow informants to respond in their own particular ways. Although interview items for the three parts were developed together, items for the last two parts were initially tentative, being modified as necessary on the basis of issues emerging from preceding parts.

The Focused Stage: As already noted, this stage was undertaken between October 1989 and December 1990. The stage consisted of three main parts with each part corresponding with an element of the 'problem triangle' and relating to the relevant part of the interview schedule. The first part related mainly to the first component of the problem triangle, and involved work at both the LEA and school levels while the other two parts were undertaken mainly at the school level. In comparison to the exploratory stage, this stage was more thorough and systematic although some degree of 'openness' was still present with such openness diminishing as the fieldwork progressed. Data collection during this stage focused on those issues which had been identified as crucial to the central events and features embodied in the elements of the 'problem triangle' and the theoretical ('programmes' and rational and political) model.

Since TVEI programmes are influenced by LEA policies, the fieldwork proper started at the project (LEA) level. In addition to requesting relevant documentation, the research activity at the LEA level involved interviews with the project co-ordinators of both LEAs, the TVEI Development Officer in City LEA and the deputy TVEI co-ordinator of Town LEA. These consisted of two (approximately one and half hours each) interviews with each of the project co-ordinators and one (about one hour) interview with the Development Officer and the deputy co-ordinator. Further less formal discussions took place later between the researcher and the project co-ordinators to clarify certain points. These follow-up discussions were carried out both face-to-face and over the telephone.

The main objectives of this aspect of the fieldwork were twofold. First, to examine, from the perspective of the LEA, the context

and provisions of TVEI in the LEAs and their roles in the determination of such provisions. Secondly, to obtain data on which to compare the responses of those to be interviewed in schools. The interview schedule used for this aspect of the fieldwork is included as Appendix IVa.

As earlier indicated, empirical work at the school level consisted of three parts with each of the parts addressing issues in a component of the 'problem triangle'. The objectives were similar to those indicated above for LEAs but this time they addressed the issues from the perspective of the schools. Similarly, research activities in the schools included the collection of relevant documentation and interviews with key participants. With respect to the interviews, an important issue in this aspect of the study concerned the determination of the people to be interviewed and the sequence of the interviews. In deciding on the people to be interviewed, three criteria were considered. These were: responsibility for an important aspect of TVEI implementation, position in the hierarchical management structure of the school, and representation in terms of the major curriculum areas of the schools.

The first criterion was defined in terms of people responsible for either overall TVEI management in the schools or those responsible for specific TVEI curriculum areas as identified during the exploratory stage. This criterion yielded the headteacher and TVEI co-ordinator for all the schools and other heads of department and co-ordinators of curriculum areas which varied between the schools. Some deputy headteachers were also interviewed, some of them either as TVEI co-ordinators or as representatives of major TVEI curriculum areas. These individuals were also found to have satisfied the second

criterion because they represented positions at three levels of the schools' management hierarchies as the position of the school co-ordinator in all the schools was found to vary between the level of head of department and headteacher. The same group of people were further found to have satisfied the third criterion relating to the inclusion of representatives from the major curriculum areas. The major curriculum areas were defined as disciplines or what the schools call 'core areas'. These are science, humanities and creative studies areas. Those interviewed represented these three areas, either as the TVEI co-ordinator or through being responsible for activities which are central to TVEI. A listing of those interviewed is included as Appendix III.

With respect to the sequence of the interviews, the school TVEI co-ordinators were first interviewed by virtue of their central position in the implementation of the Initiative in the schools. They were followed by headteachers in order to complete the overall picture of TVEI in the schools. Finally, heads of relevant departments and co-ordinators of areas were interviewed. The process, however, was not as linear as this tends to suggest because, as earlier indicated, the exercise consisted of three overlapping parts.

In the first part only the school co-ordinators and headteachers were interviewed. This part related to the first element of the 'problem triangle' which concerns the context and activities of TVEI in the schools. The interview schedule used here was the same as the one used at the LEA level (Appendix IVa) except that respondents were asked to address the questions to the LEA TVEI project generally, and their schools in particular. The exercise consisted of one (one hour) interview with each of the

headteachers and one (two hour) interview with the school co-ordinators. The second part dealt with the organisation and delivery of TVEI activities in the schools while the third dealt with general management. Both parts involved school co-ordinators, heads of department and co-ordinators of curriculum areas. Each of these parts consisted of one (one and half hours) interview with school co-ordinators and one (one hour) interview with the heads of department and co-ordinators of areas. Throughout the exercise, the outcome of one stage was used to inform subsequent interviews. As already indicated, further follow-up discussions were held to clarify certain issues. The interview schedule for the second part is included as Appendix IVb and the schedule for the third part as Appendix IVc.

Throughout the fieldwork, attention was paid to ensuring that as much co-operation as possible was obtained from the LEAs and schools, and individuals and groups within them. Thus, in addition to granting anonymity to all the schools and individuals concerned, other strategies were used to encourage the co-operation of those involved. For example, each series of interviews was preceded by a personalised covering letter to everyone who was to be interviewed. These letters were usually sent about one week before the interviews in order to give those concerned enough time to prepare, but not too long a time to forget. The letters were written on departmental (Education Management) letter-headed papers to give them some measure of authority. In addition, follow-up (thank you) letters were sent out periodically while final 'thank you' letters were sent to headteachers and school TVEI co-ordinators. A sample of the

covering letters is included as Appendix V and a sample of the follow-up letters as Appendix VI

In addition to these strategies which were aimed at enhancing co-operation, other strategies were used to enhance the quality of data collected in terms of authenticity and comprehensiveness. Thus, the covering letters preceding interviews, in addition to reminding interviewees of the scheduled meeting, also contained a summary of the issues to be discussed. This was aimed at giving respondents time to think about the issues before the interviews. Although this could have a negative effect where a respondent deliberately decides to misinform, this was not detected; rather, it had the effect of allowing sufficient ground to be covered in a relatively short period as respondents were usually ready beforehand. In fact, in a number of cases respondents wrote down points on pieces of paper in order not to forget them. Again, in addition to the interview questions which were constructed in broad terms, subsidiary follow-up questions were identified and asked as and when necessary, depending on how the interview developed. Time was always left at the end of the interview when respondents were asked whether there was any other point they wished to add or felt had been missed. Further still, data was collected through both taking down notes as respondents talked, and by tape-recording the responses in order to have a source of data on which to fall back when necessary. Finally, in order to check the accuracy of researcher's description and interpretation of the situations, each of the major parts was summarised as provisional drafts and sent to the informants for their comments. Because of the interest shown by some respondents in what goes on in other schools (discussed below), the drafts sent to schools included data on the four case study schools, although the

schools were not identified. This decision to include data from all the schools, rather than data for particular schools, was based on the assumption that those concerned will be more motivated and interested to go through the documents in the first place, if only to compare data on their schools with those of the other schools.

It is pertinent to point out that while it may or may not be likely that the researcher will have a neutral effect on the organisation being investigated, he needs to be aware of the effect of his presence. The consequences of Heisenberg's uncertainty principle - that one cannot measure something without changing it - is as valid in social research as in atomic physics. This is particularly the case when the study concerns the implementation of an initiative and where the researcher is seen as an 'external expert' who may have something to contribute to the successful implementation of the initiative in the organisation. In this regard, this researcher was careful during the fieldwork to maintain a distance and not to be drawn into an 'external expert' role. As might be expected, a number of participants asked the researcher for comments on developments in their schools relative to others. Such requests were responded to honestly and in some detail, though unsolicited comments were not made. However, the comments were restricted to issues already treated in the particular schools. At any point in time, the general impression given by this researcher in such situations was that the school in question was ahead of the others in the researcher's data collection schedule. This meant that the researcher could not comment on issues beyond those aspects already discussed in the particular school since the relevant information was not available to him.

The Interpretation of the TVEI Policy in the LEAs and Schools

This and the next three chapters are concerned with the presentation and analysis of the outcomes of the empirical work in the two LEAs and four schools identified in the previous chapter. It has been noted that the Training Agency, LEAs and schools are the major partners in the delivery of TVEI and, as a result, choices and practices in schools will necessarily be influenced by LEA policies. It was mainly for this reason that the fieldwork started at the LEA level. For the same reason, the analysis will start at the LEA level in order to form a basis on which practices in the case study schools will be analysed.. This chapter therefore focuses on the overall interpretation of the TVEI in the LEAs and schools and the roles of the LEAs in the process.

Apart from discussing the roles of the LEAs in the translation of the TVEI policy, this chapter serves another function relative to the overall development of the thesis. Thus, although the emphasis of the research is mainly on practices in schools, its rational and political theoretical basis suggests that both intrinsic and extrinsic influences on schools' choices need to be considered. Findings and conclusions emerging from this chapter will therefore be picked up later, in chapter 10, to form part of the basis on which decisions and processes in the schools will be interpreted using the rational and political management perspectives.

In interpreting the TVEI policy and translating it into action, the LEAs needed to make a number of strategic choices relating, in broad terms, to curriculum and administrative activities and

arrangements. The chapter therefore focuses on the selection of participating institutions and students in the TVEI projects of the LEAs, the framing of their TVEI aims and objectives and determination of curricular activities, the TVEI management structures in the LEAs, and their approaches to allocation of resources. However, because the management structure of an organisation is related to, and sometimes influences, decision methods and outcomes, the discussion will start with the TVEI management structures of the LEAs.

6.1 The TVEI Management Structures of the LEAs

As indicated in chapter 2, most LEAs created some new posts at both the LEA and institutional levels following the introduction of TVEI. The two case study LEAs were no exceptions. In addition to new positions, some existing functionaries also acquired new responsibilities. Furthermore, new groups were also set up and some existing ones modified. The part of the research devoted to administration sought to determine the TVEI management structures of the LEAs through the identification of key actors and groups, their roles, and the relationships between them.

Two outstanding positions which resulted from the introduction of TVEI and which were evident in both LEAs and all the schools were those of the project (LEA) and school co-ordinators. In City LEA, both the project and school co-ordinators were appointed in January 1986. The project co-ordinator was appointed from outside the LEA and had served in a similar capacity in another LEA; however, all the school co-ordinators were appointed from within the various schools. In Town LEA, the project and school co-ordinators were appointed in April 1987, the project co-ordinator from within the LEA where he was an advisory

teacher, and the school co-ordinators from within the various schools.

Broadly, the project co-ordinators were responsible for the overall development, co-ordination, administration and day-to-day management of TVEI projects in their LEAs. School co-ordinators had similar responsibilities with respect to their schools. In the performance of their functions, project co-ordinators liaised between the LEA and the TA on the one hand, and schools on the other. Similarly, school co-ordinators liaised between teachers and curriculum areas within their schools, and between the school and the TVEI project (LEA) consortium. In this latter role, they acted as gatekeepers for the schools' TVEI programmes. In addition to their co-ordination functions, all the co-ordinators also taught, except in Big-City School where managing the school's TVEI programmes was the co-ordinator's full-time job from the inception of the Initiative in the school to the time of the investigation. The project and school co-ordinators in each LEA constituted a project working (planning and implementation) group.

In addition to the project co-ordinators, each of the LEAs had a central TVEI team. In City LEA, the central team consisted of the TVEI Development Officer (appointed in January 1987), the Careers Officer (appointed in September 1987) and the the Project Secretary (appointed in April 1986). The development officer was responsible for liaising with examination boards and acted as technical adviser on curriculum development, assessment and evaluation. The careers officer was responsible for ensuring a close link between the project, the LEA careers service, and industries. In Town LEA, apart from the project co-ordinator, the central team comprised the Assistant Project Co-ordinator

(appointed in April 1989), the Advisory Teacher for Technology (appointed in April 1989), and the Project Secretary who was appointed on a part-time basis in April 1987 but was converted to full-time in April 1988. The assistant project co-ordinator was responsible for TVEI Extension.

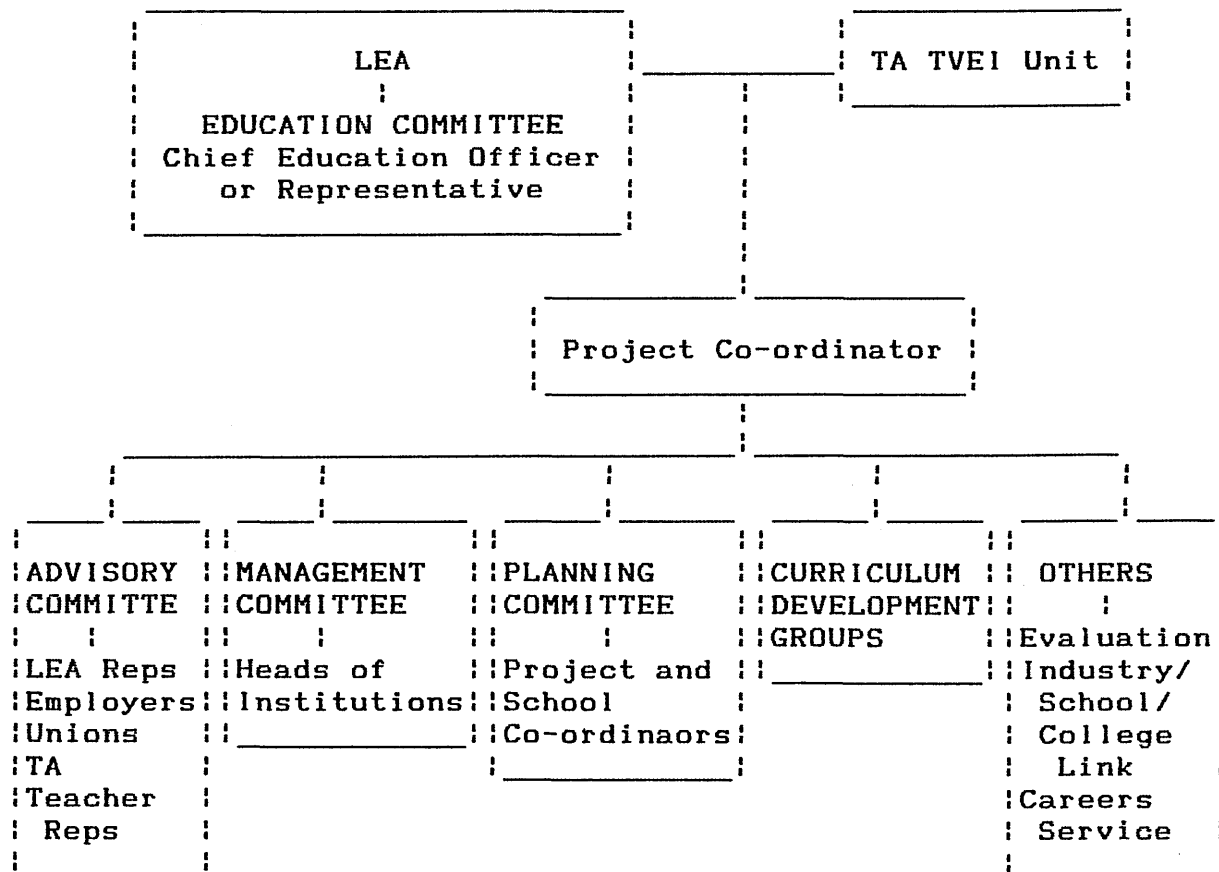
The administration of TVEI in the LEAs, however, was not limited to the co-ordinators and the central TVEI units. A network of committees and working groups were set up in each LEA. These groups are summarised as in Figures 5 and 6 below.

An examination of the composition and responsibilities of the groups shows a similarity between the two LEAs, the major difference being in their names. Thus, the Management Committee in City LEA corresponds to the Curriculum Committee in Town LEA since they were made up of heads of participating institutions and LEA officers with responsibility for TVEI curriculum policies. Similarly, the Education and Advisory Committees in City LEA correspond with the Management Committee in Town LEA. Here, the difference between the two LEAs was that City LEA had separated the Education Committee which formulated and ratified policies from the Advisory Committee which advised the Education Committee, while Town LEA has merged the two.

As will be discussed in chapter 9, the curriculum development groups were made up of representatives of various curriculum areas from participating institutions. In terms of the execution of TVEI, the project co-ordinators, the committees of co-ordinators and the committees of heads of institutions were found to be most significant because other groups operated on temporary or ad hoc basis. For example, as might be expected, the curriculum development groups were most active at the early

Figure 5

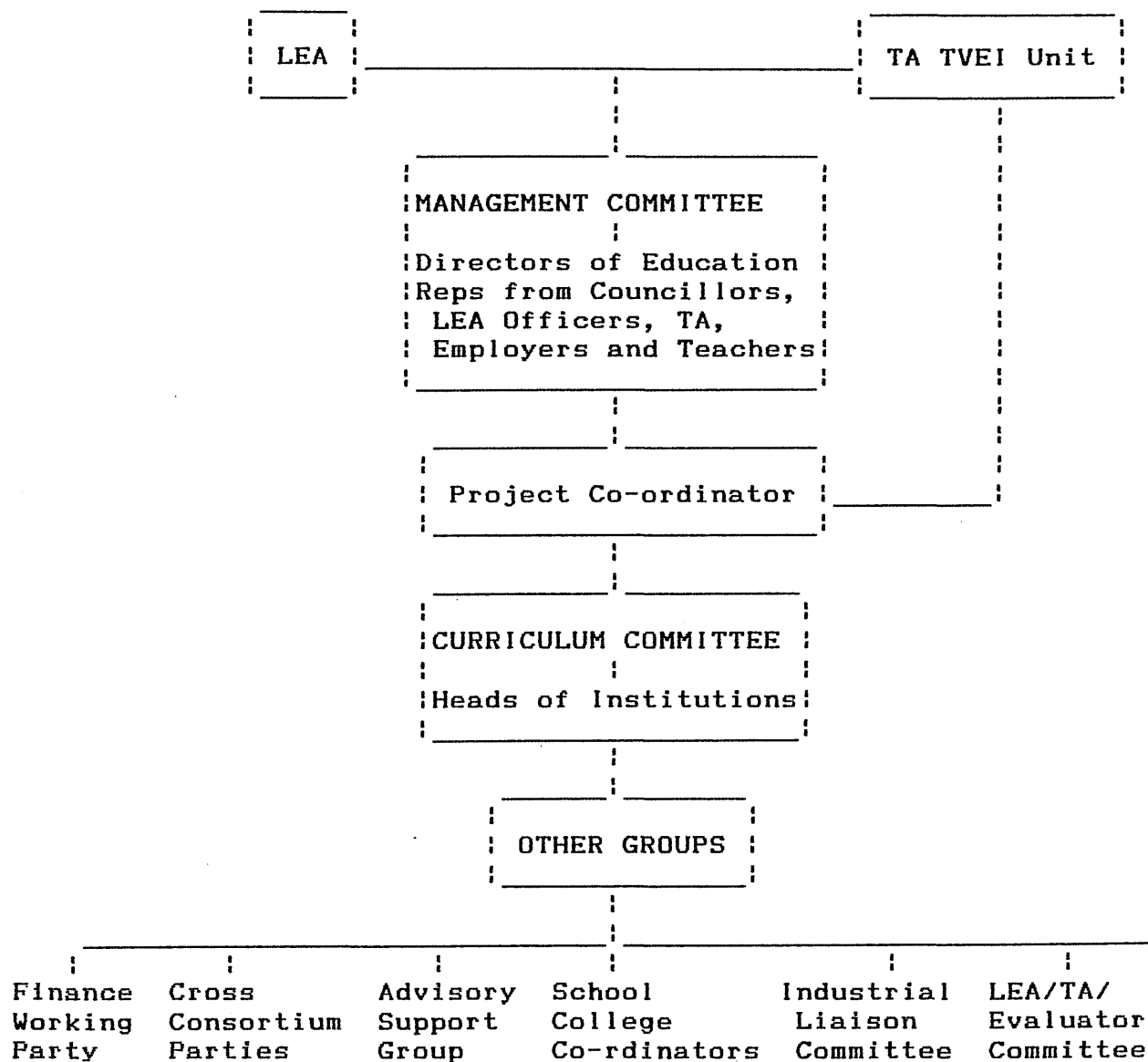
The TVEI Management Structure - City LEA



Source: Adapted from interview and the LEA's TVEI revised Proposal (Nov 1986, p. 43) and Annual Report (1986, Annex 1, p. 2).

Figure 6

The TVEI Management Structure - Town LEA



Source: Adapted from interview and the LEA's revised Proposal (Nov 1987, pp. 20-21).

stages of the Initiative in both LEAs. Similarly, advisory groups met on an ad hoc basis, as and when necessary. An examination of Figures 5 and 6 indicates that the TVEI management structures of the LEAs largely reflect the general pattern exhibited in most TVEI pilot projects, discussed in chapter 2.

6.2 Participating Students and Institutions

Students: The evidence from both LEAs, as evidenced by the responses of the project co-ordinators, shows that the delay in joining the Initiative stemmed from the fact that it was initially seen as divisive and elitist by people in the LEAs, particularly local politicians. According to the co-ordinators, this was because the pilot phase of the Initiative was aimed at a select group of students (14-18 year olds) and institutions. It has also been noted in chapter 2 that, within the 14-18 age range, the national criteria for the pilot indicated that TVEI funding to projects would be based on a TVEI cohort of between 200 and 250 students per year. This meant that students in the 14-18 age range represented a 'national' TVEI cohort while the 200-250 students within this group represented a 'practical' TVEI cohort within this 'larger cohort'. Strictly applied, this meant that all eligible (4th and 5th year) pupils in participating schools would not be involved in the Initiative even if they wanted.

When they finally decided to join, both LEAs designed their TVEI projects to include all eligible (14-18 year old) students in participating institutions. However, the TVEI (practical) cohort still played a role in the management of the Initiative, particularly in the allocation of resources.

Institutions: At the inception of TVEI in September 1986, participating institutions in City LEA comprised three secondary schools and a further education (FE) college. However, from September 1988, a second college was added. For Town LEA, eight institutions - six schools and two colleges - were proposed in their first TVEI proposal (December 1986) to the TA. At inception in September 1987, all three colleges in the LEA were included. A year later, in September 1988, the only sixth form college in the LEA was also added. At the time of investigation, therefore, there were ten institutions participating in the TVEI of the LEA: six secondary schools, a sixth form college and three FE colleges.

When interviewed, the two project co-ordinators as well as all the headteachers reported that decisions on which institutions and students should participate in TVEI were taken at the LEA level, although headteachers added that they were in contact with their respective LEAs, mainly informally. However, when pressed to elaborate, they were not specific on the nature of their informal contacts. For example, one said: 'I contacted people over there (LEA) to say that I was interested'. In any case, the project co-ordinators agreed that decisions at this point were influenced mainly at the LEA level, especially by local politicians, although the co-ordinator of City LEA pointed out that the Chief Education Officer (CEO) generally made a significant contribution to the interpretation of TVEI in the LEA. On his part, the co-ordinator for Town LEA seemed to place the entire decision on politicians:

Institutions were not asked to volunteer. Early decisions were mainly political ... I am not sure how schools were selected as I was not in place at the time ... (but) I would imagine that the powerful politicians had their way (Town LEA Co-ordinator).

Although the LEAs adopted largely similar decision methods at this point, the outcomes of the decisions were less similar. Thus, although both LEAs decided to make the TVEI available to all eligible (14-18) students, the number and composition of participating institutions varied significantly between them. In this context, three or 8% of the 37 secondary schools in City LEA were involved in the pilot phase of the Initiative, while six or 33% of the 18 secondary schools in Town LEA were involved. Similarly, whereas two or 33% of the six FE colleges in City LEA were involved, the only (100%) sixth form college and the three (100%) FE colleges in Town LEA were involved. In terms of the number and type institutions, therefore, it can be concluded that the two LEAs made different choices in relation to participating institutions.

6.3 Framing of TVEI Aims and Objectives, and Determination of Curricular Activities

The TVEI aims and objectives as outlined in documentation (City LEA Revised Proposal, Nov 1986, p. 15; Town LEA Revised Proposal, Nov 1987, p. 15) of the two LEAs were similar (see Appendix VII). Both provided for an 'entitlement core' curriculum which, according to documentation and interview responses from the LEA, represent skills which are considered necessary for all pupils and therefore to which they are 'entitled'. Apart from the entitlement core, other TVEI aims and objectives of the schools were also similar: they both talked of catering for the full ability range, promoting equal opportunities, providing suitable careers guidance and work experience, encouraging student-centred and experiential learning, and developing new approaches to teaching and assessment.

As acknowledged by the LEAs, the aims of the entitlement core were adopted from the 15 aims set out in Supporting TVEI (FEU/SCDC, 1985). This accounts for the similarity between the LEAs in this respect. Similarly, an examination of the other aspects of the aims, outlined above, shows that they reflect the policy implications of TVEI as contained in its national Aims and Criteria (Appendix I).

However, while the two LEAs adopted an identical approach (reference to the same sources: TVEI guidelines and FEU/SCDC, 1985) in the framing of their TVEI aims and objectives, they exhibited an important difference in the determination of TVEI curricular activities. Thus, City LEA adopted a 'joint' (consortium) approach in which the central (LEA) TVEI unit and participating institutions combined to develop a common curriculum model. By contrast, Town LEA adopted a more autonomous approach in which institutions were, according to the project co-ordinator, asked what they would like to offer, and these proposals were collated to produce a 'summative' proposal. Hence, City LEA adopted a more centralised approach to the determination of curricular activities than did Town LEA. The consortium approach adopted in City LEA led to the adoption of a common curriculum and organisational model for all TVEI pilot schools in the LEA. As will become clearer in subsequent chapters, this influenced the allocative choices of the schools in the LEA more than those in the other.

As with the development of TVEI aims, the determination of curricular activities was, in both LEAs, influenced largely by the explicitness of the TVEI guidelines. Thus, the clear and explicit guidelines for TVEI as provided by the TA were cited by all the project and school co-ordinators as having a significant

influence on the definition of the Initiative in both LEAs and the schools in them. However, that influence was based not only on the clarity of the guidelines, but also on the fact that they were largely congruent with the LEAs' and the schools' own objectives. For example, while those at the LEA level pointed to such provisions as records of achievement and residential and work experiences as not only explicit in the guidelines but also educationally worthwhile, those in schools indicated that both TA and LEA guidelines were consistent with their own objectives. In this connection, all the headteachers indicated that the TVEI had enabled them to do what they had always wanted to do. Similar remarks were made by the school co-ordinators: 'The TA and LEA guidelines are compatible with school objectives' (Big-City Co-ordinator); 'The philosophy of TVEI is good for both pupils and teacher' (Small-City Co-ordinator); 'The TA and LEA guidelines were largely in harmony with our objectives' (Big-Town Co-ordinator), and 'The LEA does not impose anything on us ... but we were quite happy with what was planned' (Small-Town Co-ordinator).

The outcomes of the processes, in terms of the TVEI curricular activities in schools in the two LEAs, as will be discussed in the next chapter, were quite similar. This similarity in outcomes despite differences in approach can therefore be attributed to the clarity of the TVEI guidelines which the LEAs and schools agreed were congruent with their own objectives.

6.4 Approaches to the Allocation of TVEI Resources

As indicated in chapter 5, the TVEI started in City LEA in September 1986 as a 4th round project, and in Town LEA in September 1987 as a 5th round project. City LEA was allocated

£2m for the TVEI pilot to cover a period of four years (1986/87-89/90), while Town LEA was allocated £1m to cover three years (1987/88-89/90). It was noted above that the TVEI (practical) cohort was significant in the allocation of TVEI funds in the LEAs. The significance of the TVEI cohort in this context, stemmed from the way in which it was used by the LEAs, rather than its use per se.

A 'practical' TVEI cohort of 250 was determined in City LEA and was distributed among the three participating schools in the ratio of 105:95:50. Of these, Big-City School had 105 while Small-City School had 50. This distribution took account of school size. By contrast, irrespective of school size, a TVEI cohort of 240 was determined in Town LEA and was distributed equally between the six participating schools, giving 40 for each school. These distributions formed the basis of TVEI allocations at the LEA level in both LEAs, and this explains the variations (and similarities) in the figures for the allocation of equipment in schools (Appendix XIII).

Appendix XIII shows that the allocation of equipment funds to the schools over the TVEI pilot was as follows:

Big-City School

1986/87	1987/88	1988/89	1989/90
£58,786	£28,224	£1,970	£1,000

Small-City School

1986/87	1987/88	1988/89	1989/90
£23,988	£12,623.69	£2,000	£1,000

Big-Town School

1987/88	1988/89	1989/90
£26,940.80	£9,166.10	-

Small-Town School

1987/88	1988/89	1989/90
Unavailable	£9,166	-

In general, the figures for City schools are higher than the corresponding figures for Town school largely because of the smaller number of participating institutions in City LEA. A comparison between LEAs, using the figures for the second year of TVEI in each of the schools (1987/88 for City schools and 1988/89 for Town schools), in which data was available in all the schools as an example, shows that the allocation to Big-City School was more than twice that of Small-City School, while the allocation for the two Town schools was the same. When set against the fact that the two big case study schools are more than twice the size (in terms of pupil numbers) of the small ones in each LEA, the variation in the allocation approaches of both LEAs becomes apparent.

Dividing the figures for 1987/88 for City schools and 1988/89 for Town schools by the combined 4th and 5th year populations of the schools, the equipment costs per pupil were as follows:

Big-City	£52.6
Small-City	£50.9
Big-Town	£16.4
Small-Town	£55.6

These figures show that equipment funds were more equitably allocated in City than Town LEA and that, by making an equal allocation to all schools irrespective of size, Town LEA favoured the smaller schools.

While pupil number is not the sole measure of needs, a distinction needs to be made between equality (allocation of equal resources) and equity (allocation of due share of

resources). Thus, the situation in Town LEA which reflects the 'equality' approach, was challenged by organisational members. As the co-ordinator of one of the schools in the LEA (not included in the study) complained in a submission to the LEA in on 8 February 1988:

It is appropriate that the resources made available by the TA through TVEI should be distributed according to needs and not on a pro-rata basis ... The idea then, of an identical lump sum being given to each school, irrespective of size, for residential experience clearly appears to be irreconcilable with these aims (A TVEI Co-ordinator in Town LEA).

While this co-ordinator was mainly concerned with residential experience, the situation, as can be seen from above, was the same with equipment. The only exception was in the allocation of consumables (see Appendix XIV) and, according to the project co-ordinator, the allocation of equipment in their first year of TVEI. Unfortunately, data on equipment allocation for 1987/88 was not available in the LEA, or in Small-Town School (Appendix XIIIId) for this claim to be confirmed.

6.5 Conclusion

An overview of the interpretation of TVEI in the two case study LEAs has been presented in this chapter. In this context, the evidence from the LEAs indicates that both LEAs utilised the opportunities available to them under the TVEI guidelines to make their own choices. Thus, although their interpretations of the Initiative were similar in many ways, they also exhibited important differences in both decision making approaches and decision outcomes.

More specifically, the similarities between the LEAs were reflected in their TVEI project management structures which comprised identical positions, and committees with similar

compositions. Similarly, they not only adopted an identical approach in the framing of their TVEI aims and objectives, and similar approaches in the selection of students to participate in the Initiative, but also produced the same outcomes relative to these issues. However, whereas they adopted similar approaches in the selection of participating institutions, the outcomes of the processes were different in terms of number of participating institutions.

The approaches adopted by the LEAs showed important differences in two areas. The first was in the determination of TVEI curricular activities in which City LEA adopted a consortium (LEA) approach, while Town LEA delegated the responsibility to individual institutions. The second was in the use of the TVEI 'practical cohort' as a criterion for resource allocation in which City LEA linked the distribution to school size, while Town LEA allocated the same number to all participating schools irrespective of size. In relation to the consequences of these two decisions, it is significant that the common curriculum and organisational model adopted in City LEA influenced the allocative choices of schools in the LEA, while the 'equality' approach adopted in Town LEA for allocating resources was challenged by organisational members.

An examination of the various choices of the LEAs shows that most of them were reflections of items included in the TVEI guidelines, indicating that the LEAs' choices were largely consistent with the TVEI policy requirements. Thus, the appointment of project and school co-ordinators, as well as the provision of equal opportunities, careers guidance, work experience and new forms of assessment are all explicitly contained in the guidelines.

The significant point, however, is that those interviewed at both LEA and school levels indicated that their interpretations of TVEI were considerably influenced by the clear and explicit guidelines for TVEI as provided by the TA. Furthermore, the evidence also indicates that that influence stemmed primarily from the fact that the guidelines were largely congruent with the LEAs' and the schools' own objectives. This explains why the LEAs arrived at similar choices on many issues, in particular, the similarity in the choice of curricular activities in schools in the two LEAs despite the different approaches adopted by the LEAs.

The conclusion from this is that the preponderance of similarities between the LEAs, together with the fact that most of their choices were reflections of items in the TVEI guidelines not only indicate that the LEAs' choices are consistent with the TVEI policy requirements, but also suggest a high level of consensus among participants at different levels of the TVEI implementation hierarchy. The question, then, is whether this level of consensus was extended to the bottom tier of the TA-LEA-school TVEI implementation staircase - the schools. This and related issues are the subject of the next four chapters.

The TVEI Programmes of the Schools

The next four chapters are concerned with the presentation and analysis of the outcomes of the empirical work in the four schools identified in chapter 5. In the previous chapter, the general approaches adopted by the LEAs in the interpretation of the policy implications of the TVEI was presented. It was noted there that TVEI provisions in the schools exhibited strategic similarities and differences. Similarly, it was noted that the 'consortium' and 'institutional' approaches adopted by the LEAs relative to the interpretation of the Initiative had different effects on the allocative choices of the schools in the two LEAs. However, no data was presented there to support these claims. In this and the next three chapters, therefore, the TVEI curriculum provisions and administrative arrangements in the schools will be presented and discussed. Also, the resource implications of the allocative choices of the schools will be examined and interpreted in rational and political terms.

As indicated in chapter 4, the analytical framework of this research consists of four main parts:

- a. Situation in the schools: A description which puts practices in the schools into the research framework (programme structure) and identifies strategic similarities and differences.
- b. Outcomes: An empirical analysis of the resource implications of the choices made in the schools as reflected by (a) above.
- c. Processes: An empirical analysis of management structures and decision processes in the schools, and how they have affected or have been affected by (a) and (b) above.
- d. Interpretation: An empirical analysis which interprets the allocative choices of the schools in terms of the rational and political models of organisational decision making.

Each of these parts will be presented as a chapter. Thus, this chapter will describe and draw out key similarities and differences in the organisation and delivery of the TVEI curriculum of the schools, using the 'programme' framework established earlier. Chapter 8 will examine the resource implications of the various outcomes (programme structures) in the schools; while chapter 9 will be concerned with management processes, and chapter 10 with the interpretation of the allocative choices evidenced in the schools. Curricular and cross-curricular programmes will be treated together in this and the next chapters, while support and administrative programmes will be treated together in chapter 9.

7.1 The TVEI Curricular and Cross-Curricular Programmes

7.1.1 The Curriculum: The 'What' Component of the Programmes

At the time of the investigation in the 1989/90 academic year, the designated TVEI curricular and cross-curricular programmes at the schools for the 4th and 5th years (as titled by them) were as in Tables 1a-d. The programmes in Tables 1a-d are arranged according to subject and non subject-based activities.

While most of these titles (especially the subjects) are familiar, others (eg some non-subjects) may not be. It might therefore be useful to briefly explain some of them. Work experience is designed to provide pupils with 'hands-on', mainly out-of-school, experience in areas of their choice, while residential experience is an out-door pursuit aimed at promoting initiative, leadership and team work qualities among pupils. As the name implies, records of achievement are documents which express pupils' achievements in various areas, particularly those which, according to the TVEI Criteria (para 4), 'are not easily

Table 1a

Curricular and Cross-Curricular Programmes:
Big-City School - 1989/90

4th year

5th year

Subjects

Business Studies

Guidance

Leisure

Integrated Design

- Art

- Home Economics

- Textiles

- Craft, Design and Technology

Integrated Humanities

- Economics

- Geography

- History

- Religious Studies

Integrated Science

- Biology

- Chemistry

- Physics

-

Business Studies

Guidance

Leisure

Integrated Design

- Art

- Home Economics

- Textiles

- Craft, Design and Technology

Integrated Humanities

- Economics

- Geography

- History

- Religious Studies

Integrated Science

- Biology

- Chemistry

- Physics

Information Technology (IT)

Non-Subjects

Information Technology (IT)

Records of Achievement (RoA)

Residential Experience

Work Experience

-

Records of Achievement (RoA)

Residential Experience

Work Experience

Table 1b

Curricular and Cross-Curricular Programmes:
Small-City School - 1989/90

4th year

5th year

Subjects

Business Studies

Guidance

Leisure

Integrated Design

- Art

- Home Economics

- Textiles

- Craft, Design and Technology

Integrated Humanities

- Economics

- Geography

- History

- Religious Studies

Integrated Science

- Biology

- Chemistry

- Physics

Information Technology (IT)

Non-Subjects

Records of Achievement (RoA)

Residential Experience

Work Experience

Business Studies

Guidance

Leisure

Integrated Design

- Art

- Home Economics

- Textiles

- Craft, Design and Technology

Integrated Humanities

- Economics

- Geography

- History

- Religious Studies

Integrated Science

- Biology

- Chemistry

- Physics

Information Technology (IT)

Records of Achievement (RoA)

Residential Experience

Work Experience

Table 1c

**Curricular and Cross-Curricular Programmes:
Big-Town School - 1989/90**

4th year

5th year

Subjects

Business and Info Studies*
Office Communication*
Design Technology
Food Studies
Media Studies
Personal and Social Educ (PSE)
- Social Education
- Guidance
- Religious Education

Business and Info Studies*
Office Communication*
Design Technology
Food Studies
Media Studies
Personal and Social Educ (PSE)
- Social Education
- Guidance
- Religious Education

Non-Subjects

Information Technology (IT)
Records of Achievement (RoA)
Residential Experience
Work Experience

Information Technology (IT)
Records of Achievement (RoA)
Residential Experience
Work Experience

* Business and Information studies, and Office Communication in Big-Town school will, from now, be referred to as Business Studies I and II respectively.

Table 1d

**Curricular and Cross-Curricular Programmes:
Small-Town School - 1989/90**

4th year

5th year

Subjects

Design Technology
Media Studies
Integrated Learning Programme (ILP)
- Business Studies
- Community Studies
- Guidance
- Information Technology (IT)
(IT)
Science
- Biology
- Chemistry
- Physics

Design Technology
Media Studies
Integrated Learning Programme
- Business Studies
- Community Studies
- Guidance
- Information Technology

Science
- Biology
- Chemistry
- Physics

Non-Subjects

Records of Achievement (RoA)
Residential Experience
Work Experience

Records of Achievement (RoA)
Residential Experience
Work Experience

deducible from the qualification'. The document is compiled through 'profiling' activities in which both teachers and pupils systematically record pupil achievement in various subjects and other curriculum areas.

In terms of specific subject and non-subject activities, the TVEI curricular activities of the schools can be summarised as in Table 2 below.

Table 2
Subject and Non-Subject Curricular Activities
of the Schools - 1989/90

	Big-City	Small-City	Big-Town	Small-Town
Subjects	Bus Studies	Bus Studies	Bus St. I	ILP
	Design	Design	Bus St. II	Design Tech
	Guidance	Guidance	Design Tech	Media Studies
	Humanities	Humanities	Food Studies	Science
	Leisure	Leisure	Media Studies	
	Science	Science	PSE/Guidance	
		IT		
	(6)	(7)	(6)	(4)
Cross-Curricular	Residential Work Exp	Residential Work Exp	Residential Work Exp	Residential Work Exp
	RoA	RoA	RoA	RoA
	IT		IT	
	(4)	(3)	(4)	(3)

A number of key similarities and differences are reflected in Tables 1 (a-d) and 2. For example, it can be seen that the programmes of the two City schools were largely identical apart from the fact the Big-City school transferred IT from a subject to a non subject-based activity in September 1989 (as reflected by the 4th and 5th year programmes (Tables 1a and b)). This situation is explained by the common curriculum model adopted in City LEA. As can be seen from a comparison of Tables 1c and d, this differs from the situation in Town LEA where a more autonomous approach was adopted in the selection and organisation of school TVEI curricular activities. The common curriculum

model adopted in City LEA, as will be seen as the discussion progresses, resulted in substantial similarities between the programmes of the schools in the LEA in several ways.

At the same time, it will be noticed that Business Studies, Design Technology, Information Technology, as well as records of achievement and work and residential experiences were provided in all the schools. As pointed in the previous chapter, this similarity in outcomes, despite the different approaches adopted by the LEAs for determining their TVEI curricular activities, is attributable to the clarity of the TVEI guidelines which the LEAs and schools said were congruent with their own objectives.

Tables 1 (a-d) and 2 also indicate similarities and differences in terms of curricular and cross-curricular programmes as subject and non-subject based activities. Using the definition of curricular programmes as disciplinary activities, and cross-curricular programmes as cross/non disciplinary activities, an examination of the Tables shows that some cross-curricular programmes were provided as subjects and others as non-subjects in all the schools. Thus, whereas Guidance was provided either as a subject in its own right (City schools) or as part of a course (Town schools), IT was provided as a subject in Small-City School, as part of a course in Small-Town School, and as a non-subject, cross-curricular activity in the two Big Schools. However, the Tables also show that residential and work experiences (both cross-curricular activities) were provided as non-subjects in all the schools (a major similarity).

The decision as to whether to provide curricular and cross-curricular programmes as subjects or non-subjects is of significance for resource management. Whereas delivery through

Table 3

Disciplinary Orientation of TVEI Curricular Programmes

Schools

Discipline	Programmes			
	Big-City	Small-City	Big-Town	Small-Town
Creative Studies/ Technology	Bus Studies Design	Bus Studies Design IT	Bus Studies Design Tech Food Studies Media Studies	ILP - Bus St - IT Design Tech Media St
Humanities	Humanities	Humanities	-	-
Science	Science	Science	-	Science
Others/ Cross- Curricular	Guidance Leisure IT Residential RoA Work Exp	Guidance Leisure Residential RoA Work Exp	PSE/Guidance IT Residential RoA Work Exp	ILP - Community Studies - Guidance Residential RoA Work Exp

subjects makes the linkage between activities and resources more explicit, and costs easier to determine, non-subject provisions are less susceptible to assessment.

Similarities and differences were further reflected in the Tables in terms of the disciplinary orientation of the programmes. In terms of the Creative Studies/Technology, Humanities and Science categorisation of subjects introduced in chapter 2, the TVEI provisions of the schools as contained in Tables 1a-d above, can be summarised as in Table 3 above.

The disciplines to which the TVEI programmes are related determine, to a large extent, the vocational emphasis of the programmes and, therefore, the balance between the general and vocational education provisions of the schools. It can be seen from Table 3 that all the three main areas/disciplines were represented in the City schools while two areas are covered in Small-Town and one area in Big-Town School. In general, however, the emphasis was on the Creative Studies/Technology area.

Indeed, apart from PSE, all the TVEI designated subjects in Big-Town School were in this area. While the disciplinary focus of programmes is indicative of the balance between general and vocational education provisions in the TVEI of the schools, the disciplines need to be considered in conjunction with other relevant variables, such as time/period allocation which will be discussed shortly.

The organisation of curricular activities for the purpose of delivery is primarily aimed at relating the activities to resources. As earlier indicated, however, schools need to take account of the characteristics and needs of pupils before linking activities to resources. In the context of the programmes

framework of this study, this implies a consideration of the 'for whom' component.

7.1.2 Curriculum Organisation: The 'For Whom' Component of the Programmes

Pupil Differentiation: It was noted in chapters 2 and 4 that activities can be organised to differentiate between pupils in terms of age/year group, sex, ability and special needs. As a 14-18 curriculum initiative, the TVEI pilot was targetted mainly at 4th and 5th year pupils in all the case study schools. In practice, however, the philosophy of TVEI in terms of new teaching and learning styles, as well as the utilisation of TVEI-funded resources, are not limited to these year groups. This is as might be expected. Also, as indicated in the previous chapter, all 4th and 5th year pupils were eligible to participate in any of the TVEI programmes in all the schools. Thus, the notion of a 'practical TVEI cohort' within the 14-18 age range was not applicable in any of the schools. In terms of year group, therefore, TVEI in the schools as reflected by the programmes identified in Table 1, and indeed to all the curricular issues contained in this chapter, relate to pupils in the 4th and 5th years.

All the schools studied operated mixed sex and ability programmes and activities. According to the City LEA TVEI Annual Report (1987, Annex 3), Small-City School, in its first year of TVEI, experimented with the idea of separate boys and girls groupings in their 4th year IT course. In the experiment, part of 4th year was grouped into separate boys and girls, and the other part into mixed groups. The idea, according to the report, was abandoned at the end of that year in favour of mixed groupings following the recommendations of an external researcher who was

commissioned to examine the experiment. The report indicates that the researcher found pupils to be more motivated and supportive in mixed groups, although the separate girls groups were found to be quieter and more orderly than separate boys or mixed groups.

With respect to special needs, Appendix IX shows that separate special needs classes were organised in Small-City and Big-Town Schools but not in the other two schools. The co-ordinators of the two schools without special needs classes indicated that pupils who needed additional help were usually identified and given extra attention within mainstream classes. The separated and integrated approaches mean that specialist teachers handled special needs classes in Small-City and Big-Town Schools while individual subject teachers did so in Big-City and Small-Town Schools. Arguments can be made for and against the two approaches in educational and resource terms. For example, the separated approach can be argued to be less economical and flexible than the integrated approach since it has the potential of restricting some staff to particular activities. At the same time, the separated approach can be argued to be better suited for meeting pupils' needs since it ensures that special needs activities are delivery with specialist teachers and other resources.

Apart from providing for special needs, the programmes of the schools were in effect homogeneous in terms of gender and ability. Pupil differentiation was addressed by the schools largely through the option system and the integration and modularisation of subjects. These will now be examined under the 'how' component of programmes.

7.1.3 Curriculum Organisation and Delivery: The 'How' Component of the Programmes

The Programme Structures: Tables 1a-d indicate that TVEI subjects and courses at the schools exhibit two main structural forms which can be called separated and integrated. Separated subjects are largely homogeneous and related to a particular subject within a discipline. For example, Textiles (creative studies discipline), History (humanities discipline) and Biology (science discipline) as subjects in their own right, are homogeneous in terms of traditional secondary school subjects. By contrast, although Biology, Chemistry and Physics are typical science subjects, the three have been integrated to produce the Science courses in Big-City, Small-City Small-Town Schools. Integrated subjects are therefore heterogeneous and comprise elements (content) from one or more subjects within a discipline, or group of disciplines or curriculum areas. Apart from Science, other integrated subjects from Tables 1a-d are Design and Humanities in in Big-City and Small-City, PSE in Big-Town and ILP in Small-Town. A classification of the TVEI programmes of the schools into separated and integrated subjects, and the composition of the integrated subjects are shown in Table 4 below.

From Table 4, it can be seen that subject structures varied: some activities were provided as subjects in their own right in some schools and as components of courses in others. Thus, as earlier indicated, Guidance was provided as a subject in its own right in the City schools but as part of subjects in the Town schools. Similarly, IT was offered as a subject in Small-City School, as an element of a course in Small-Town School, and as a cross-curricular (non-subject) activity in Big-City and Big-Town

Table 4

The Structure of Subjects - Separated and Integrated

	Subject	Composition	Schools
Separated	Business Studies	Business Studies	Big-City, Small and Big-Town
	Guidance	Guidance	City schools
	Design Tech	Design Tech	Town schools
	Food Studies	Food Studies	Big-Town
	*IT	*IT	Small-City
	Leisure	Leisure	City schools
	Media Studies	Media Studies	Town schools
Integrated	Design	Art, Home Econs, Textiles and CDT*	City schools
	Humanities	Geography Economics History and RE*	City schools
	Science	Biology, Physics and Chemistry	City schools and Small-Town
	*ILP	Bus Studies Community Studies	Small-Town
	PSE	Guidance and IT Social Education	Big-Town school
		Guidance and RE*	

- * CDT: Craft, design and technology
- ILP: Integrated Learning Programme
- IT: Information Technology
- PSE: Personal and Social Education
- RE: Religious Education

Schools. These variations in programme structures and modes of provision are relevant to the question about whether the 'what' component of programmes is homogeneous or heterogeneous. Thus, different components of an integrated course could make different resource demands. The implications of the separated-integrated classification of activities, as will be discussed in the next chapter, relate to the issue of whether different components (subprogrammes) of a programme, or the same programme provided in different ways make different resource demands.

The development of integrated courses has led to a more comprehensive view of subjects and courses than the single subject approach. Thus, rather than providing Computer Studies or Computer Science subjects, more comprehensive Information Technology courses have been developed. Similarly, rather than Office Practice or Business Communication as separate subjects, more comprehensive Business Studies courses have been designed. However, as can be seen from Table 4, both Business Studies and Information Technology were not regarded as integrated courses in any of the schools. This is because Business Studies was introduced new with the TVEI in all the schools, except Big-Towm. In that school, an integrated Business Studies course was not developed; rather an additional business studies subject (Business and Information Studies) was introduced at the inception of TVEI, additional to the existing Office Communication subject. As earlier indicated, these subjects will be referred to as Business Studies I and II in subsequent discussions. Information Technology was not also regarded as an integrated course in any of the schools because although it was developed from the enhancement of original Computer Studies subjects in all the schools, it was an element of the ILP course

in Small-Town School and was used as a (cross-curricular) resource to support other programmes in Big-City and Big-Town Schools.

The separated-integrated classification of subjects has implications for curriculum delivery in terms of teacher specialisation and staff deployment and development. However, the immediate value of this classification is that it provides a framework for examining the educational change implicit in the subjects. Thus, in terms of newness and enhancement, the focus will be on the whole subject for separated courses, but on both the elements and the subject as a whole for integrated courses. In this respect, a subject introduced with the TVEI is clearly new and, therefore, represents change. In that case what needs to be further examined for a separated subject includes whether it has been added to, or replaced one or more of the existing offerings. However, apart from addition and replacement, the injection or (withdrawal) of elements of an integrated course also needs to be considered. Similarly, if an existing subject is enhanced, such enhancement will relate to the whole subject, if separated, and to both the elements and the whole subject if integrated. Evidence from the schools shows that enhancement is reflected in both subject content and teaching and learning styles. In terms of 'new' (introduced with TVEI) and 'enhanced' subjects, as well as addition, replacement and injection, the TVEI programmes of the schools are summarised in Table 5 below.

Table 5 indicates that four new subjects were introduced and added to the existing provisions in Big-City and Small-City, three in Small-Town and two in Big-Town. It also shows that, apart from IT which replaced former computer subjects in the

Table 5

The 'Newness' of Subjects and Courses

Schools	Subject	Enhanced	Comments	
	New			
Big/Small-City	Bus Studies		New/Added	
	Design		New/Added	
	Humanities		New/Added	
	Science		New/Added	
		Guidance		Content enhancement.
		IT	Replaced computer course	
		Leisure	Enhancement of PE course	
Big-Town	Food Studies		New/Added	
	Media Studies		New/Added	
		Bus Studies		Expanded and reorganised
		Design Tech		Content enhancement
		IT		Cross-curricular; Replaced computer course
		PSE	Enlarged and reorganised	
Small-Town	Design Tech		New/Added	
	Media Studies		New/Added	
	ILP		New/Added	
		Science		Replaced Biology, Physics and Chemistry schools,

schools, there was little replacement. This situation is explained by the fact that, apart from ILP in Small-Town School, all the integrated courses were introduced while their components were still retained as optional subjects for the same groups (4th and 5th year) of pupils. For example, in addition to the integrated science courses in the City schools, the schools also offered Biology, Chemistry and Physics as 4th and 5th year options for pupils who wanted more depth in these areas. However, at the time of the investigation, the schools indicated that they intended to phase out the components of the science course and actually did so in the 1990/91 session. The components of the integrated Design and Humanities courses in the City schools were also offered separately as options. The situation was similar in Small-Town School until September 1989 (just before the fieldwork started) when the components of the integrated science course were phased out of the curriculum offerings of the school of the 4th year. As will be discussed in the next chapter, this has resource implications since, in addition to time/period allocation to subjects, pupil number and group size, the more subjects there are on offer, the more the teacher-periods that will be required to teach them. There was little injection of programmes into existing provisions apart from in Big-Town School where religious education was added to the PSE course in September 1989 following the introduction of the National Curriculum. Similarly, Small-Town School included RE and Leisure in their Integrated Learning Programme in September 1990.

Although cross-curricular activities are not included in Table 4, some of them were introduced with the TVEI while others were enhanced by it. Thus although work experience was undertaken in

all the schools before the TVEI, it was linked to a few select subjects in the Town schools and undertaken by a proportion of the relevant year (4th or 5th) groups in the four schools. After the introduction of TVEI, work experience was enhanced in all the schools by targetting it to the whole year group. Similarly, residential experience was undertaken in all the schools before TVEI but was enhanced through greater pupil participation after the introduction of the Initiative. With regard to records of achievement, the activity existed in less developed forms in the City schools before TVEI, but was introduced new with the TVEI in the Town schools.

The Status of Subjects and Courses: As noted in chapter 2 and reflected in the research framework outlined in chapter 4, of equal importance to the question of whether new and enhanced should be added or replaced, is the status of subjects in terms of core and options. A classification of the TVEI designated subjects of the schools into core (undertaken by all pupils in a year group) and options (undertaken by a proportion of pupils) is given in Table 6 below.

Table 6

The Status of TVEI Subjects - Core and Options

	Big-City	Small-City	Big-Town	Small-Town
Core	Design Humanities Science Guidance Leisure (5)	Design Humanities Science Guidance Leisure IT (6)	PSE (1)	ILP Design Tech Media Studies Science (4)
Option	Bus Studies (1)	Bus Studies IT (2)	Bus Studies Design Tech Food Studies Media Studies (4)	(0)

It will be noticed that Table 6 answers a question implicit in Table 5: In terms of subject status, how are subjects added and/or replaced? The classification of subjects into core and options is also relevant to the issue of pupil participation and, therefore, to the impact of an educational initiative. Table 6 indicates that most of the designated TVEI programmes were undertaken by whole (4th and 5th) year groups in Big-City, Small-City and Small-Town schools while the reverse was the case in Big-Town School. Infact, all the TVEI subjects and courses were in the core in Small-Town school. The Table also shows that IT was offered as both a core and an option in Small-City school. The obvious implication of having most of the TVEI subjects in the core is that it leads to greater pupil participation (since more pupils will be involved) and, therefore, a greater impact of the Initiative. At the same time, the decision has implications for the degree of freedom given to pupils in the selection of their learning experiences and, in the context of TVEI, appears to be inconsistent with the TA requirement that pupil participation in TVEI should be voluntary.

To summarise the organisation of the activities (programmes), a comparison of Tables 4, 5 and 6 indicates that integrated courses in all the schools were offered as core activities, and that, apart from PSE in Big-Town School, they were newly introduced with TVEI (see Tables 8a-d). The inclusion of integrated courses as core rather than options has a number of resource and educational implications. First, other conditions being stable, core subjects, as pointed out in chapter 2, enhance economy in staff utilisation since pupil group sizes will not depend on pupil choice. Secondly, decisions on core and optional subjects could affect curriculum breath, balance and differentiation where

the subjects in the core are skewed towards particular disciplines. This problem is addressed in City schools by offering core integrated courses in the three areas of creative studies, humanities and science. By contrast, in Small-Town School where ILP, Design Technology and Media Studies were all creative studies/technology based, there appears to be an emphasis towards creative studies in the core. The degree to which this is the case, however, also depends on the proportion of the total curriculum time devoted to these subjects.

While the allocation of time/periods to subjects and other curricular activities will be treated in the next chapter in conjunction with the resource implications of the outcomes of decisions in the schools, the approaches which the schools have adopted to link activities, pupils and resources will now be examined. This will form the basis on which the distribution of resources will be explored in the next chapter.

7.1.4 Curriculum Delivery: Linkages Between the Components of Programmes

The organisation and deployment of teachers in the schools have been influenced by the organisation of subjects/courses and pupils discussed above. More specifically, the introduction of new and integrated courses, and the increased emphasis on cross-curricular activities and new teaching methods have combined to redefine the roles of, and relationships between, teachers. The linkages between activities, pupil and teachers will now be examined in terms of the timetabling approaches adopted by the schools, and the place of modules and the specialisation of teachers in the delivery of the curriculum.

The Modularisation of Subjects and Courses: An important finding of the study was that the separated-integrated structuring of subjects introduced a new dimension to the notion of core and optional subjects, curriculum differentiation, and the related issue of meeting the differences in pupil characteristics and interests. It was noted in chapter 2 that schools traditionally classify subjects into compulsory, restricted and free options. The compulsory subjects normally comprise the foundation subjects of English, Mathematics and Physical Education. Similarly, the directed/restricted options relate to subjects in the 'core' disciplines of creative studies, humanities, languages and science in which pupils were required to select at least one subject from each area. Under this arrangement, separated subject structures were the norm. The evidence from the schools suggests that, with the introduction of integrated or generic courses, the concept of directed option was re-defined from choice of a subject within a discipline to choice of an activity within a course in a discipline or group of disciplines.

An alternative to the traditional topic approach, and a development which all the school co-ordinators identified as having been enhanced by the TVEI, was the introduction of modular organisation and delivery. Using the Design course in the City schools as an example, rather than requiring pupils to select a subject from Art, Home Economics, Textiles and CDT, a comprehensive Design course is produced so that all pupils will undergo the same basic experience in all the areas while developing and carrying out projects in their areas of interest. This has been achieved by the schools through the integration and modularisation of subjects and courses.

In this context, the City schools adopted the modular system earlier than the Town schools. The approach was only adopted in Big-Town School in the 1988/89 academic year, its second year of TVEI, and in Small-Town School in the 1989/90 session, its third year of TVEI and the the year this case study was carried out. With the exception of Guidance, all the TVEI subjects earlier identified were organised and taught in modules in the two City schools from the inception of the Initiative. The approach was also extended to non-TVEI subjects in the the two schools. In Big-Town School, PSE, Design Technology, Food Studies and Media Studies were the TVEI subjects organised in modules while Modular Science was also offered as a non-TVEI subject. In Small-Town School, the approach was adopted for ILP, Science, Design Technology and Media Studies from September 1989. A comparison of these subjects with the separated-integrated classification of TVEI subjects in the schools (Table 4) indicates that both separated and integrated subjects were affected.

The general approach adopted for delivering modules in the schools is as follows. For a proportion of the time available for a module, pupils received a common experience as the time is used to develop the theory underlying the module. Thereafter, pupils developed and executed projects in areas of their choice under supervision. In this way the schools have sought to address, simultaneously, the issue of equal opportunities and pupil differentiation. However, in terms of linkage between activities, pupils and teachers, two main approaches were reflected in the schools.

In the first, more commonly used in all the schools, an entire subject and/or modules within it was delivered by a teacher (specialist or non specialist) to a particular group of pupils.

This approach was adopted in the delivery of all modular and non modular as well as separated and integrated subjects in the schools, except Design and Leisure in the City schools. In terms of linkage between pupils and teachers, this approach is characterised by one teacher to one pupil group/class. Because integrated courses (or modules within them) contained elements from different areas, the school co-ordinators indicated that this approach necessitated initial induction and on-going co-ordination, collaboration and INSET aimed at enabling teachers to effectively deliver subjects other than those in which they are specialised.

In the second approach, used to deliver Design and Leisure in the City schools, pupils were not tied to particular teachers. Here, a team of teachers was identified to deliver a course. Then, the initial development of the theme and theory underlying each module in the course, which lasted about two weeks, was undertaken by both specialist and non specialist teachers who the co-ordinator for Design in Big-City School called 'base tutors'. Thereafter, the development and execution of the module is supervised, not by a teacher to a pre-determined group, but by a specialist teacher to those pupils who have chosen to execute the module in his or her area. In terms of linkage between pupils and teachers, this approach is characterised by several teachers working with a pupil group. The approach is also more flexible than the former in that, in a four module course, for example, a pupil can undertake the four modules in four different areas under four different specialist teachers. This, like the other approach, has implications for co-ordination, collaboration and INSET.

Both approaches address pupil differentiation in terms of differences in abilities and intertests. The latter approach also has the advantage of offering specialist knowledge to pupils. However, the approach has some obvious drawbacks. Thus, depending on the choices pupils make, some teachers in the team may be overloaded while others are underloaded. Those responsible for the subjects in which this approach was adopted indicated that they addressed this problem by asking pupils to make three choices in three different areas. This way, pupil' choices were accommodated while, at the same time, ensuring that they are equitably distributed among teachers. The drawback, however, is not completely eliminated since there exists an apparent discrepancy, in terms of pupil interests, between those offered their first choices and those offered their third.

All the co-ordinators agreed that the modular approach enhances process-based, problem-solving and student-centred learning.

According to the co-ordinator of Big-City School, modules are suitable for 'incorporating case studies, projects and other activity learning methods in several curriculum areas'.

Similarly, the co-ordinator of Small-City School said that modules 'encouraged the negotiation of tasks between pupils and teachers'. However, the co-ordinators of the two City schools as well as the LEA's TVEI annual reports point out some problems associated with modular curriculum organisation and delivery. Thus, the City LEA TVEI Annual Reports (1986 and 1987) include the following as issues of concern with respect to modules.

- a. Lack of time within and between modules for effective feedback.
- b. More demands made on teachers to acquire new teaching skills and work with unfamiliar subject matter.

c. Constraint on the delivery of cross-curricular activities, in particular, residential and work experiences.

Similarly, the co-ordinators of the two City schools indicated that, in reality, modules increased the pressure on both pupils and teachers because the available time was usually not sufficient for pupils to satisfactorily complete a project, or for a teacher effectively to teach, assess and feedback results. These observations were apparently possible in the City but not the Town schools because the latter, as earlier indicated, had not adopted the system long enough to make a meaningful assessment. However, these problems not only relate to the lack of full integration of cross-curricular activities in the schools ('c' above) but also highlight the roles of skills and the specialisation of teachers, and the related staff development in curriculum delivery.

Teacher Specialisation: The specialisation of teachers is an important resource management issue partly because teachers are trained in particular areas, and partly because of the problem of resource inadequacy in certain areas. There was evidence of teachers being deployed to teach across their areas of specialisation in all the schools. Thus, in addition to teaching different classes, teachers with different subject backgrounds were deployed to teach the same subjects. As the co-ordinator of Big-City School indicated in relation to Information Technology, for example, '... different teachers teach our IT course ... but they have one thing in common: none of them has an initial IT background'. This was reflected in both separated and integrated subjects, although it occurred more widely in the integrated subjects (see Appendix X).

The use of teachers across subject boundaries, or according to Lines and Stoney (1989), the 'migration' of teachers has implications for flexibility and collaboration in the use of resources. A rather unusual example of transfer of skills and flexibility in the use of teachers was given by the co-ordinator of Big-City School. According to him, in their first year of TVEI, there was a history teacher who 'in addition to history, also taught IT, Humanities, Leisure and Guidance, all of which he had never taught before'. While this example illustrates the opportunities available to schools for enhancing flexibility in the use of resources, its implications for the quality and stability of teaching and learning also need to be considered.

Collaboration: With respect to collaboration, the emphasis was more on the sharing of ideas and skills than of physical resources. Such collaboration occurred between subjects and other curriculum areas as well as between institutions. In the City schools, for example, teachers in Guidance and English collaborated in the delivery of work experience. Similarly, Design Technology in Big-Town School was jointly delivered by the technology and physics departments. In pointing out the emphasis placed on the sharing of skills in his school, the co-ordinator of Small-Town School had said:

... now we have joint planning, joint review and joint evaluation ... we are adopting a holistic approach ... for example, we are looking at ways of integrating modern languages into business studies.

Apart from computers in IT rooms which were available to all areas and departments, there was little evidence of centralised equipment in any of the schools. The co-ordinator of Big-City School had indicated that the school had established a 'small resource centre' but added that it was not being effectively

utilised because 'its location did not make it readily accessible to teaching areas'. He noted that departments tended to prefer to have their equipment located in their rooms. In any case, there were instances of inter-departmental sharing of resources. For example, English, Mathematics, Languages and Business Studies departments in Big-City School shared four computers between themselves. Similarly, English and Media Studies departments in Big-Town School shared video equipment, while Business Studies and Community Studies in Small-Town School had common resources, principally because they were both within the ILP course.

The use of external resources was also a common feature in all the schools. Because the TVEI is a 14-18 programme undertaken by both secondary schools and further education colleges, the opportunity was seized by the schools to link themselves with colleges close to them. At the initial stages of the Initiative, Business Studies in Small-City School was jointly delivered between the school and a neighbouring college. Similarly, Food Studies in Big-Town, and Design Technology and Media Studies in Small-Town School were being jointly delivered between the schools and colleges up to the time of investigation. The collaboration usually included the movement of both pupils and teachers between the schools and colleges.

Despite the potential benefits of collaboration, its achievement has not been without constraints. Thus the co-ordinators cited time and curriculum overlap as some of the constraints associated with collaboration. The co-ordinator of Big-City School, for instance, pointed out that time was a problem because any time allocated to one area automatically affected other areas, thereby making it difficult to timetable activities to take account of potential areas of collaboration. He added that the attempt to

avoid curriculum overlap, which is one of the aims of collaboration and co-ordination, can sometimes 'kill the ideas of teachers' as they try to avoid duplicating activities. Similarly, the co-ordinator of Big-Town School said that collaboration in his school was not widespread because it is enhanced when departments have things in common, adding that departments in the schools did not seem to have identified common grounds. The fact that this observation came from the only school where almost all TVEI subjects were offered separately is significant and suggests that the integration of subjects enhances collaboration.

Another point of interest in relation to collaboration concerns school-college links. Most of the teachers who took pupils to colleges for joint 'lessons' complained of the diversity between school and college approaches to teaching, a situation which they attributed largely to the different 'cultures' of the two forms of institution. According to the Food Studies teacher in Big-Town School: 'I think it is because the college atmosphere is ... more mature. FE (college) teachers seem to take our pupils for their students and (therefore) take a lot of basics for granted'. This remark suggests that collaboration should generally be regarded as a complementary delivery strategy, as a means to an end and not an end in itself.

Timetabling (Block Timetabling): The final decision in the process of linking activities, pupils and resources, concerns the timetabling of activities. Timetable management is as important as many of the issues so far discussed as relating to resource management. In timetabling pupils and activities, there are at least four possible approaches, using pupils and periods as the relevant variables. These are:

1. Timetabling all pupils in a year group for all periods allocated to a subject (or other activity) for the week at the same time.
2. Timetabling all pupils in a year group for part of the periods allocated to a subject for the week at a time.
3. Timetabling part of a year group for all periods allocated to a subject for the week at a time.
4. Timetabling part of a year group for part of the periods allocated to a subject for the week at the same time.

All the four approaches shown above were reflected in the schools in varying degrees. In City LEA, 1 and 3 and, to some extent, 2 above were referred to as 'block timetabling'. According to the LEA's TVEI Annual Report (1987, p. 38), confirmed by the co-ordinators of the two City schools, block timetabling is aimed 'to promote the sharing of resources and expertise through student migration between classrooms and teachers'. With respect to the TVEI subjects earlier identified, the situation in the schools is as shown in Table 7.

Two factors, the core and option status of subjects and the number of periods allocated to subjects, are relevant to an analysis of these choices. Thus, the decision to timetable all pupils at once is mainly significant for core subjects in which whole year groups are involved. Similarly, decisions about whether to timetable all periods for a subject at once is important mainly in those subjects that have been allocated high number of periods. A subject with one period in a week, for example, will certainly have the period timetabled at once.

The linkage between activities, pupils and teachers can then be summarised as follows:

1. Pupils to Activities (subjects): Mixed (gender and ability) groupings were operational in the schools; thus they

Table 7

Approaches to the Timetabling of Activities

Approach	Example	School
Whole Year Group and All Periods at once	Design	Small-City
	Leisure	"
	Guidance	"
	Design Technology	Small-Town
	Media Studies	"
Whole Year Group and Part of Periods	IT (Year 5)	Big-City
	Science	Small-City/Small-Town
	ILP	Small-Town
	Business Studies	Big-City/Small-City
	Business Studies I	Big-Town
	Design Technology	"
	Food Studies	"
	Medis Studies	"
Part of Year Group and All Periods	Design	Big-City
	Humanities	"
	Leisure	"
	Guidance	"
	PSE	Big-Town
Part of Year Group and Part of Periods	Science	Big-City
	Humanities	Small-City
	IT	"
	Business Studies II	Big-Town

have addressed issues relating to curriculum breadth and balance, and pupil differentiation (curriculum relevance and differentiation) through their core and option systems, the separation and integration, and the modularisation of subjects and courses as follows:

- a. Separated subjects: Pupils linked to individual subjects in particular disciplines.
 - b. Integrated Subjects and Modularisation (in both separated and integrated subjects): Pupils have a core experience and are later linked to elements within a course in a discipline or group of related disciplines.
2. Teachers to Activities: Partly because teachers are normally trained to teach particular subjects, and partly because of inadequate teachers in certain areas, the decision has to be made as to whether to assign specialist teachers to subjects or modules within integrated courses, or to utilise them across disciplinary (specialisation) boundaries. The evidence from the schools indicates that:
- a. Both approaches were adopted in all the schools.
 - b. There was also a variant, whereby both specialist and non specialist teachers share responsibility in the delivery of the same modules.
3. Teachers to Pupils: Mainly as a result of problems associated with resource availability, it is necessary to decide whether to assign one or more teachers per subject and/or pupil group/class in a year group. This is particularly relevant in large schools and for core subjects where pupil groups can be as many as 15 in a year group, for example, Design in Big-City School (Table 11a). Apart from optional subjects with small numbers of pupil groups, the evidence from the schools indicates that:
- a. Most subjects were taught by several teachers to different groups in the same year group in all the case study schools, with each teacher having his/her own class.

- b. For some courses, more than one teacher taught the same course (particularly modules within it) to the same pupil group.

These were linked through the timetabling of activities according to the four approaches identified earlier (Table 7).

7.2 Conclusion

In this chapter, practices in the case study schools have been described using the 'programmes' framework of the research, highlighting important similarities and differences between the schools. The chapter will now be concluded by summarising the key choices made by the schools, and the major similarities and differences between them.

The TVEI programmes in all the schools included both curricular (disciplinary) and cross-curricular (non-disciplinary) activities. Both curricular and cross-curricular activities were provided as subject as well as non subject-based activities, although curricular activities were provided mainly as subjects, and cross-curricular activities mainly as non-subjects. The implication of this is that curricular and non-curricular activities are better defined in terms of single and multi disciplinary focus, rather than subjects and non subjects.

The TVEI curricular activities of the schools differed in terms of disciplinary balance, with the City schools reflecting creative studies/technology, humanities and science areas, and Small-Town and Big-Town Schools reflecting creative studies and science areas, and only creative studies area respectively.

In terms of subject and non subject-based activities, and disciplines covered, the TVEI curriculum of the schools was as follows:

- a. Subjects - Mainly curricular activities in all the schools.
 - An exception was Guidance (a cross-curricular activity) which was offered as a subject in its own right in the City schools, and as part of taught courses in the Town schools.
- b. Non-Subjects - Mainly cross-curricular activities and IT.
 - An exception is IT which was offered as a subject in Small-Town School, as part of a course in Small-Town School.
- c. Discipline - Three areas (creative studies, humanities and science) reflected in the City schools.
 - Two areas (creative studies and science) reflected in Small-Town School.
 - One area (creative studies) reflected in Big-Town School.

It has been noted that the disciplinary orientation of subjects is related to curriculum breadth, balance, relevance and differentiation. These criteria for curriculum organisation were addressed by the schools mainly through the separated and integrated structuring, the core and option system, and the modularisation of subjects and courses.

In this context, these curriculum organisations options were reflected in the four schools, although there were variations between them in terms of the number and types of subjects affected by each option. With respect to the change implications of the choices, some activities were introduced 'new' with the TVEI, while others were 'enhanced' mainly through re-organisation and greater pupil involvement. Also, there was substantial addition but little injection of new subjects into the existing curricula of the various schools, primarily because the components of integrated courses were still retained as options.

The situations in the schools in relation to these developments are summarised in Tables 8a-d, while a summary of the linkages between activities, pupils and resources as reflected by the choices made in the schools, is given in Table 9.

Table 8a

Curriculum Organisation Patterns - Big-City School

	Separated/ Integrated	Core/ Option	Modular/ Non-Modular	New/ Enhanced
Bus Studies	Separated	option	Modular	New/Added
Guidance	"	Core	Non-Modular	Enhanced
IT (5th Year)	"	Option	Modular	"
Leisure	"	Core	"	"
Design	Integrated	"	"	New/Added
Humanities	"	"	"	"
Science	"	"	"	"

Table 8b

Curriculum Organisation Patterns - Small-City School

	Separated/ Integrated	Core/ Option	Modular/ Non-Modular	New/ Enhanced
Bus Studies	Separated	option	Modular	New/Added
Guidance	"	Core	Non-Modular	Enhanced
IT (Year 4 only)	"	Option	Modular	"
IT (Years 4 & 5)	"	Core	"	"
Leisure	"	"	"	"
Design	Integrated	"	"	New/Added
Humanities	"	"	"	"
Science	"	"	"	"

Table 8c

Curriculum Organisation Patterns - Big-Town School

	Separated/ Integrated	Core/ Option	Modular/ Non-Modular	New/ Enhanced
Bus Studies	Separated	Option	Non-Modular	Enhanced
Design Tech	"	"	Modular	"
Food Studies	"	"	"	New/Added
Media Studies	"	"	"	"
PSE	Integrated	Core	Non-Modular	Enhanced

Table 8d

Curriculum Organisation Patterns - Small-Town School

	Separated/ Integrated	Core/ Option	Modular/ Non-Modular	New/ Enhanced
Design Tech	Separated	Core	Modular	New/Added
Media Studies	"	"	"	"
Science	Integrated	"	"	Enhanced
ILP	"	"	"	New/Added

Table 9

Resource Distribution: Linkages Between
Activities, Pupils and Teachers

Choices For:	Related Objective(s)	Situation in the Schools	Implications
Separated/Single Discipline Vs Integrated/Multi-Discipline Structure	Curriculum Breadth and Balance	Both approaches - Separated and Integrated Subject Structures	Specialist Vs Non-Specialist Teaching
Differentiated Vs Mixed Pupil Groupings	Pupil' Needs Curriculum Relevance/	Mixed Groups Core and Options Modularisation	Economic Use of Resources Teacher-Periods
Specialist Vs Non-Specialist Teaching	Teacher Specialisation Resource Availability	Both Approaches	Economic Use of Teachers Co-ordination/ Collaboration/ INSET
Single Versus Several Teachers Per Subject or Pupil Group Per Year group	As Above	As Above	As Above
Timetabling of Whole Vs Part of Year Group at a Time	As Above	As Above	Timetable Management Flexible Use of Resources

The Resource Implications of the Curriculum
Organisation and Delivery Approaches of the Schools

The previous chapter examined the various approaches that have been adopted by the schools for organising and delivering their curricula. The merits and demerits of those approaches cannot be fully explained without a consideration of their resource implications, and in particular, their implications for resource utilisation. That is the subject of this chapter.

As outlined in chapter 1 and elaborated in chapter 4, this will be done by examining how resources have been distributed as a result of the 'programme' structure adopted in the TVEI of the schools. Specifically, the allocative choices of the schools will be examined in terms of a number of performance measures - economy in the use of resources, equity (balance) in the allocation of resources and pressure (load) on teachers. Furthermore, with the 'change' implications of TVEI in the schools outlined in terms of the 'newness' of programmes in the previous chapter, the extent to which the Initiative has impacted on the schools will be examined in terms of the degree to which pupils were involved in TVEI activities.

Apart from pupil numbers, the number of periods allocated to various subjects are indicative of the amount of resources committed to them. Similarly, pupil group sizes affect resource utilisation because the smaller the group size in a subject, the more pupil groups and, therefore, the more teacher-periods that will be needed to deliver the subject. Consequently, it is necessary to start the analysis with an examination of the allocation of time/periods to subjects and the factors

influencing group size. However, because of the difficulty in determining the time spent on out-of class activities, only those activities (mainly subjects and courses) which were embodied in the normal timetables of the schools will be considered.

8.1 Timetabling and Time Allocation to Subjects

The relative allocation of time, in terms of periods, to subjects and other curricular activities has a number of implications, both managerial and resource. In management terms, the number of periods allocated to a subject is indicative of the priority given to it within a particular school. In resource terms, pupil and teacher-periods are measures of pupil and teacher involvement in curricular activities.

In addition to face-to-face teaching time, the school day includes other in-class and out-of-class activities such as assembly, recreation and lunch. The school day was found to vary by about 8% (7.89) between the schools:

Big-City: 8.40 am-3.30 pm (6 hours, 50 minutes).
Small-City: 9.00 am-3.30 pm (6 hours, 30 minutes).
Big-Town: 8.45 am-3.00 pm (6 hours, 15 minutes).
Small-Town: 8.55 am-3.15 pm (6 hours, 20 minutes).

Despite this variation, the actual teaching time was found to be largely the same for all the schools. Thus the total timetabled periods in a day was as follows:

Big-City: 4 hours 30 minutes
Small-City: 4 hours 35 minutes
Big-Ham: 4 hours 30 minutes
Small-Town: 4 hours 30 minutes

However, although the actual teaching time was similar for the schools, the periods in operation per week vary, with Big-City and Small-City Schools having a 40 period week or 8 periods per day and Big-Town and Small-Town Schools having 20 and 30 periods per week or 4 and 6 periods per day respectively. Consequently, as can be seen from Appendix VIII which outlines the school day of the schools, the duration of periods varied between the schools.

The fact that the schools operated on different numbers of periods per week raises the question as to whether time allocation to subjects should be stated in relative (percentage) or absolute (periods) terms. For the purpose of comparison between schools, period allocation to subjects in the schools needs to be brought to a common denominator. Accordingly, a 40 period week or 8 periods per day will be used in the analysis of curriculum time in all the schools. On this basis, the allocation of time to the designated TVEI subjects of the schools (identified in chapter 7) in the 1989/90 academic year is as shown in Tables 10a-d below. The distribution of periods to all 4th and 5th year subjects in the schools is included as Appendix IX.

Cross-curricular activities are not reflected in the above Tables because they were not embodied in the official timetables of the schools. Information Technology, for example, was reflected in the timetable of Big-City School when it was offered as a subject but not after it became cross-curricular. Apart from the activities relating to Records of Achievement which were undertaken within individual subjects and co-ordinated centrally in all the schools, work and residential experiences were

Table 10a

Allocation of Periods to Designated TVEI Subjects:
Big-City School (1989/90)

Subject	Structure	Periods/week		Assessment
		Year 4	Year 5	
Core				
Guidance	Separated	2 (5%)	2 (5%)	RoA *
Leisure	"	4 (10%)	4 (10%)	"
Design	Integrated	4 (10%)	4 (10%)	GCSE *
Humanities	"	4 (10%)	4 (10%)	"
Science	"	4 (10%)	4 (10%)	"
Option				
Bus Studies	Separated	4 (10%)	4 (10%)	GCSE
Info Tech	"	-	4 (10%)	"

* RoA: Records of achievement

GCSE: General Certificate of Secondary Education

Table 10b

Allocation of Periods to Designated TVEI Subjects:
Small-City School (1989/90)

Subject	Structure	Periods/week		Assessment
		Year 4	Year 5	
Core				
Guidance	Separated	2 (5%)	2 (5%)	RoA
Leisure	"	4 (10%)	4 (10%)	"
Info Tech	"	2 (5%)	4 (10%)	RoA (Yr 4)/GCSE (Yr 5)
Design	Integrated	4 (10%)	4 (10%)	GCSE
Humanities	"	4 (10%)	4 (10%)	"
Science	"	4 (10%)	4 (10%)	"
Option				
Bus Studies	Separated	4 (10%)	4 (10%)	GCSE
Info Tech	"	4 (10%)	-	"

Table 10e

**Allocation of Periods to Designated TVEI Subjects:
Big-Town School (1989/90)**

Subject	Structure	Periods/week		Assessment
		Year 4	Year 5	
Core				
PSE	Integrated	2 (5%)	2 (5%)	RoA
Option				
Bus Studies I	Separated	8 (20%)	8 (20%)	Double GCSE
Bus Studies II	"	4 (10%)	4 (10%)	GCSE
Design Tech	"	4 (10%)	4 (10%)	"
Food Studies	"	4 (10%)	4 (10%)	"
Media Studies	"	4 (10%)	4 (10%)	"

Table 10d

**Allocation of Periods to Designated TVEI Subjects:
Small-Town School (1989/90)**

Subject	Structure	Periods/week*		Assessment
		Year 4	Year 5	
Core				
Design Tech	Separated	2.7 (6.7%)	2.7 (6.7%)	RoA
Media St	"	2.7 (6.7)	2.7 (6.7)	RoA
ILP	Integrated	8 (20%)	10.7 (26.7%)	GCSE in 2 areas; RoA in others
Science	"	8 (20%)	2.7 (6.7%)	GCSE; RoA (Yr 5)

* The fractional periods stem from the normalisation of the 30 periods operational in the school to a 40 period week.

undertaken at different times in different schools through a block week or weeks allocation. In the City schools, residential experience was originally undertaken in the 4th year, for a week, at the end of the Summer term, while work experience was undertaken in the 5th year, for two weeks, at the beginning of the Autumn term. The two activities were later merged in September 1989 and undertaken for three weeks at the end of the 4th year. This merger, according to the co-ordinators of the schools stemmed from the fact that teachers usually had too many activities in their hands at the start of the year to adequately organise work experience at that time. In the Town schools, residential activities were undertaken in the 4th year, for one week, at the end of the Summer term, while work experience was undertaken in the 5th year for two weeks in November in Big-Town School, and for three weeks in January in Small-Town School.

8.1.1 Factors Influencing Time/Period Allocation

Tables 10a-d indicate that the most common time allocation to subjects is 4 periods or 10% of total curriculum time. The Tables also indicate that the single most important factor that determined the amount of time allocated to subjects was accreditation, or GCSE in this case. This is evident in all the schools and cuts across the core-option and separated-integrated categorisation. Thus, core subjects have been allocated the same number or even fewer periods than options, depending on whether they lead to GCSE or are assessed internally and reflected in records of achievement. This is reflected by Guidance in the City schools and PSE in Big-Town School which are in the core but have less periods than subjects in the option. The direct relationship between accreditation and time allocation is further illustrated in Big-Town School where Business Studies I, an

option, is allocated twice the normal 10% time because it is a 'double option', leading to GCSE in two areas. The possible exceptions, as can be seen from Appendix IX, are English and Mathematics which were allocated more periods in all the schools except in Small-City where the time allocated to these subjects was equalised with others from September 1989.

A lack of correlation is also evident between time allocation and separated and integrated subjects. Thus in Big-City and Small-City Schools, Design, Humanities and Science which are integrated subjects have the same time allocation as IT and Business Studies which are separated. The exceptions are ILP and 4th year Science in Small-Town School whose time allocations are double or more than the 10% norm. As with Business Studies I in Big-Town School, this is explained by the fact that these subjects lead to more than one GCSE. The evidence from the schools therefore indicates that the allocation of periods to curricular activities is largely influenced by whether or not an activity leads to GCSE, or, in more general terms, external accreditation.

8.1.2 Opportunities for Pupil Involvement and Curriculum Balance

Apart from the rationale for allocations, the figures in Tables 10a-d also have implications for pupil participation in TVEI, in terms of the opportunities provided by the schools' programme structures. Similarly, an aggregation and classification of the figures (percentages) according to the disciplines identified in chapter 7, will give an indication of curriculum balance and, therefore, the balance between general and vocational education.

Curriculum balance and the opportunity available for pupils to participate in the curriculum can be assessed with reference to a

single pupil; that is, by examining the possible number and status of subjects which a pupil can undertake. Since every pupil participates in core activities, a starting point will be the core subjects. Using the 4th year curriculum as an example, Appendix IX shows that apart from the TVEI subjects outlined above, the other core subjects of the schools are:

Big-City and Small-City: English and Mathematics.

Big-Town and Small-Town: English, Mathematics and PE.

Appendix IX also shows that the percentage of curriculum time allocated to these subjects combined are: 25% for Big-City, 20% for Small-City, 35% for Big-Town and 26.7% for Small-Town School. From Tables 10a-d, the totals for the TVEI subjects are: 45% for Big-City, 50% for Small-City, 5% for Big-Town and 53.3% for Small-Town School. Combining these, we have:

Big-City:	TVEI subjects - 45%; Others - 25%; Total - 70%.
Small-City:	TVEI subjects - 50%; Others - 20%; Total - 70%.
Big-Town:	TVEI subjects - 5%; Others - 35%; Total - 40%
Small-Town:	TVEI subjects - 53.3%, Others - 26.7%; Total - 80%.

The remaining time allocation comprises optional subjects: pupils in Big-City and Small-City Schools select three optional subjects while those in Big-Town select six and those in Small-Town select two, with each optional subject having the normal 10% allocation.

The percentages for TVEI core subjects are indicative of the impact of TVEI (in terms of pupil take-up of subjects) in the schools since they relate to all pupils. Furthermore, taking the schools in turn, it can be seen that since Business Studies is the only 4th year TVEI option in Big-City School, pupils offering the subject will have 55% (45 + 10) of their curriculum time directly devoted to designated TVEI subjects. Similarly, in Small-City School, pupils offering both Business Studies and IT

will have 70% (50 + 20) of their curriculum devoted to TVEI. In Big-Town School where pupils are required to select six subjects in the option, choices are constrained in that pupils must select a subject from each of the four areas of creative studies, humanities, science and languages. Since all the optional TVEI subjects in the school are in the creative studies area, this means that a pupil cannot select more than two of those. Thus, in subject terms, the curriculum time devoted to TVEI by pupils in the school cannot exceed 25% (5 + 20). In the case of Small-Town School, the 53.3% curriculum time shown above represents the maximum a pupil can devote to TVEI subjects since all the TVEI subjects in the school are in the core.

On the basis of this analysis, Small-City School, with 70%, offers the highest opportunity for pupils to be involved in the Initiative. The school is followed by Big-City School with 55% then Small-Town School with 53.3% and, finally, Big-Town School with 25%. In general, therefore, the City schools offer more opportunities for pupils to be involved in TVEI subjects than the Town schools. Applying the same analysis to the balance between general and vocational education (in terms of the balance between creative studies/technology, humanities and science areas), a reasonable balance is achieved in the City schools where all the areas are not only included in TVEI, but also allocated the same curriculum time in the core. However, there is an overall emphasis towards the creative studies area since the TVEI subjects in the option are in this area. Similarly, there is a heavy emphasis on the creative studies area in the Town schools where most of the TVEI subjects are in this area.

With respect to cross-curricular activities, despite the increased emphasis given to them, the evidence suggests that they

have not been fully integrated into the overall provisions of the schools. This, according to the school co-ordinators, has resulted mainly from timetabling problems. A strong indication of this is the use of the word 'bolt-on' by three school co-ordinators and six co-ordinators of RoA and residential and work experiences to describe these activities. The co-ordinators indicated that, in addition to timetabling difficulties, cross-curricular activities also caused disruptions to the delivery of other activities. The co-ordinator of work experience in Big-City school further noted that the timing of the activity and its place in the curriculum structure of the school 'tends to reduce its importance and priority in the eyes of pupils'. Extrapolated to all cross-curricular activities, these remarks emphasise the importance of either timetabling both curricular and cross-curricular activities, or devising ways of integrating cross-curricular activities into mainstream (subject-based) provisions.

8.2 Pupil Participation and Group Size

It will be recalled that apart from having different components, programmes were, in chapter 4, defined in terms of their resource implications. Apart from the number of periods allocated to subjects, resource and, in particular, teacher utilisation is affected by other factors. These include the number of pupils involved in particular subjects and the number of pupil groups. As already noted, the core and option status of subjects is relevant to the number of pupils undertaking particular subjects since more pupils will normally be involved in core than in optional subjects. Similarly, the number of pupil groups in a subject will depend on the number of pupils involved in it, and the average group size for the subject. Pupil participation, in

terms of their take-up of subjects, and teachers utilisation will therefore be explored by examining the combination of period allocation and group sizes of subjects.

The patterns of take-up of subjects by pupils can be used as a basis for justifying the curriculum designs of schools since the greater the number of pupils undertaking a subject, the more the subject can be argued to be viable. Tables 11a-d below show the the take-up of the designated TVEI subjects and the average group sizes for 4th and 5th year pupils at the time of investigation in the 1989/90 academic year.

The broad issue examined in relation to pupil involvement in TVEI programmes concerns the relationship between core and optional, separated and integrated, and the disciplinary orientation of subjects on the one hand, and group sizes on the other.

8.2.1 Factors Influencing Pupil Group Size

As pointed out in chapter 2, class and pupil group sizes and therefore the number of pupil groups in subjects affect teacher utilisation in terms of the number of teacher-periods required to deliver them. Overall, the figures (Tables 11a-d) for core subjects in all the schools were both relatively more stable and higher than those for the options, with the exception of the figures for Business Studies which, for the 4th year, had a group size of 25 in Big-City Schools, 40 in Small-City and 24 in Big-Town School. suggesting that the figures for Business Studies was an exception rather than the rule. The co-ordinator of Small-City School attributed the high group size for Business Studies in the school to lack of relevant teachers. In general, therefore, core subjects had larger group sizes than optional subjects.

Table 11a

**Pupil Take-up and Average Group Sizes of TVEI Subjects:
Big-City School (1989/90)**

Subject	Pupil Numbers		Groups		Average Group Sizes	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
Design	274	263	15	15	18.27	17.53
Guidance	274	263	11	11	24.91	23.91
Humanities	274	263	11	11	24.91	23.91
Leisure	274	263	20	20	13.7	13.15
Science	274	263	13	13	21.08	20.23
Option						
Bus Studies	100	96	4	4	25	24
Info Tech	-	36	-	2	-	18

Table 11b

**Pupil Take-up and Average Group Sizes of TVEI Subjects;:
Small-City School (1989/90)**

Subject	Pupil Numbers		Groups		Average Group Sizes	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
Design	115	133	5	6	23	22.17
Guidance	115	133	4	6	28.75	22.17
Humanities	115	133	5	6	23	22.17
Leisure	115	133	6	6	19.17	22.17
Science	115	133	5	6	23	22.17
Info Tech	115	133	4	6	28.75	22.17
Option						
Bus Studies	40	33	1	1	40	33
Info Tech	30	-	2	-	15	-

Table 11c

**Pupil Take-up and Average Group Sizes of TVEI Subjects:
Big-Town School (1989/90)**

Subject	Pupil Numbers		Groups		Average Group Sizes	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
PSE	280	278	15	16	18.67	17.38
Option						
Bus Studies I	24	20	1	1	24	20
Bus Studies II	75	82	4	4	18.75	20.5
Design Tech	19	17	2	2	9.5	8.5
Food Studies	11	16	1	2	11	8
Media Studies	15	16	1	1	15	16

Table 11d

**Pupil Take-up and Average Group Sizes of TVEI Subjects:
Small-Town School (1989/90)**

Subject	Pupil Numbers		Groups		Average Group Sizes	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
ILP	82	83	5	5	16.4	16.6
Science	82	83	5	5	16.4	16.6
Design Tech	82	83	7	6	11.71	13.83
Media St	82	83	7	6	11.71	13.83

There is difficulty in determining the relationship between separated and integrated subjects and group size primarily because all the integrated courses were in the core. Thus, any difference in group size between the integrated courses and the separated subjects in the option may be the result of the core and optional status rather than the separated and integrated structuring of the subjects. Nevertheless, an examination of the figures for the City schools where both separated and integrated subjects were in the core, shows no correlation between the two forms of subject structuring, and group size. Thus, in Big-City School, Guidance (separated) had the same group size as Humanities (integrated). The situation was similar in Small-Town School. Thus, in the 4th year, the fact that Design Technology and Media Studies which were separated had a group size of 11.71, and ILP and Science which were integrated had an average size of 16.4 might tend to suggest that separated subjects produce smaller group sizes than integrated subjects. However, that may be the result of the disciplinary orientation of the subjects rather than their structure since both Design Technology and Media Studies are in the creative studies area.

In general, the evidence suggests that the nature (disciplinary focus) and the availability of relevant teachers and other resources more than the status (core and option) and structure (separated-integrated) of subjects determine group size. For example, the 4th year figures in Big-City School show a progressive increase in group size from Design (18.27) through Science (21.08) to Humanities (24.91). Similarly, although humanities is not reflected in Small-Town School, the 4th year figures show that creative studies based subjects (Design Technology and Media Studies) had a smaller group size of 11.71

than science with a group size of 16.4. These indications suggest that the discipline to which a subject is rooted affected group size which progressively increases from creative studies and technology based subjects through science to humanities. This was also supported by all those interviewed who had indicated that group sizes were influenced by the extent to which subjects were practical or laboratory-based and that the more practical and laboratory-based ones were assigned smaller groups.

With respect to the resource availability, mention was earlier made of the co-ordinator of Small-Town School who attributed the large group size in Business Studies to lack of teachers with the relevant expertise. The effect of resource availability on group size is further illustrated by the average group size for 5th year Food Studies in Big-Town School (Table 11c). The subject had a total of 16 pupils in two mixed (boys and girls) groups of 7 and 9, giving an average group size of 8. When the teacher responsible for the subject was asked why the 16 pupils were split into two groups considering that the number was not much higher than the 11 in year 4, she said the decision was based on resource considerations. According to her:

We have to consider the equipment that we have. Our equipment are not adequate to accommodate 16 pupils at the same time. Besides, these pupils are in their final year and should normally be given priority over other year groups (Food Studies Teacher, Big-Town School).

This teacher's response not only indicates that resource availability influences group size but also points out another factor which affects group size: pupils' age or year group.

In summary, the evidence from the schools suggests that four factors can influence group size. Of these, three - the disciplinary focus of a subject, resource availability and

Pupils' age or year group - influenced group size more strongly than the fourth - the core and option status of subjects. The cost and other implications of these findings will now be examined.

8.3 The Utilisation of Teachers and Other Resources

Pupil and teacher involvement in subjects can be measured using pupil-periods and teacher-periods respectively. The pupil-periods for a subject are obtained by multiplying the number of pupils involved by the number of periods allocated to it in a week, or the whole year. Similarly, teacher-periods is obtained by multiplying the number of pupil groups by the number of periods for a subject, although this assumes that each pupil group is taught by one teacher. Using these definitions, the pupil-periods and teacher-periods for the TVEI subjects identified in the schools can be obtained by combining Tables 10 and 11 as in Appendix XI.

The figures in Appendix XI, in themselves, do not add much to what has already been discussed in relation to Tables 10a-d (time allocation) and 11a-d (pupil involvement and group sizes). Also, the figures are too large for use as a management tool for school planning and comparison purposes, particularly, as in this study, where an aspect of the curriculum rather than the total programmes is being considered. For these reasons, a measure which is considered to be more useful is one which utilises the concept of full-time equivalence.

Full-time equivalent pupils (Fte-Ps) and full-time equivalent teachers (Fte-Ts) represent the proportion of pupils and teachers, respectively, engaged in particular subjects relative to the total curriculum of a year group. The measures are based

on the normal number of periods operational in a school and, therefore, take account of only face-to-face (timetabled) activities. Thus, if a school operates a 40 period week, then the total curriculum time for each year group is taken to be contained within those 40 periods. Since pupils and teachers are normally engaged in different subjects in different numbers, the measures enable the equivalent numbers of pupils and teachers involved in each subject to be determined.

Full-time equivalent pupils and teachers are obtained as follows:

$$\text{Fte-P} = \frac{\text{Periods/Subject/Week} \times (\text{No. of Groups}) \times (\text{Ave Group Size})}{\text{Total Periods/Week}}$$

$$\text{Fte-T} = \frac{\text{Periods/Subject/Week} \times \text{Number of Pupil Groups}}{\text{Total Periods/Week}}$$

Thus, if a subject is allocated four periods in a 40 period week and 90 pupils undertake it in six groups of 15 each, then the Fte-P is 9 and the Fte-T is 0.6. An aggregation of the Fte-Ps for all subjects in a year group will yield the total number of pupils in that year group, indicating that the figures for various subjects represent the equivalent number of pupils engaged in them. With respect to teachers, a full-time equivalent teacher is equated to 40 periods. In other words, a full-time equivalent teacher is represented by one teacher teaching 40 periods in a week, or two teachers teaching 20 periods each, or ten teachers teaching four periods each, and so on. Because teachers do not normally teach all the periods in the week, an aggregation of the Fte-Ts for all subjects and year groups in a school will yield a figure which is less than the number of teachers in the school. Full-time equivalent pupils and teachers are therefore defined in terms of the time involved in activities.

It will be noticed that this definition of full-time equivalent teachers, like the teacher-periods in Appendix XI, assumes that one teacher teaches a pupil group. This is not strictly the position in the schools as more than one teacher, particularly in school-college collaboration classes, sometimes teach the same group at once. However, this does not occur systematically and is therefore difficult to determine, even by the schools themselves. Thus, according to a school co-ordinator: 'Yes we operate team teaching ... but it depends .. I cannot give you the actual detail ... it is undertaken when the need arises'. Again, particularly in some integrated courses, pupils sometimes move between groups and teachers, depending on the areas in which they have chosen to complete their modular assignments. Using the definitions given above, the full-time equivalent pupils and teachers for the TVEI subjects of the schools are as summarised in Tables 12a-d below.

The figures in Tables 12a-d will now be used as a baseline to examine the resource implications of the allocative choices of the schools in terms of the impact of TVEI in the schools, the balance (equity) in the allocation of resources, economy in the use of resources, and the pressure (load) on teachers.

8.3.1 The Impact of TVEI in the Schools

It has been noted that the number of pupils involved in an initiative is indicative of its impact in a particular school. However, absolute ('raw') pupil numbers do not reflect the true picture since some subjects are in the core, while others are in the option. Similarly, pupils undertake both TVEI and non-TVEI subjects. For these reasons, it is considered that the Fte-P,

Table 12a

Teacher Utilisation: Full-Time Equivalent Pupils and Teachers
Big-City School

Subject	Fte-P		Fte-T		Fte-P/Fte-T (PTR)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
Guidance	13.7	13.15	0.55	0.55	24.91	23.91
Leisure	27.4	26.3	2	2	13.7	13.15
Design	27.4	26.3	1.5	1.5	18.27	17.53
Humanities	27.4	26.3	1.1	1.1	24.91	23.91
Science	27.4	26.3	1.3	1.3	21.08	20.23
Option						
Bus Studies	10	9.6	0.4	0.4	25	24
Info Tech	-	3.6	-	0.2	-	18
Totals	133.3	131.55	6.85	7.05		

Table 12b

Teacher Utilisation: Full-Time Equivalent Pupils and Teachers
Small-City School

Subject	Fte-P		Fte-T		Fte-P/Fte-T (PTR)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
Guidance	5.75	6.65	0.2	0.3	28.75	22.17
Leisure	11.5	13.3	0.6	0.6	19.17	22.17
Info Tech	5.75	13.3	0.2	0.6	28.75	22.17
Design	11.5	13.3	0.5	0.6	23	22.17
Humanities	11.5	13.3	0.5	0.6	23	22.17
Science	11.5	13.3	0.5	0.6	23	22.17
Option						
Bus Studies	4	3.3	0.1	0.1	40	33
Info Tech	3	-	0.2	-	15	-
Totals	64.5	76.45	2.8	3.4		

Table 12c

**Teacher Utilization: Full-Time Equivalent Pupils and Teachers
Big-Town School**

Subject	Fte-P		Fte-T		Fte-P/Fte-T (PTR)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
PSE	14	13.9	0.75	0.8	18.67	17.38
Option						
Bus Studies I	4.8	4	0.2	0.2	24	20
Bus Studies II	7.5	8.2	0.4	0.4	18.75	20.5
Design Tech	1.9	1.7	0.2	0.2	9.5	8.5
Food Studies	1.1	1.6	0.1	0.2	11	8
Media Studies	1.5	1.6	0.1	0.1	15	16
Totals	30.8	31	1.75	1.9		

Table 12d

**Teacher Utilisation: Full-Time Equivalent Pupils and Teachers
Small-Town School**

Subject	Fte-P		Fte-T		Fte-P/Fte-T (PTR)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
ILP	16.4	22.2	1	1.34	16.4	16.57
Science	16.4	5.6	1	0.34	16.4	16.47
Design Tech	5.54	5.6	0.47	0.41	11.79	13.66
Media St	5.54	5.6	0.47	0.41	11.79	13.66
Totals	43.88	39	2.94	2.5		

which takes account of such duplications and differences in weightings, are more appropriate.

The impact of the TVEI in the schools can be assessed by relating the total Fte-Ps for these TVEI subjects to the number of pupils in the relevant year (4th and 5th) year groups. Thus, relative to the number of pupils in the 4th and 5th years given in Table 11, the proportions of pupils involved in TVEI subjects are as in Table 13.

Table 13

**The Impact of TVEI:
Proportion of Pupils Involved in TVEI Subjects**

School	Pupils			Teachers*	
	Year 4	Year 5	Both	Year 4	Year 5
Big-City	48.7%	50.0%	49.3%	8.1%	8.3%
Small-City	56.1%	58.8%	56.8%	5.2%	6.3%
Big-Town	11.0%	11.2%	11.1%	1.7%	1.8%
Small-Town	53.5%	47.0%	50.2%	8.4%	7.1%

* The percentages for teachers are based on the 85, 54, 103 and 35 teachers in Big-City, Small-City, Big-Town and Small-Town Schools respectively.

On the basis of this analysis, Table 13 indicates that, in terms of pupil involvement, the impact of TVEI is highest in Small-City School and lowest in Big-Town School. The figures are consistent with the analysis on opportunities available for pupils to participate in TVEI and highlights the role of the core and optional status of subjects in determining the impact of an initiative in schools.

With respect to teachers, a combination of the percentages for the 4th and 5th years in Table 13 indicates that Big-City School has the highest proportion of teachers (16.4%) involved in TVEI subjects. In descending order, the other schools are Small-Town

(15.5%), Small-City (11.5%) and Big-Town (3.5%). However, the involvement of teachers in TVEI activities relates more to the balance in the allocation of teachers, and the economic use of resources (treated below) than to impact. Consequently, as will be elaborated in chapter 10, impact has been defined in terms of pupil (rather than both pupil and teacher) involvement in TVEI activities.

8.3.2 Balance (Equity) in the Utilisation of Resources

The Fte-Ps and Fte-Ts can be combined to produce an equity measure relative to the allocation of teachers to subjects. This can be done by converting the figure for the various subjects to percentages of their totals, given in Tables 12a-d. Since the Fte-Ps and Fte-Ts represent the equivalent of pupils and teachers involved in the various TVEI subjects, their totals represent the the equivalent of pupils and teachers involved in all the TVEI subjects. The percentages of the Fte-Ps and Fte-Ts for the various subjects, on the corresponding totals therefore represent the proportion of pupils and teachers engaged in the subjects, relative to all the pupils and teachers engaged in all the TVEI subjects. By dividing the percentages of Fte-Ps for various subjects by the corresponding percentages of Fte-Ts, an equity measure, herein called the **relative pupil-teacher ratios (R-PTR)**, is obtained. In relation to the schools, and from Tables 12a-d, this is as shown in Tables 14a-d below.

Dennison (1984) was cited in chapter 2 as pointing out that the number of pupils involved in an activity should be combined with teacher-periods when examining teachers' work loads. For the same reason, the relative pupil-teacher ratio (R-PTR) is a useful measure of teacher utilisation and teacher load because, unlike

Table 14a

**Equity in Teacher Utilisation: Relative Pupil-Teacher Ratio
(R-PTR) Big-City School**

Subject	%Fte-P (A)		%Fte-T (B)		Relative PTR (A/B)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
Guidance	10.28	10	8.03	7.8	1.28	1.28
Leisure	20.56	20.03	29.2	28.37	0.7	0.71
Design	20.56	20.03	21.9	21.28	0.94	0.94
Humanities	20.56	20.03	16.1	15.6	1.28	1.28
Science	20.56	20.03	18.98	18.44	1.08	1.09
Option						
Bus Studies	7.5	7.3	5.84	5.67	1.28	1.29
Info Tech	-	2.74	-	2.84	-	0.96
Total	100	100	100	100		

Table 14b

**Equity in Teacher Utilisation: Relative Pupil-Teacher Ratio
(R-PTR) Small-City School**

Subject	%Fte-P (A)		%Fte-T (B)		Relative PTR (A/B)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
Guidance	8.91	8.7	7.14	8.82	1.25	0.99
Leisure	17.83	17.4	21.43	17.65	0.83	0.99
Info Tech	8.91	17.4	7.14	17.65	1.25	0.99
Design	17.83	17.4	17.86	17.65	1	0.99
Humanities	17.83	17.4	17.86	17.65	1	0.99
Science	17.83	17.4	17.86	17.65	1	0.99
Option						
Bus Studies	6.2	4.32	3.57	2.94	1.74	1.47
Info Tech	4.65	-	7.14	-	0.65	-
Total	100	100	100	100		

Table 14c

**Equity in Teacher Utilisation: Relative Pupil-Teacher Ratio
(R-PTR) Big-Town School**

Subject	%Fte-P (A)		%Fte-T (B)		Relative PTR (A/B)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
PSE	45.45	44.84	46.86	42.11	0.97	1.06
Option						
Bus Studies I	15.59	12.9	11.43	10.53	1.36	1.23
Bus Studies II	24.35	26.45	22.86	21.05	1.07	1.26
Design Tech	6.17	5.48	11.43	10.53	0.54	0.52
Food Studies	3.57	5.16	5.71	10.53	0.63	0.49
Media Studies	4.87	5.16	5.71	5.26	0.85	0.98
Total	100	100	100	100		

Table 14d

**Equity in Teacher Utilisation: Relative Pupil-Teacher Ratio
(R-PTR) Small-Town School**

Subject	%Fte-P (A)		%Fte-T (B)		Relative PTR (A/B)	
	Yr 4	Yr 5	Yr 4	Yr 5	Yr 4	Yr 5
Core						
ILP	37.37	56.92	34.01	53.6	1.1	1.06
Science	37.37	14.36	34.01	13.6	1.1	1.06
Design Tech	12.63	14.36	15.99	16.4	0.79	0.88
Media St	12.63	14.36	15.99	16.4	0.79	0.88
Total	100	100	100	100		

teacher-periods which do not take account of actual pupil numbers, it takes account of both pupil and group numbers as well as teacher periods.

Since the Fte-P and Fte-T for a subject give the number of pupils and teachers involved in it relative to all the pupils in a year group and all the teachers teaching the year group respectively, the R-PTR gives an indication of the degree to which pupil involvement is matched by teacher allocation and, therefore, the degree to which teachers are equitably allocated. In this respect, a perfect match will yield an R-PTR of 1. Thus, an R-PTRs less than 1 indicates that more teachers have been allocated to a subject relative to the pupils undertaking it; while an R-PTR more than 1 indicates less teacher allocation. For example, in Big-City School, Table 14a indicates that Leisure (R-PTR = 0.7) and Business Studies (0.77) have the highest relative teacher allocation, while Guidance and Humanities, with an R-PTR of 1.28 have the lowest. Similarly, IT (0.96), Design (0.94) and Science (1.09) are closest to the equity level of 1. In Small-City School, Business Studies, with an R-PTR of 1.74 for the 4th year and 1.47 for the 5th year, has the lowest relative teacher allocation, while the 4th year optional IT (0.65) has the highest. The relatively low teacher allocation for Business Studies in the school reflects the shortage of teachers in the area, as reported by the co-ordinator.

In general, a comparison of the figures (Tables 14a-d) for all the schools shows that Business Studies in Small-City School has the lowest relative teacher allocation while the 5th year Food studies (0.49) and Design Technology (0.52) in Big-Town School have the highest. Also, a comparison of Tables 14a-d indicates that Small-City School, followed by Small-Town School, have

achieved the highest level of equity in the allocation of teachers. This is evidenced by the fact that all the 5th year and most of the 4th year core subjects in Small-City School have R-PTRs of 1 or almost 1 (0.99). Similarly, the range of R-PTRs (0.79-1.1) in Small-Town School is closer to the equity level of 1 than those of Big-City and Big-Town Schools. In terms of equity or balance based on this analysis, the allocation of teachers can be argued to be more equitably allocated in Small-City and Small-Town Schools than in Big-City and Big-Town Schools.

That the two schools with R-PTRs closest to 1 represent the small case study schools in each LEA is not significant since school size (number of pupil) is taken account of in the calculation of the R-PTR. The significant factor is group size since the calculation of Fte-Ps and Fte-Ts, on which the R-PTR is based, normalises time/period allocation to subjects.

The equity measure applies to the allocation of teachers as well as to the allocation of other resources. For example, the degree to which equipment was equitably allocated to subjects can be examined by comparing the figures and/or percentages for the allocation of equipment (Appendix XIII) to various subjects. For instance, although TVEI equipment is not restricted to only 4th and 5th year pupils, the figures for Big-Town School (Appendix XIIIc) indicate wide variations between subjects. Thus, dividing the figures for Business Studies, Design Technology, Food Studies and Media Studies in the school by the combined number of 4th and 5th year pupils undertaking them will give:

Business Studies	£ 47.3 per pupil	£ 8.1 per pupil
Design Technology	253.9 " "	39.4 " "
Food Studies	-	53 " "
Media Studies	200.4 " "	56 " "

On the basis of the number of pupils undertaking the subjects, these figures show that Design Technology and Media Studies had disproportionate equipment allocations per pupil relative Business Studies, particularly in 1987/88. However, pupil numbers are not the only indicators of need; and this highlights a point which is relevant to the concept of programmes underpinning this research. Thus, the apparent discrepancy between the equipment allocation to subjects in Big-Town School rather than reflecting lack of equity (based on the pupils involved), reflects the fact that different subjects make different resource demands which are not influenced by pupil numbers only. It was noted in the previous chapter that, in terms of pupil groups, TVEI programmes of the schools were largely homogeneous. In other words, the programmes do not have subprogrammes based on the heterogeneity of the 'for whom' component. However, in terms of subject structures, some integrated subjects have produced heterogeneous programmes. This can be illustrated with Business Studies in Big-Town School, and the Integrated Learning Programme (ILP) in Small-Town School.

Although two Business Studies subjects were offered in Big-Town School, the subjects are homogeneous in the sense that they do not make different or special demands on resources. As a result, the two business studies subjects were not treated differently in the allocation of resources (Appendix XIIIc). By contrast, ILP was made up of elements from subjects with different resource demands. This was evidenced by the different allocations for the

different elements of the course as reflected in Appendix IIIId. This discrimination between the components of the course has an important resource management implication in that it emphasises the need for educational planners and managers to take account of the structure of subjects and the resource implications of their various elements in educational planning and the allocation of resources.

The approach also enhances the justification of requests for, and allocation of resources. For example, the ILP in Small-Town School has almost half (46.9%) of the total TVEI equipment allocation in the school in 1988/89 (Appendix XIIIId). If a lump sum had been allocated without a breakdown which reflects the components of the course, the allocation may be seen by some as being partial in favour of the course. With the breakdown, however, the allocation is better justified through making resource needs (component allocations) more explicit. The programme framework is therefore not only relevant to planning, implementation and evaluation in education, but also useful to both resource seekers and resource allocators.

8.3.3 Economy in the Use of Resources

Economy in the use of resources was examined in relation to changes made to the organisation and/or delivery of the curriculum by the schools. In Big-City School, for example, the transfer of IT from a taught (and separated) subject to a cross-curricular activity released the equivalent of 0.2 full-time (equivalent) teacher or 8 periods in a 40 period week. If other outcomes such as pupil achievement are not affected, then the decision clearly has implications for the economic use of teachers and other resources.

In Small-Town School, the integrated science course, up to September 1989, was allocated 2 periods out of the 30 operational in the school. In addition, pupils were required to select either Biology, Chemistry or Physics as an option with an allocation of 3 periods. From September 1989, as reflected in the 4th year figure (Table 10d), the optional science subjects were phased out but the period allocation to the integrated Science course was doubled to 6. The decision meant that the total periods allocated to science had effectively been increased from 5 to 6. Translating the figures for 5th year Science into Fte-T using the 5 groups operational in the school will produce an Fte-T of 0.83 using 5 periods (out of 30), and an Fte-T of 1 with 6 periods. This indicates that the changes made in the school with respect to Science in September 1989 meant the commitment of an extra 0.17 (full-time equivalent) teacher to the area. The decision does not, therefore, enhance the economic use of resources. However, the situation would have released the same amount of full-time equivalent teacher if 4, instead of 6, periods had been allocated to the area after the changes. This example emphasises the importance and effect of time/period allocation and group size/number on teacher utilisation and, therefore, teacher load. It also indicates that where other factors (eg pupil differentiation and achievement) are not affected, economy will be enhanced by integrating subjects, placing them in the core, and allocating them periods which are less than the aggregate allocation to the component parts offered separately.

8.3.4 Teacher Load and Pressure on Teachers

The contact and non-contact time of teachers are typically used as measures in relation to teachers' work loads. Thus, the

contact ratio (CR) is usually calculated for individual teachers by finding the proportion of the total curriculum (timetabled) time which they spend on teaching. However, while it is quite easy to calculate the CR, it will be noticed that teachers teach different subjects, classes and year groups. In a study of an aspect of the total curriculum such as the TVEI, therefore, a measure that isolates relevant activities and year groups will be more useful. This is largely the purpose of Fte-Ts and R-PTRs.

As earlier indicated, for the whole curriculum and the whole school, an aggregation of the Fte-Ts for all subjects and year groups in a school will yield a figure less than the total number of teachers in the school. The difference represents the equivalent of full-time teachers available for administrative and other non-contact duties. The knowledge of such figures will help educational planners and school managers to know the balance between the contact and non-contact time of teachers and to allocate both more rationally.

In relation to an aspect of the curriculum, in this case the TVEI, an aggregate of the Fte-Ts for TVEI subjects and courses represents the full-time equivalent teachers devoted to teaching those subjects. By implication, it also represents the pressure on teachers since the more teachers are involved in those activities, the less time will be available, overall, for non-teaching functions or teaching other subjects, and vice versa. This means that Fte-Ts can be used to examine the 'pressure' on teachers.

For example, using the core TVEI subjects which are undertaken by all pupils, Tables 10a and 12a show that, for the 4th year in Big-City School, 6.45 full-time equivalent teachers were

committed to 45% of the total (40 periods) curriculum time of the fourth year. Similarly, the figures for the other schools are:

Small-City: 2.5 Fte-T committed to 50% of curriculum time.
Big-Town: 0.75 Fte-T committed to 5% of curriculum time.
Small-Town: 2.94 Fte-T committed to 53.3% of curriculum time.

Relating these figures to the total (40 periods or 100%) curriculum time of the year group, will produce the following figures which can be regarded as the 'index of teacher utilisation' for the 4th year TVEI core subjects.

Big-City School: 14.3 full-time equivalent teachers
Small-City School: 5 full-time equivalent teachers .
Big-Town school: 15 full-time equivalent teachers
Small-Town school: 5.5 full-time equivalent teachers

Since the figures relate to one year group, they can be extrapolated to the whole school by multiplying the above figures by seven for the 11-18 school (Big-Town) and by five for 11-16 schools (others):

Big-City school: 71.5 or 84.1% of the 85 teachers in the school
Small-City School: 25 or 46.3% of the 54 teachers in the school
Big-Town school: 105 or 101.9% of the 103 teachers in the school
Small-Town school: 27.5 or 78.6% of the 35 teachers in the school

From these figures, it can be seen that based on the core TVEI curricular patterns of the schools, teachers in Small-City School (46.3%) will have the least pressure, while those in Big-Town School (101.9%) will have the highest. Indeed, the analysis suggests that teachers in Big-Town School, including the headteacher, will have no time available for non-teaching functions. Since the calculation of Fte-T normalises period allocation to subjects, this rather unusual situation highlights the effect of group size. Thus a group size of 23.3 (12 groups) instead of 18.7 (15 groups) for the PSE on which was the calculation for the school was based, would have yielded 84 or 81% of the 103 teachers in the school. It has to be pointed out that this analysis is approximate since it is based on one year group, and on core subjects only. However, the analysis the

emphasises the importance of group size in relation to allocative choices made in schools.

8.4 Summary

This chapter will now be concluded by summarising the implications of the outcomes of the organisation and delivery of TVEI programmes in the schools for resource management.

It has been noted that the relative allocation of periods to subjects has both management and resource implications. Thus, it not only reflects the priority placed on different subjects, but also affects teachers' work load, in terms of teacher-periods. The evidence from the schools indicates that the most common time allocation to subjects is four periods (in a 40 period week) or 10% of curriculum time, with the determining factor being accreditation, in this case, GCSE.

When combined with the core and option systems and the disciplinary orientation of subjects, the evidence from the schools indicates that the patterns of period allocation give an indication of curriculum balance, as well as the opportunity available to pupils to participate in TVEI activities. In this context, there were variations between the schools, with the City schools generally exhibiting greater curriculum balance and offering more opportunities for pupils to be involved in TVEI activities than the Town schools. This was mainly due to the fact that, in addition to having more designated TVEI subjects, the City schools, more than the Town schools, not only included subjects relating to a variety of disciplines in their TVEI curricula, but also allocated to them an adequate number of periods (mainly the typical 10% of curriculum time) relative to other subjects. In addition, by providing the subjects mainly as

core rather than optional activities, they ensured that pupil involvement was not dependent on pupils' choices.

Apart from the number of periods allocated to subjects, resource utilisation is affected by the number of pupils involved and the number of pupil groups in particular subjects. While the core and optional classification of subjects affect pupil numbers, the number of pupil groups is determined by the group size. The evidence from the schools shows that four factors - the disciplinary focus of a subject, resource availability, the age or year group of pupils and the core and optional status of subjects - influence group size, with the first three being more significant than the last.

The analysis of impact, economy, equity and pressure on teachers, using Fte-Ps and Fte-Ts, highlights three factors - the number of pupils involved in subjects, the average group size and the number of periods allocated to the subject - as significant in influencing these performance criteria. This means that other factors which affect these three factors are also important in the distribution of resources in schools. In this context, the evidence from the schools indicates that such factors include:

Pupil Numbers - The core and option system, with core activities enhancing pupil participation more than optional activities.

Group Size - The age/year groups of pupils, the disciplinary focus of subjects resource availability and the core and option status of subjects.

Number of Periods - Accreditation/GCSE

The main findings and conclusions emerging from the analysis of the organisation and delivery of the TVEI curricular programmes of the schools is summarised in Table 15 below.

Table 15

The Organisation and Delivery of the Programmes: Key Findings

Performance Criteria	Relevant Variables	Remarks
Curriculum Breadth Balance	- Disciplinary Focus of Subjects - Periods Allocated	Variety of Disciplines; Equitable Distribution of Periods
Impact (Pupil and Teacher Involvement)	- Number & Variety of Activities on Offer - Core-Option System	Enhanced by: Many and Varied Subjects; More Core than Options
Economic Use of Resources	- Core-Option System - Group Size - Separated and Integrated Subject Structure	More Core than Options Enhanced by Larger Sizes Depends on Period Allocated - Allocation to Integrated Course Less than Aggregate Allocation to its Components Offered Separately
Equity/Balance	- Group Size	Perfect Match Obtained by: - Equalising Group Size
Pressure/Load on Teachers	- As in Economic Use of Resources Above	As in Economic Use of Resources Above

CHAPTER 9

The TVEI Management Process: Implications for Resource Management

In the previous two chapters, the organisation and delivery of TVEI programmes and their resource implications in the schools were considered. As indicated at the beginning of chapter 7, those programmes relate to curricular and cross-curricular activities. This chapter therefore examines the curriculum support and administrative aspects of TVEI management in the LEAs and schools.

The chapter comprises three parts: management structures, decision processes and outcomes. Management structures relate to the structures that have resulted from TVEI. Similarly, processes will be concerned with roles and relationships resulting from the implementation of TVEI in the schools and will examine issues in three main areas: resource allocation, curriculum and staff development (curriculum support), and monitoring and evaluation of performance. Finally, the implications of the processes in the schools will be examined in terms of changing structures and roles, and the cost (direct and indirect) implications of decisions. The entire analysis will be linked to the curriculum programme structures of the schools discussed in chapters 7 and 8.

9.1 The TVEI Management Structures of the Schools

Traditionally, the headteacher is the chief executive of a school and is supported by deputy headteachers with specific responsibilities. At the time of the investigation, the two City schools each had three deputy heads with responsibility for administration, curriculum and pastoral matters. Similarly,

Big-Town School had two deputy heads who were responsible for administration and curriculum/pastoral matters respectively. Small-Town School had one deputy head who was responsible for both curriculum and administration, while pastoral matters were the responsibility of year heads. As noted in chapter 6, an outstanding position that resulted from the introduction of TVEI in the schools was that of school co-ordinators. Although a TA TVEI requirement, the position was focal in the management of the Initiative in the schools. It should be noted that these roles of headteachers, deputy headteachers and school co-ordinators relate to school-wide activities. In relation to the TVEI programme structures discussed in chapter 7, therefore, what management structures have emerged in the schools?

Three of the school co-ordinators indicated that the departmental (subject-based) administrative structure which was prevalent in their schools before TVEI was being reorganised into new and larger units following the integration of subjects and the collaborative teaching approaches adopted in the implementation of the Initiative. The exception was Big-Town School where, as will be recalled, all TVEI subjects, with the exception of PSE, were provided as separate subjects. Between schools, the emphasis on consortium and inter-institutional collaboration enhanced inter-school links generally, although there were variations between the out-of-school roles of key participants.

The links between the larger administrative units referred to by the co-ordinators, and the programme structures of the schools, are the integration of curricular activities and the increased emphasis on cross-curricular activities. Thus, the integration of curricular activities meant that, for the schools concerned, administrative units were no longer seen only in terms of

subjects (departments), but also in terms of disciplines, or what the co-ordinator of Big-City School called 'faculties'. While the schools referred to the heads of traditional subjects as 'heads of department', the heads of the new 'faculty' structures were known as 'co-ordinators'. Similarly, the greater emphasis placed on such cross-curricular activities as guidance, RoA and residential and work experiences through greater pupil involvement and explicit inclusion in the TVEI guidelines, led to the appointment of 'co-ordinators' for these activities in all the schools, whether or not they were provided separately or by integration.

In terms of the TVEI curricular programmes described in chapter 7, the administrative arrangements in the schools can be summarised as in Tables 16a-c.

The two City schools have an identical management structure (Table 16a) primarily because, as indicated in chapter 6, the LEA adopted a common curriculum model for all its TVEI pilot schools. As will be elaborated shortly, although some TVEI subjects in Small-Town School were not integrated at the time of the investigation, the school co-ordinator pointed out that they had ceased to use the terms 'department' and 'head of department' since the inception of TVEI in the school. Instead, for administrative purposes, subjects were grouped into areas, according to disciplines (eg creative studies, humanities, languages and science), and 'co-ordinators' were appointed to head them. An examination of Tables 14a-c shows that departmental units largely correspond with separated subjects and other curricular activities, and 'faculty' units with integrated courses.

Table 16a

The TVEI Management Structure: Big-City and Small-City Schools

Administrative Unit	Programme	Person Responsible
Department	Business Studies	Head of Department
	Guidance	"
	Information Technology	"
	Leisure	"
Activity	Records of Achievement	Co-ordinator
	Residential Experience	"
	Work Experience	"
Faculty	Design	Co-ordinator
	Integrated Science	"
	Integrated Humanities	"
School-Wide	TVEI	Co-ordinator
	Administration	Deputy Headteacher
	Curriculum	"
	Pastoral	"
	Overall	Headteacher

Table 16b

The TVEI Management Structure: Big-Town School

Administrative Unit	Programme	Person Responsible
Department	Business Studies	Head of Department
	Design Technology	"
	Food Studies	"
	Media Studies	"
	PSE	"
Activity	Information Technology	Co-ordinator
	Records of Achievement	"
	Residential Experience	"
	Work Experience	"
School-Wide	TVEI/Administration	Deputy Headteacher
	Curriculum/Pastoral	"
	Overall	Headteacher

Table 16a

The TVEI Management Structure: Small-Town School

Administrative Unit	Programme	Person Responsible
Activity	Records of Achievement	Co-ordinator
	Residential Experience	"
	Work Experience	"
Faculty	Int Learning Prog	" (overall)
	- Business Studies	"
	- Community Studies	"
	- Guidance	"
	- Info Technology	"
	Creative Studies	" (overall)
	- Design Technology	"
	- Media Studies	"
	Science	Co-ordinator
	School-Wide	TVEI
Pastoral		Year Heads
Admin/Curriculum		Deputy Headteacher
Overall		Headteacher

It will be noticed that cross-curricular activities have been given a separate (activity) classification. This is mainly because, although cross-curricular activities were delivered by teams of teachers and co-ordinated by 'co-ordinators', they did not have administrative bases of their own. As indicated in chapter 7, they were either linked to various subjects and courses, or, for funding purposes, to 'school administration'. This, apart from their being described as 'bolt-ons', also illustrates the lack of full integration of these activities into the overall provisions of the schools and their lower status relative to curricular programmes.

Organisationally and administratively, therefore, activities in the schools can be classified into three levels, with each comprising a set of activities as in Table 17.

Table 17

The Management Structure Emerging from TVEI in the Schools

Admin Unit	Description	Activity/Set of Activities	Person Responsible
First Level			
Department	Subjects/	Separated Subject	Head of Department
Activity	Cross-Curricular & Curricular	Separated Cross-Curricular Elements of Integrated Courses (Curr & X-Curr)	Co-ordinator Co-ordinator
Second Level			
Area/Faculty	Discipline/ Gp of Subjects	Integrated Courses	Co-ordinator
Third Level			
School-Wide	General/Non-Disciplinary	TVEI Administration Curriculum Pastoral Overall	Co-ordinator Deputy Head " " Headteacher

Apart from individuals, the management structures of the schools also included some management groups. One of them is the Senior Management Team (SMT) which is the highest decision making body in the each of the schools. Senior management teams consisted of six members in each of the schools as follows:

Big-City School: The headteacher, three deputy heads, the TVEI co-ordinator and a Senior Teacher (co-ordinator for Science).

Small-City School: As above but the Senior Teacher was the co-ordinator for Humanities.

Big-Town School: The headteacher, two deputy heads (one was also the TVEI co-ordinator), the co-rdinator for PSE, and two heads of department (Technology and History).

Small-Town School: The headteacher, a deputy head, and four area co-ordinators: Humanities (also the TVEI co-ordinator), Creative Studies, Science and Special Needs/Learning Support.

In addition to the SMT, the schools also had committees of heads of department and area co-ordinators, and committees of year heads.

In terms of status, all the school co-ordinators were from head of department or senior teacher (E allowance) cadre and above and, as can be seen from above, were members of the Senior Management Teams of their respective schools. Indeed, the latter point suggests that in administrative terms, the position is rated higher than that of a head of department. This is reflected by the fact that the co-ordinator of Small-City School was not an SMT member before her appointment but automatically became one following her appointment. The effect of the status of co-ordinators and other functionaries in school management in general and TVEI management in particular, will be taken up later in this and the next chapters.

In all the case study schools, the overall co-ordinators (heads) of the new faculty structures were heads of one of the subjects within the areas. In Small-Town School, for example, the TVEI co-ordinator was also co-ordinator for humanities and used to be the head of history department. However, other activity co-ordinators, particularly the cross-curricular ones, were not necessarily of head of department status: some were higher and others lower. For example, the school TVEI co-ordinator in Big-Town School at the time of the investigation was a deputy headteacher who was also responsible for administration. He took on the responsibility following the appointment of the original co-ordinator to the LEA as assistant project co-ordinator in April 1989. Again, the co-ordinators of records of achievement in Big-City and Guidance in Small-City School were deputy headteachers, while the co-ordinators of work experience in all the schools were ordinary teachers who were either interested in taking on the responsibility, or were felt to be capable of doing so.

As can be seen from the management structures outlined above, school and, indeed, TVEI management involved not just the school co-ordinator, but also many other individuals and groups. This brings us to the issue of processes in terms of roles, responsibilities and relationships. As indicated at the beginning of this chapter, this will be done by examining the approaches which the schools have adopted for allocating resources, undertaking curriculum and staff development, and carrying out monitoring and evaluation.

9.2 Management Processes: Roles, Responsibilities and Relationships

9.2.1 Approaches to the Allocation of Resources

Allocation Procedure: As indicated in chapter 6, City LEA was allocated £2m for the TVEI pilot to cover a period of four years, while Town LEA was allocated £1m to cover three years. The LEAs received funds from the Training Agency, and schools from the LEA, according to uniform budget headings, pre-determined by the Agency. The headings are:

- Staff salaries
- Staff development
- Capital equipment
- Premises
- Consumables
- Student costs/Residential
- Miscellaneous costs (eg evaluation)

In both LEAs, the schools received funds for all the headings at the early stages of the Initiative but as implementation progressed, money was not provided for some headings. For example, at the time of the investigation in the 1989/90 academic year, funding was available for only staffing, staff development, consumables and student residential. Decisions about the levels of allocation for individual schools were taken at meetings of the project and school co-ordinators while schools made their own allocations. However, the TA required that once amounts were decided for each heading, schools were to spend broadly according to those levels. Specifically, schools could vire from equipment into staffing and staff development but not vice versa. Also, all single purchases above £500 were to receive the prior approval of the Agency.

The Context of TVEI Allocation: Allocations from LEAs to schools as well as allocations within schools were, as is usual with normal running costs, made in April on a financial year basis.

Consequently, the first issue examined in relation to resource allocation was whether the schools had separate allocations for TVEI and 'Capitation' or normal running costs.

In this respect, all the co-ordinators indicated that TVEI allocations were made separately at the early stages of the Initiative but were integrated with Capitation as its implementation progressed. However, they pointed out that when TVEI resources were allocated separately, such allocations were taken into account in the allocation of normal running costs. Two common reasons were given for initially allocating TVEI resources separately: compliance with TA requirements on accounting and the fact that only a few activities were designated as TVEI specific at that stage. The co-ordinators noted that as the Initiative progressed and cross-curricular activities spread, almost all curriculum areas became involved in TVEI developments, making separate TVEI allocations difficult. At the same time, they pointed out that TVEI funding, as already noted, was stopped for some budget headings (eg equipment) as the Implementation of the Initiative progressed (see Appendix XIII).

Asked how they monitored expenditure on TVEI after the merger of both TVEI and Capitation funds, the co-ordinators pointed out that the integration of the funds did not mean that TVEI developments were no longer identifiable. They indicated that after the integration of both funds, resource needs over and above the normal running costs of various subjects and areas were justified on the basis of developments which were relevant to the philosophy of TVEI. Thus the justification of TVEI resource needs in the schools comprised two phases. In the first phase, when separate TVEI allocations were made, resource needs were

based on new activities and the potential number of pupils to be involved. After the merger, resource requirements were linked to developmental rather than new activities. Such activities, called 'enhancements' in City and 'targets' in Town LEA, usually enhanced existing TVEI provisions by providing new emphasis and/or direction. These relate to the 'new' and 'enhanced' TVEI activities discussed in chapter 5, and include IT across the curriculum, modularisation in new areas, RoA, equal opportunities, and residential and work experiences.

Allocation Centres: In accordance with the departmental and faculty structures, allocation centres consisted of either subjects or curriculum areas (see Tables 16a-c). Apart from Small-Town School, the other schools used a combination of both, with the balance between the two largely corresponding with the extent to which subjects are separated or integrated. Thus, Big-Town School, with a dominance of separated subjects, allocated resources mainly by subjects. At the other end was Small-Town School where, as already indicated, only the faculty structure was in operation. There, school allocations were made by disciplines rather than by subjects.

Because 'faculties' comprise several subject areas, and because components of integrated subjects were also taught as options in some schools, allocations made on the basis of curriculum areas (faculties) were, if necessary, further allocated within them. This implies an acknowledgement of the fact that different components of an integrated course, or different subjects within a discipline can, and do make different resource demands. It also explains why integrated courses (particularly in Small-Town School) have overall co-ordinators as well as co-ordinators for the component areas. Thus, the co-ordinators of the component

areas were usually those more knowledgeable in the various areas, and who can better contribute to the determination of resource needs in the areas. In resource terms, these indications are consistent with the notion of heterogeneous 'what' components of programmes.

Staff Involvement in the Allocation Process: Heads of department and area co-ordinators interviewed indicated that their resource needs were determined in consultation with staff in their respective departments/areas. However, the process was mainly informal with heads of department consulting individually and in small groups with teachers in their departments and area co-ordinators doing the same with heads of subjects within their areas. The responses of those interviewed suggest that formal discussions were minimal. This is evidenced by the nature of the responses of those interviewed; for example, 'I consult with my colleagues', 'I discuss with other teachers in the department', and 'I ask everybody what they need'. One area co-ordinator suggested that the initiative came from others by saying: 'Colleagues usually come to me with their requirements which I compile and forward'. Further evidence of the informal nature of decision processes was reflected by the fact that seven heads of department and/or area co-ordinators had specifically indicated that the processes of consultation and discussion were 'largely informal'.

Departmental and area resource requirements were forwarded to the SMT where final approvals and allocations were made. However, before the requirements got to the SMT, an intermediate process of consultation took place between the school co-ordinator on the one hand, and heads of department and area co-ordinators on the other. The evidence suggests that this intermediate process was

also informal in nature. Thus, while some heads of department and area co-ordinators indicated that they consulted with the school co-ordinator, others did not. Furthermore, an analysis of the responses showed that whereas those heads of department and area co-ordinators who were members of their respective SMTs said that the SMT had ultimate responsibility for resource allocation, others, mainly non SMT members, attributed final allocations to either the headteacher or the school co-ordinator only.

The allocation process at the SMT level was also largely informal. In terms of frequency and procedure, SMT meetings of the schools were neither regularly nor systematically scheduled. When asked how many times in a year they had SMT meetings specifically designated for the allocation of resources, three school co-ordinators said 'about once' or 'maybe one', while the fourth said: 'We meet when necessary but we do not have separate meetings for resource allocation'. The general indication from the schools was that resource allocation by the SMT included a 'to-ing' and 'fro-ing' process in which the school co-ordinator acted as an intermediary between the headteacher on the one hand, and heads of department and area co-ordinators on the other. Where necessary, the SMT only met after reasonable progress had been made and possible allocations outcomes determined.

The informal nature of the allocation process was further reflected in the communication of outcomes. All the co-ordinators indicated that they communicated allocation outcomes to the relevant heads of department and area co-ordinators. However, they more frequently did so orally than in writing. They also pointed out that heads of department and area co-ordinators, in any case, usually knew what to expect after the series of informal discussions that preceded actual

allocations. From the foregoing, it is reasonable to conclude that although many teachers were apparently involved in the allocation process, few people were involved in the actual allocation. From the evidence, these were mainly members of the senior management team, with the headteachers and school co-ordinators playing dominant roles.

Criteria for Allocation: Capitation was allocated on a formula basis, with allocations being made on the basis of pupil numbers and a weighting factor in which subjects are weighted along a teaching-practical dimension. This meant that craft courses (eg design and technology) were rated higher than humanities subjects (eg history and geography). The use of formulae in the allocation of capitation was evidenced in all the case study schools, although the relative weights given to pupil numbers and different year groups, or the relative weights to different subjects differed between schools. However, these were matters of detail which were not included in the research, the primary aim being to determine whether or not formulae (in whatever forms) were used. In relation to the use of formulae in the allocation of capitation by all the schools, a finding of this study is that schools exhibit similarities in more ways than would be the case, given the theoretical differences between schools in terms of norms, values, objectives, management styles and individual and group preferences.

After the integration of TVEI and Capitation funds, allocations were made in the schools on a two-tier basis. First, a proportion of the combined funds was allocated to departments and areas as running costs using the criteria for allocating Capitation. Secondly, the remainder was allocated as development

costs on the basis of approved targets. As one area co-ordinator in Small-Town School put it:

Each area has a basic allocation each year to keep courses running. This basic stock is automatic. Development bids are then put in by various areas ... This is not automatic ... how much you get depends on your submission and the outcome of negotiations at the SMT meeting (Area Co-ordinator, Small-Town School).

Unlike the allocation of Capitation in which objective criteria (pupil numbers and different weightings for different subjects) were used, the methods for allocating resources in the TVEI in the schools were essentially subjective. As evidenced by the quotes that follow, the general indication given by those interviewed was one of discussion, reliance on the understanding and goodwill of those concerned, and the use of professional judgement to make allocative decisions. According to the co-ordinator of Big-City School:

The weightings used for (allocating) Capitation are not used here (TVEI). We now base allocations on agreed needs. We consider several factors: new courses, population, the extent to which equipment will be involved and resources already available ... we discuss these issues ... but we do not use any formula ... we make use of professional judgement (Big-City School Co-ordinator).

The co-ordinator of Small-City school indicated:

We sit down and look at Capitation money, look at TVEI money, look at any extra fund that can be generated and sum then up ... We ask people for their proposals. From what people say it becomes obvious what everybody should get because everybody knows what is available and roughly what the normal running costs are (Small-City School Co-ordinator).

According to the co-ordinator for Big-Town school:

The (Capitation) method was not particularly suitable for allocating TVEI resources because TVEI addresses specific issues which need to be taken into account. Capitation considers pupil number ... (but in TVEI) once we agree on an activity, we have to finance it whether it involves one or 100 pupils (Big-Town School Co-ordinator).

And the co-ordinator of Small-Town school said:

Previously it was, say, science you got fifteen hundred quid last year so you get fifteen hundred quid this year. Now, we say to the science area: What courses do you run? When do

you run them? What do you need to run them? What developments do you want to make? What do you need to be viable? We do the same for other areas and then make allocations ... after discussions (Small-Town School Co-ordinator).

These quotes indicate that, unlike capitation, TVEI allocations were not based on formulae in both LEAs. Although formulae embody elements of subjectivity (eg in the fixing of weightings), it is obvious that TVEI allocations in the schools are implicitly subjective, with a bargaining and negotiating mechanism built into it.

9.2.2 Curriculum Support: Curriculum and Staff Development

As indicated at several points in the discussion in chapter 7, a number of TVEI developments and the approaches adopted by the schools for organising and delivering their programmes necessarily made demands for curriculum and staff development. Such developments and approaches include the provision of new and enhanced curricular activities, the integration and modularisation of subjects and courses, and the teaching of some subjects by teachers who were not initially trained in them. Curriculum and staff developments cannot be dissociated from each other because a great deal of staff development activities are geared towards curriculum development. Besides, the development of new programmes invariably has implications for staff development for their effective delivery. Curriculum and staff developments were examined in terms of their nature and the relative roles of the LEA and schools in their provision, the areas that benefited, and the related issue of supply teachers.

Nature of the Developments and Roles of LEAs and Schools:

According to documentation and interview responses from the LEAs and schools, the strategies for curriculum and staff development

in both LEAs included the secondment of teachers to universities and polytechnics as well as LEA and school-based in-service training for teachers (INSET). An analysis of data from the LEAs indicates that the activities were largely LEA-based and that, although schools were involved in considerable curriculum and staff development efforts at the early stages of the TVEI pilot, the momentum decreased substantially as its implementation progressed. Further, the relative roles of the LEA and schools in the delivery of the activities were influenced largely by the form/nature of the developments (eg secondments versus school-based) and the strategies adopted for their delivery.

Curriculum and staff development in the form of short (up to three months) and long (up to a year) secondments were undertaken in City LEA, particularly at the early stages of the Initiative. Before then, the schools in the LEA had also been involved in TVEI-related in-service training for teachers (TRIST). The situation was similar in Town LEA except that, according to the project co-ordinator, the longest period of TVEI secondment in the LEA was six months. In addition to secondments, other LEA and school-based activities were organised in the LEAs and schools. The strategies for these forms of curriculum and staff development included meetings within and between schools, lectures, seminars and workshops.

An issue which all the project and school co-ordinators emphasised in relation to staff development, and which they regarded as an asset, is the fact that they had been involved in TRIST prior to their commencement of TVEI. Thus, the Town LEA, in their revised TVEI proposal (Nov. 1987), noted:

The Authority in considering the in-service training it will provide ... can, rather wryly, claim to be at an advantage in being a late-comer in proposing a TVEI scheme. The Authority

now has experience of staff development for YTS, CPVE, NPRA and TRIST programmes (Town LEA Revised TVEI Proposal, Nov 1987, p. 24).

This, and similar remarks, emphasise the importance of the experience of a past initiative in the successful implementation of a current initiative.

Probably because the past (TRIST) programme was LEA-based, TVEI curriculum and staff development in both LEAs was largely LEA-based. However, as already noted, the relatively greater LEA (than school) involvement in these activities is attributable to the forms which they took and the approaches adopted for delivering them. Thus, the emphasis on secondments more than school-based programmes meant that the developments were planned and delivered centrally, rather than by individual institutions. Similarly, with respect to approach, City LEA established nine curriculum development groups at the inception of TVEI while Town LEA set up seven groups. In both LEAs, the groups were centrally (LEA) based and comprised representatives of relevant curriculum areas from each of the participating institutions. Each group was headed by an appropriate LEA Adviser, with the project and school co-ordinators, and advisory teachers in support (City LEA Revised TVEI Proposal, Nov 1986, p. 40; Town LEA Revised TVEI Proposal, Nov 1987, p. 23).

In relation to the involvement of individuals from schools, because curriculum and staff developments were largely LEA-based, school TVEI co-ordinators played a major role in the planning and delivery of these activities. Similarly, unlike the determination and organisation of curricular programmes where both LEAs adopted different approaches, their approach with respect to curriculum and staff development was similar. Thus,

whereas in the former City LEA adopted a joint (TVEI consortium) approach, while Town LEA adopted a more autonomous (institutional) approach, both LEAs adopted a centralised approach in the latter.

Areas that Benefited: The nine curriculum development groups in City LEA were in the areas of Business Studies, Design, Economic Awareness, Guidance, Humanities, IT, Mathematics, Science and Technology and RoA/Assessment. For Town LEA, the seven groups were in the areas of Business Studies, Community Studies, Design Technology, Food Studies, Health/Leisure Studies, IT and Media Studies. Although very little data was available on staff development, particularly in the Town LEA and schools, the areas that benefited from staff development were similar to the curriculum development areas given above. For example, in City LEA where some data was available, teachers from TVEI schools were involved in all the three 'waves' (as it is referred to in the LEA) of secondments in the 1986/87 and 1987/88 sessions (see Appendix XI). Also, the first wave consisted of five teachers from each of the participating schools in the areas of Design, Guidance, IT, Science and Technology and Records of Achievement.

In general, curriculum and staff development efforts relating to TVEI in the schools were difficult to isolate. This was primarily because, in addition to TRIST, the schools had benefited from both TVEI-specific and the LEAs' own secondment and other staff development programmes. For example, the 'wave' of secondments in City LEA (Appendix XII) was sponsored through the LEA's own staff development initiative. However, an examination of the curriculum and staff development areas listed above shows that they largely correspond with the designated TVEI curricular and cross-curricular programmes of the schools

identified in chapter 7. Another factor which made staff development difficult to assess was that, in all the schools, there was a lack of relevant data on staff development and supply teachers.

Teacher Cover and the Management of Disruptions: A response by the headteacher of Small-Town School aptly introduces the issue of supply teachers and the disruptions that staff development causes to normal classroom and school activities. According to the headteacher:

There was one particular staff development programme in which about half of our staff were away in three batches for residential course on the management of change as an issue in TVEI ... three batches of twenty; that is sixty places in the LEA. We got about 50% of the allocation because not many schools were interested as it cut across teaching time. Staff development causes disruptions (but) I am prepared to have disruptions in order to have my staff well prepared for the future ... not the same in some schools ... such schools want the cash and resources but, also, for business to be as usual - no disruptions (Small-Town School Headteacher).

This remark is as much about school (and headteacher) commitment to centrally provided staff development programmes as about the problems of staff development and their management. An important issue in the management of disruptions concerns the provision of teachers to cover those who are away on curriculum and/or staff development.

Two approaches were adopted by the schools in relation to teacher cover. The first involved the appointment of supply teachers from outside the school and, on the basis of interview responses, was utilised more in the City than in the Town schools. The second approach involved the use of teachers on the ground, or as the co-ordinator for Small-Town School put it, 'buying staff time'. In addition to contingency measures, a strategy commonly adopted in Big-City, Big-Town and Small-Town Schools involved the

timetabling of more teachers than pupil groups in particular areas. Such areas included Design and Leisure in Big-City, PSE and Media Studies in Big-Town and ILP, Design Technology and Media Studies in Small-Town School. As will be discussed shortly under the outcomes of decision processes, both the use of external and internal cover, and 'double staffing' (timetabling more teachers than pupil groups) have their merits and demerits.

9.2.3 Monitoring and Evaluation

School resource management processes cannot be completely assessed without an examination of the mechanisms through which they monitor and evaluate their performance. While the level of commitment to evaluation and the nature of the process are indicative of the extent to which the LEAs and schools have adopted rational or political approaches (treated in the next chapter), the immediate issue is about how evaluation was done in the schools.

Apart from the early stages (the first two years) of TVEI, when both LEAs used TVEI funding to appoint external, independent evaluators in accordance with TA TVEI guidelines, no separate formal evaluation mechanisms existed in the LEAs. However, both LEAs acknowledged that monitoring and evaluation are important management issues in schools generally and the TVEI in particular. Thus, besides responding to the series of interim reports compiled by the external evaluators, documentation from both LEAs indicates that greater participation in the evaluation process was an objective of the LEAs. For example, the City LEA TVEI Annual Report (1989, p. 10) indicates that 'the TVEI pilot is committed to a more participative style of evaluation ... (which) encourages teachers to become involved in the evaluation

of their work'. Similarly, the Town LEA Annual Report (1988, p. 10) indicates that 'the evaluation process should be internalised at all levels ... from management operations down to classroom practice should be included'. The documents also show that the TVEI co-ordinators' group was regarded as having an important evaluation function in both LEAs. Thus, City LEA indicates that 'monitoring arrangements have been conducted by the TVEI Co-ordinators Group' (TVEI Annual Report 1989, p, 10), while Town LEA states that training and support is given to 'TVEI Co-ordinators who are the source of much data and (who) carry out internal evaluation projects' (TVEI Annual Report 1988, p. 10).

The general indication given by documentation and interview responses from the LEAs, therefore, is that, apart from initial external evaluation, the system of co-ordination at both LEA and school levels was the major evaluation mechanism. Within schools, the evidence indicates that heads of department and other curriculum areas played a dominant role with respect to the evaluation of their areas. However, monitoring and evaluation in the case study schools was characterised by two common features: dearth of relevant statistics and the use of largely subjective evaluation methods.

Mention was earlier made of the lack of relevant data on staff development and supply teachers. The situation was similar with respect to information on pupil numbers and groups by subject and other activity areas, as well as previous allocations by resources and/or activities. For example, the City schools had information on pupil groupings by subjects as well as some data on the allocation of equipment and consumables for the first four years of TVEI pilot. In addition, Big-City (but not Small-City) School had some data on residential experience and teacher cover

for the first three years of TVEI. Similarly, as can be seen from Appendix XIII, data on the allocation of equipment in the Town schools were both segmented and incomplete. However, Big-Town School had a comprehensive computerised data base on pupils: names and numbers, groupings by subjects and individual pupil programmes. By contrast, these data were neither systematic nor comprehensive in Small-Town School.

A common response to questions on statistical data had been: 'I am not sure we have that' or 'I think you can get that from the LEA (TVEI unit)'. A response by the co-ordinator of Small-Town School appears to sum up the situation in the schools. In response to a question on monitoring, he had indicated:

We do not have the kind of data you are talking about. We can do statistical analysis if required ... I can generate information on number of computers, students' 4th and 5th year experiences and the like ... but that will be purely administrative and not for monitoring the performance of areas. We do not ask the kinds of questions people in the civil service ask; for example, what percentage of time is spent on Business Studies in a week?

The above quote, together with the position in the schools with respect to relevant statistics, indicate that the key monitoring information requirement in the schools is more subjective than the 'hard' data implied by the examples on statistical data given above. Thus, the professional judgement of heads of department and area co-ordinators was considered paramount and sufficient. Words and phrases used in relation to monitoring and evaluation by those interviewed include 'trust', 'integrity', 'professional judgement' and 'responsible people'. For instance, in relation to resource utilisation, the co-ordinator of Big-City School indicated:

There is a tighter accounting system in the TVEI than in Capitation. But I don't structure everybody's orders ... a lot is done on trust. Heads of department know what they need ... as heads of department, they are responsible people

and paid to be responsible. It is expected that they are spending in a responsible manner ... they have got to manage their departments ... if they don't buy what they need, things will fall apart (Big-City School Co-ordinator).

The evidence from the schools therefore indicates that school co-ordinators and heads of department and curriculum areas played a major role in the monitoring and evaluation of performance, with the monitoring information being largely based on professional judgement and not strictly required to be compiled and updated in the form of statistics.

9.3 The Implications of the TVEI Management Processes in the Schools

This section examines the implications of the decision processes of the schools described above. As indicated in chapter 3, this will be done by addressing the issues in terms of changing structures and roles, the basis (criteria) of the decisions made, and the cost (both direct and indirect) of those decisions.

9.3.1 Changing Structures and Roles

It was earlier noted that the emphasis on consortium and inter-institutional collaboration had enhanced inter-school links generally, although there were variations between the out-of-school roles of key participants. This suggests that school processes need to be examined in terms of both within and across institutional roles and relationships. As earlier noted, there had been a move, in all the schools, to broaden the departmental (subject-based) administrative arrangements to include larger units in which subjects within a discipline are grouped together. This thrust had also led to an increased need for co-ordination and area co-ordinators, in addition to heads of department. Three major factors were cited by those interviewed

as contributing to this trend: the introduction of integrated and modular subject structures and integrative delivery approaches, the thrust towards greater cross-curricular, process-based and collaborative delivery approaches, and the increased pupil involvement in cross-curricular developments. As can be seen, these factors correspond with the TVEI developments relating to the organisation and delivery of programmes discussed in the previous two chapters.

While the thrust towards a faculty structure may reduce the overall number of responsibility posts in a school (since administrative units will become larger), the factors that brought about the move have, as noted in chapter 7, also resulted in greater co-ordination and other administrative duties for teachers generally than before the TVEI. Thus, more co-ordination and other administrative duties were needed to develop and deliver new and enhanced programmes. Furthermore, more co-ordination aimed at normalising teaching and assessment standards was needed in those areas where both specialist and non-specialist teachers were involved in delivering the same subjects. In addition, clerical and liaison duties were needed in the organisation and delivery of such cross-curricular activities as residential and work experiences.

As opposed to responsibility posts, a point which was stressed in all the schools was that the greater demand for co-ordination and other administrative responsibilities had led to greater staff involvement in the determination of what goes on in schools. Although offering differing reasons, those interviewed generally agreed that there had been a greater degree of staff involvement in internal decision making since the introduction of TVEI. A factor which was consistently stressed in the TVEI annual reports

of City LEA as encouraging greater staff involvement, and which was supported by the co-ordinators of both City Schools, is the modular organisation of subjects and courses. According to the LEA's TVEI Annual Report (1986):

The adoption of a modular approach ... is firmly rooted in the active involvement of grassroot teachers. In general, a bottom-up approach to curriculum development will be used, based on a process of building from first principles: identifying the grounds to be covered, the skills and abilities that have to be acquired and the essential experiences that students should undergo (City LEA TVEI Annual Report, 1986, p. 3).

While modular organisation was being emphasised in the City schools as helping to enhance greater staff involvement, other factors were stressed in the Town schools. In Big-Town School, the emphasis was on the development of cross-curricular activities which the co-ordinator said had helped to create common ground between different departments. In Small-Town School, two rather different factors were highlighted. The first, advanced by the headteacher, is related to school size. According to him:

Everybody in the school is involved (in TVEI) ... in a way which I think we are at an advantage here, being a small school. The TVEI has generated a whole new range of activities and roles for teachers. The task is enormous in every school and even more in small ones. In anycase, there is nowhere for people to hide in a small school (Small-Town School Headteacher).

This observation highlights two main issues. The first is that school activities are so many that everybody needs to be fully involved. The second is that, given the opportunity, some people will want to avoid involvement in school activities (McGregor theory X!). Convincing as the argument may sound, it is also clear that there is a distinction between having enough roles to go round but distributing them to a few people, and recognising

the need to create the right atmosphere and to distribute roles to more people which the above quote seems to address.

The second factor which was highlighted in Small-Town School in relation to staff involvement concerns the enlargement of administrative units discussed above. The situation was summed up rather forcefully by the co-ordinator who noted:

Gone are the days when there is a head of department who issues instructions to other members of the department. We no longer have that hierarchical structure ... the ordinary teachers now decide on what goes on in their areas ... call it collegial decision making if you like (Small-Town School Co-ordinator).

These remarks relate to the issue of top-down and bottom-up or centre-periphery and periphery-centre forms of decision making. The responses indicate a move towards greater staff involvement in decision making, and towards more bottom-up and lateral management approaches. However, the move has not been without difficulties. As the co-ordinator of Big-City School noted in relation to curriculum and management changes in the school generally: 'There are times when we ask you to move if you don't want to'. Similarly, the co-ordinator of Big-Town School said: 'Sometimes it is not a case of asking you to contribute to the TVEI but of implementing our (senior management) set out plans'.

It is significant that the factors emphasised by the schools as contributing to greater staff involvement in decision making - the modularisation of subjects, cross-curricular activities and enlarged (faculty) administrative units - were reflected in most of the schools. This suggests that structural arrangements (eg department-faculty) and the nature (eg cross-curricular) and organisation (eg modularisation) of activities influenced decision processes in the schools. Similarly, the different emphases of the schools, apparently, reflects the degree of

priority given to, and the role of the various factors, in TVEI implementation in the schools. Thus, it is significant that the schools have cited those issues in which they have had substantial experience. In this context, it will be recalled that the modularisation of subjects was earlier noted to have started in the City schools much earlier than in the Town schools. Also, Big-Town School, apparently, cited cross-curricular activities in which it had substantial experience since the introduction of TVEI, but not the 'faculty' structure which was not reflected in the school (Table 16b). Similarly, it has also been noted that Small-Town school phased out the departmental structure from the introduction of TVEI in the school; hence, the citing of the faculty structure by the co-ordinator.

While greater within-school staff involvement was claimed by those interviewed, documentation and interview responses from both the LEA and school levels indicate that the headteachers and the co-ordinators were the school functionaries with the greatest out-of-school TVEI roles in all the schools. The headteachers' responsibilities stemmed largely from their membership of the projects' management committees which brought together all heads of participating schools, the project co-ordinator and, sometimes, LEA Officers and Advisers to discuss TVEI curriculum and other policy matters. Similarly, the co-ordinators' out-of-school responsibilities resulted mainly from their membership of the projects' planning and implementation committees which comprised project and institutional co-ordinators. In City LEA, the committee met every week for the first three years of TVEI but this was changed to fortnightly from September 1989. In Town LEA, the committee met every two

weeks until September 1989 when it began to meet every month. In both LEAs, the meetings of heads of institutions were less frequent than those of co-ordinators. By virtue of this fact, and the fact that the co-ordinators were responsible for TVEI statistics, it is reasonable to argue that, in TVEI matters, especially those relating to the flow of information from the LEA, the co-ordinator was more knowledgeable than every other person in a school. When this is combined with the fact that the co-ordinators have responsibility for the overall day-to-day administration of TVEI in their respective schools, it can be seen that they had a more comprehensive picture of TVEI in their schools than any other staff, including the headteacher.

In terms of direct resource (cost) implications, the increased demands made on teachers for administration implies a shift in the balance away from teaching towards administrative responsibilities. Most of those responsible for such cross-curricular activities as residential and work experience indicated that they performed their liaising and administrative duties outside the school day. This invariably, stemmed from the fact that the school day is necessarily limited. The fact that, despite the extra (TVEI) staffing allocations, some functions were performed after normal school hours indicates that the situation has implications for staffing levels. Beyond the TVEI, therefore, the increased demand for administration can be met either by the appointment of extra teachers in order to keep existing teaching arrangements stable, or by restructuring tasks and reorganising pupils and teachers. Of course the economic and, sometimes, political implications of obtaining extra teachers are obvious.

A second implication of the schools' decision processes concerns the status of post holders. Apart from the fact that school co-ordinators, as earlier noted, had a senior management status, an allowance was also attached to the post. The evidence from the schools suggests that the decision to appoint co-ordinators from mainly senior teachers had both direct and indirect costs. The direct cost was economic and resulted from the allowances paid to the co-ordinators. The indirect costs, as evidenced in the schools, had three strands. The first strand was highlighted by the co-ordinator of records of achievement in Big-City School who was also a deputy headteacher. The co-ordinator had felt that the role would have been better performed by a less senior person. According to her, because she is also a deputy head, teachers tended to see her as 'an appraiser rather than as a colleague and co-ordinator of an activity'. This situation is related to the status of co-ordinators and other post holders, and to what might be termed role suitability. Its management cost is that it might result in compliance rather than consensus, reducing the roles of ordinary teachers from those of active contributors to those of passive receivers.

The second strand was also related to the status of post holders. As earlier indicated, apart from the co-ordinator of Big-City School, the other (school and area) co-ordinators performed their roles as secondary duties: they all taught, and some were heads of department while others were deputy heads. Although they did not feel that the role affected their other responsibilities, they all complained of too many activities but too little time in which to do them. This implies a situation of role overload which, in management terms, can result in inefficiency.

The third strand concerns the relationship between responsibility, motivation and reward. It was found that the formalisation of functions has the effect of making teachers equate responsibility with allowance, thereby influencing their willingness to take up responsibilities. This situation was manifested in Big-Town School. It was earlier noted that the co-ordinator of the school at the time of the investigation was a deputy headteacher, as the former co-ordinator had left some months earlier for the LEA TVEI office. According to the deputy headteacher, the co-ordination of TVEI was added to his responsibilities after no teacher agreed to take up the job. He indicated that teachers were not interested because the allowance attached to the post was due to be terminated in a year's time when the TVEI pilot would end. On the basis of the ground on which the teachers refused to accept the job, it can be argued that the situation arose because teachers had been conditioned to equate responsibility with reward. The teachers would therefore be worried that, if they accepted the offer, they might be stuck with the responsibility even after the allowance was withdrawn. This is not a case of delegation without power or reward, but a case of reward as a necessary condition for delegation. The example indicates that while incentives are necessary to initiate and sustain motivation and commitment, management approaches that do not institutionalise rewards by emphasising the intrinsic rather than the extrinsic aspects of responsibilities need to be devised and adopted.

9.3.2 Basis of Decision Making: Approaches to Resource Allocation

It has been noted that, unlike Capitation, TVEI resources were not allocated within schools through the use of formulae, and

that decision processes were largely informal. The largely informal nature of the allocation process stemmed, in part, from practical considerations.

Although not specifically indicated in other schools, the co-ordinator of Big-City School gave an indication which is relevant to this conclusion. He indicated that in their first year of TVEI, the process of determining subject and area needs had been 'quite elaborate'. He said that each subject and area had involved almost everybody in generating their resource requirements which were later discussed in a large committee of all areas. He noted that the approach did not 'work' because the mass of information produced was too large for any meaningful decision to be made from it. According to him, 'the system involved a lot of useless paper work and waste of valuable time'. He said that the system was dropped because submissions from subjects and areas were out of proportion with the reality of what was available for allocation, saying:

Final allocations did not reflect estimates and so did not justify the time and effort put into producing them. The system also led to some equipment redundancies (Big-City School Co-ordinator).

This highlights an apparent disjuncture between theory and practice by illustrating some of the problems posed by reality on the adoption of large group participation in decision making. A more direct effect of the informal nature of the allocation process is that it makes the process less explicit to organisational members, and analysis more difficult for both school managers and independent researchers. Thus, as earlier indicated, some teachers attributed resource allocation to either the headteacher or the TVEI co-ordinators while others (mainly SMT members) attributed it to the SMT. Again, because the

situation is not quite clear, participants had different expectations and responded in different ways. Thus, while a head of department had indicated: 'I am not too sure what the system of allocation is ... but I am told what I have', an area co-ordinator felt that 'the louder you shout, the more you get'.

With respect to the allocation of TVEI staffing allowance, it has been noted that the schools used part of their extra (TVEI) teacher allocations to provide internal cover for staff and other development activities. In City LEA, TVEI staffing funds were used to finance three posts: the school co-ordinator, the head of IT, and a main professional grade teacher for Business Studies. Since the TVEI duties of these teachers would normally be less than their full load, the extra time was used in other areas and for other activities, including teaching, administration and cover. The situation was different in Town LEA. At the inception of TVEI, an allowance was made to each participating school for the appointment of an additional teacher. Small-Town School, for example, appointed a teacher in business studies which was being newly introduced. In addition to a teacher for each school, staff allocations were made to schools in the LEA on a yearly basis. In the 1989/90 session when the investigation took place, Big-Town School was allocated the equivalent of 1.65 teachers while Small-Town School was allocated the equivalent 1.2 teachers. These allowances were then spread to several areas in the Town schools. This, according to the co-ordinators, enabled the schools to allow activity co-ordinators and other teachers to undertake specific aspects of organisation in their areas and allowed for double staffing of teaching groups and reduction in group size. Although data on the distribution of the allowances

over the TVEI pilot was not available, the allocation of the 1.65 teacher allowance in Big-Town school in 1989/90 was as follows:

Co-ordination	0.2 full-time equivalent teacher
Business Studies	0.2
Design Technology	0.2
Food Studies	0.25
Media Studies	0.2
Personal and Social Education	0.2
Records of Achievement	0.1
Residential	0.1
Work Experience	0.1
Economic Awareness	0.1
Toal	1.65

It will be noted that the 0.2 equivalent teacher allocated to most subjects represents 8 periods in a 40 period week. The limited use of TVEI staffing allowance in City schools was acknowledged by the co-ordinators who said that, in retrospect, they felt that the decision was a mistake. Because the situation is related to the common model adopted in the LEA, the decision also highlights an effect of centralised decision making, which is that its consequences are more far-reaching than those of decentralised decisions because more areas and/or people are affected.

On the basis of the remarks made by the co-ordinators of the City schools that their decision to limit TVEI staffing allocations to a few areas was a mistake, and the fact that the approach adopted in the Town schools is more flexible in that the allowance is not tied to a few activities, it can be concluded that the approach of spreading teacher allocations is more efficient. The approach

therefore provides more room regarding how the allocations can be utilised.

All the school co-ordinators agreed that the use of external supply, while useful and sometimes inevitable, presented some problems. For example, they pointed out that such teachers were sometimes not available when needed. They also cited the question of some time lag for those thus appointed to be fully adjusted. Furthermore, the City LEA Annual Report (1987, p. 37) indicates that 'there is some concern that the allocation of cover ... tends to reduce the commitment of other staff'.

However, the approach has its merits. For example, the co-ordinator of Big-City School said that it motivates pupils.

According to him:

Pupils sometimes take delight in new faces ... and everybody has some special ideas ... therefore new teachers mean new ideas (Co-ordinator Big-City School).

The schools co-ordinators contended that in addition to addressing the problem of adjustment associated with external cover, the use of internal cover and the timetabling of extra teachers helped to reduce group size in needed areas and served as a curriculum and staff development strategy. As the co-ordinator of Small-Town School put it: 'When teachers participate in the teaching of other and unfamiliar subjects, they learn new skills (and) that is what school-based INSET is all about'. Similarly, in the 1989/90 'Statement of Intent' of Big-Town School, it is noted that:

Double staffing of teaching groups facilitates team teaching and enables staff to familiarise themselves with equipment and cope with teaching as non-subject specialists ... to ensure that knowledge of the course is not confined to a few members of staff (in Big-Town School's Statement of Intent, 1989/90).

The usefulness of internal cover and the positive effect of double staffing as illustrated above are quite clear and obvious. However, when examined in the context of education in general rather than the TVEI pilot specifically, they could have other resource implications. For example, as earlier indicated, internal cover generally and double staffing in particular was achieved by the schools primarily through the use of TVEI funding to appoint additional teachers. A limitation of the approach therefore rests on the fact that its successful adoption depends on the availability of extra resources. In fact, the approach was more successful in the Town schools because they distributed the extra time to more areas and individuals than the City schools.

A second limitation of internal cover is that where double staffing arrangements are made in expectation of some teachers going away on staff development, the services of the extra teachers will be wasted if the staff development does not proceed as envisaged. It can therefore be seen that both internal and external cover arrangements have implications for flexibility and economy in the use of resources. Everything depends on the context and the accuracy to which schools can forecast the sequence of activities.

9.4 Conclusion

One of main findings that emerged from this chapter is that the organisation and delivery of curricular activities, discussed in the previous chapters, substantially influenced the management structures and roles and relationships within the schools. Thus the move towards 'faculty' arrangements resulted from the development of integrated courses. Similarly, the greater demand

for co-ordination and co-ordinators stemmed from the greater emphasis given to cross-curricular activities as well as the thrust towards teaching across teachers' initial areas of specialisation.

Although administrative sub-units were enlarged, the number of administrative levels increased from two (departmental and school-wide) to four (activity, departmental, faculty and school-wide). However, there were variations between the schools in terms of the extent to which these administrative levels were reflected in them. Thus, while activity and school-wide arrangements were reflected in all the schools, the City schools also adopted both departmental and faculty arrangements while Big-Town School adopted the departmental structure, and Small-Town School the faculty structure.

The changes in administrative arrangements were also accompanied by the creation of new positions and roles. Thus, in addition to the school (TVEI) co-ordinator, other co-ordinators were appointed for the new activity and faculty sub-units. An important finding in relation to these positions was that the role occupants were mainly people with senior teacher status, a situation which was analysed to have both direct and indirect resource implications.

With respect to the approaches to the allocation of resources, all the schools made separate allocations for TVEI and Capitation at the early stages of the Initiative but later merged the two funds. Similarly, unlike Capitation which was allocated on a formula basis TVEI allocations were based on negotiations and the use of value judgement.

Staff development in the TVEI schemes of the schools was achieved largely through the secondment of teachers to universities and polytechnics. As a result, the activity was mainly LEA based. In general, staff development activities relating to TVEI were difficult to isolate for assessment for two major reasons. One was that staff development in both LEAs was jointly sponsored by TVEI and the LEAs' own resources; and the other was that there was a dearth of relevant data in all the schools. On teacher cover, two main approaches, the use of internal and external cover, were evidenced in the schools, with the City schools adopting mainly the former, and the Town schools the latter. Both approaches were found to have their merits as well as their demerits (Table 18).

Apart from the early stages of the TVEI when, in accordance with the national criteria on the pilot external evaluators were appointed by both LEAs (at the LEA level), no formal separate evaluation mechanism was evident in any of the schools. Responsibility for monitoring of performance was, in all the schools, left to relevant heads of department and co-ordinators of curriculum areas. This meant that the schools operated decentralised evaluation systems, with no formal central co-ordinating mechanisms. In addition, the monitoring information requirements of the schools were subjective in nature; hence, there was a scarcity of relevant statistics in all the schools.

According to interview responses, there had been a greater level of staff involvement in decision making since the introduction of TVEI. Although different schools emphasised different factors as contributing to this development, the factors stressed by various schools were also evident in the others. These are the emerging

Table 18

Summary of Findings on Decision Processes at the Schools

Issues/Situation in the Schools	Remarks
Management Structures	
'Activity'	- Reflected in all the schools
Department	- Reflected in the City and Big-Town Schools
Faculty	- Reflected in the City and Small-Town Schools
School-Wide	- Reflected in all the Schools

Key Positions

Headteacher	- Key positions mainly by senior teachers
Deputy Headteachers	- Has both direct and indirect cost implications
School Co-ordinator	
Area Co-ordinators	
Heads of Department	
Activity Co-ordinators	

Senior Management Team - The SMTs comprised six members in each of the school; Heads, deputy heads and School co-ordinators were members

Decision Making

Staff Involvement:

- Higher than Before - Influenced by the nature, structure and organisation of curricular activities
- Largely Informal - Reduced 'actual' number of decision makers
- TVEI - Led to different understandings and different expectations by participants

Teacher Cover:

- External - Mainly City School; May not be available when needed; Could entail adjustment problems; Quite flexible; motivating to pupils
- Internal - Mainly Town schools; Addresses problems associated with external; Depends on availability of extra teachers
- Double Staffing - Mainly in Town and Big-City Schools; Could have flexibility problems
- Depends on ability of schools to forecast sequence of activities

Criteria for Decisions:

- Formula (Objective) - Allocation of Capitation; All Schools
- Value Judgement (Subj) - TVEI allocations; All the schools
- Relevant Statistics - Nature and amount vary between schools
- Scarce in all the schools

faculty arrangements (and by implication the integration of courses), the modularisation of subjects and courses, and the greater emphasis on cross-curricular activities. This suggests that the nature, structure and organisation of activities influenced decision processes in the schools.

While those interviewed emphasised greater staff involvement in decision making, the evidence also indicates that the informal nature of the processes effectively reduced the level of 'actual' decision makers. In the case of the TVEI in the schools, these were mainly the headteachers and school co-ordinators. The informal nature of processes in the schools were further found to have led to different understandings of decision procedures and different expectations of decision outcomes by participants.

The main findings of the study relative to decision processes at the schools is summarised in Table 18 above.

Resource Allocation in Schools: An Interpretation

The decisions, processes and outcomes of TVEI implementation in the case study schools, together with their resource management implications, have been examined in the previous three chapters. The analysis will now be concluded by interpreting the various allocative choices made by the schools in terms of the rational and political perspectives described in chapter 3.

It was indicated at the end of chapter 6 that the LEAs not only had substantial scope for making their own choices in relation to the definition of TVEI, but actually utilised the opportunity. Nevertheless, based on the general interpretation of the TVEI by the LEAs and schools, a high degree of consistency and consensus was found to exist between the LEAs' and the TA's interpretations, as reflected by the Initiative's guidelines. The consistency stemmed from the high degree of similarity between the designated TVEI activities of schools in the LEAs and specific items contained in the Initiative's guidelines. Similarly, the consensus stemmed from the fact that most of those interviewed in the LEAs and schools indicated that the TVEI guidelines were largely consistent with their own objectives. In general terms, and in accordance with the concepts of consistency and consensus, this reflects the rational perspective since, without imposition, the definition of TVEI was quite similar at the three levels of the TVEI implementation staircase. However, the evidence used for this analysis in chapter 6 was mainly LEA based. The analysis will therefore be completed in this chapter with evidence from the schools.

It was noted in chapter 3 that the maximisation of organisation-wide goals is a major objective of the rational model. Similarly, the model requires that organisational decisions and processes should not favour particular individuals or groups. As a result, the rational model sees priorities in organisation-wide terms. By contrast, because the political model embodies an assumption of different needs and demands relative to organisational sub-units, the emphasis of the model is on sub-unit interests. In such a situation, the desire to succeed even at the expense of others is a possible objective of organisational members, making 'winners' and 'losers' a valid means of assessing organisational outcomes. However, as noted in chapter 3, the criterion of winners and losers is relevant to both the rational and political management models, though in different senses. Thus, while the rational model sees 'winners' in terms of priorities and their ranking, the political model does so in terms of gains and losses.

As indicated in chapter 3, the discussion in this chapter will take two forms. First, the allocative choices of the schools will be analysed to establish relative 'gains' and 'losses' and the individuals, groups and/or areas affected. Secondly, an attempt will be made to interpret the gains and losses. The first part of the analysis will establish the degree to which the allocative choices of the schools have produced winners and losers, and the second part will attempt to explain the rationale for the gains and losses. In this context, individuals as well as groups can gain or lose from the allocative choices of an organisation. Since pupils and teachers represent the main groups of people in schools, and since groups are normally formed around curriculum areas, potential 'winners' and 'losers' are

here defined in terms of pupils, teachers and curriculum areas. The chapter consists of two main sections with the first relating to the curriculum, and the second to administration.

10.1 Curriculum Organisation and Delivery Choices

In accordance with the programme framework adopted for this research, the discussion in this section will be structured around the components ('what', 'for whom' and 'how') of programmes, and based on the choices made by the schools in relation to the items outlined in the framework under these components (see Figure 2). This means that the discussion will start with the schools' choices relative to the 'what' component.

The TVEI Curricular Offerings of the Schools: The decision as to what should or should not be included in the curriculum potentially has both rational and political implications. As noted above, it concerns organisational priorities in rational terms, and sub-unit interest in political terms. In the context of this analysis, the relevant sub-units are defined by the TVEI activities of the schools and the disciplines to which they relate. From the data presented in chapter 7, three major disciplines were reflected in the TVEI programmes of the schools, with other activities being mainly non-disciplinary hence their classification under 'others' in Table 3. Although cross-curricular activities were included in Table 3, only subject-based activities which were reflected in the normal timetables of the schools will be considered here.

From Table 3, the disciplines and the subjects developed in them under TVEI in each of the schools were as follows:

- Creative Studies - Big-City School - Business Studies, Design and Information Technology (Year 5)
- Small-City School - Business Studies, Design and Information Technology
- Big-Town School - Business Studies I and II, Design Technology, Food Studies and Media Studies
- Small-Town School - Design Technology, Media Studies, and Business Studies and IT in ILP

- Humanities - Big-City School - Integrated Humanities
- Small-City School - Integrated Humanities

- Science - Big-City School - Integrated Science
- Small-City School - Integrated Science
- Small-Town School - Integrated Science

- Others - Big-City - Guidance and Leisure
- Small-City - Guidance and Leisure
- Big-Town - PSE/Guidance
- Small-Town - Community Studies and Guidance in ILP

The above outline can be summarised as in Table 19.

Table 19

Number of TVEI Subjects in Different Disciplines

	Big-City	Small-City	Big-Town	Small-Town
Creative Studies	3	3	4	2.5*
Humanities	1	1	0	0
Science	1	1	0	1
Others	2	2	1	0.5*
Totals	6	6	5	4

* The fractional subjects reflect the heterogeneous nature (in disciplinary terms) of elements of the ILP course

From Table 19, it can be seen that, in terms of the three main disciplines (creative studies, humanities and science), the two City schools had subjects in all the areas, while Small-Town Schools did so in two areas and Big-Town School in one area. The Table also shows that the emphasis in all the schools has been on the creative studies area. In terms of number of TVEI subjects, this suggests that, while the three major disciplines have benefited from TVEI implementation in the City schools, the creative studies area has benefited most. This is even more apparent in the Town schools, particularly Big-Town, where the

humanities discipline, and both the humanities and science disciplines are not selected in the TVEI curricula of Small-Town School and Big-Town Schools respectively. In terms of designated TVEI subjects, the creative studies area (and therefore the people in it) is a clear winners in the TVEI implementation in all the schools.

The issue, then, concerns why some disciplines have been emphasised more than others. This can be addressed by examining the choices of the schools relative to the objectives implicit in the TVEI policy.

As an educational initiative aimed at addressing a particular 'deficiency' in the school curriculum, the TVEI curricula of the schools were expected to reflect some changes relative to the situation before the Initiative. In this respect, it is significant that all the schools gave more emphasis to the creative studies/technology discipline. This emphasis therefore indicates that they considered subjects in the discipline to be more appropriate, than subjects in other disciplines, for meeting the vocational and technical education needs of pupils which the Initiative is about. From the standpoint of the schools, then, the emphasis was one of priority, based on their interpretations of the policy objectives of TVEI. From the perspective of sub-units, however, the emphasis can be seen in terms of gains and losses, particularly when considered in relation to the 'extra' resources involved. In this context, the decision to include the three major disciplines in the TVEI curricula of the City schools can be argued to be an attempt to reconcile the extrinsic demands implicit in the policy objectives of TVEI, with the intrinsic demands relating to the interests of various sub-units.

Curriculum Organisation and Delivery: The linkage between activities, pupils and resources begins with the organisation of curricular activities for the purpose of delivery. Consequently, both pupils and teachers (and other resources) are affected by the choices made in individual schools in this respect. The curricular organisation and delivery choices reflected in the schools will now be considered in relation to how they affect the educational needs of pupils and the utilisation of resources.

The Integration of Subjects and Allocation of Periods: From the standpoint of pupils, curricular activities are useful to the extent that they are broad, balanced, differentiated and relevant to their needs. Consequently, pupils stand to gain from any curriculum organisation option that enhances these criteria, and to lose from any option that hinders them. In this context, as can be seen from chapter 7, learning experiences in **integrated** subjects relate to knowledge, skills and attitudes from more than one traditional school subject. This implies that integrated courses enhance curriculum breadth, provided they are undertaken by all pupils. Thus curriculum breadth will not be enhanced by an integrated course that is undertaken by only a handful of pupils. This would explain why integrated courses in all the schools were provided as core activities and suggests that the decision was based on the educational objective relating to curriculum breadth.

From the perspective of teachers and other resources, the main significance of the integration of subjects relates to the economic use of resources which needs to be discussed in conjunction with the **allocation of time**. The criterion of accreditation adopted by the schools for allocating time to subject was quite explicit. However, in relation to the

integrated structuring of subjects, the allocation of periods has implications for curriculum balance, and economy in the use of resources.

This can be illustrated using the delivery of Guidance in the schools. In the two City schools, the activity was offered as a (separated) subject in its own right. In the Town schools, it was offered as part of PSE in Big-Town, and part of ILP in Small-Town School. From Table 4 (chapter 7), the PSE course has two main components, Social Education and Guidance, while the ILP course has four, Business Studies, Community Studies, Guidance and IT. Assuming these components were offered separately, and using 10% of curriculum time for GCSE activities, and 5% for non GCSE activities (the typical allocations reflected in the schools), the allocation of periods to the subjects would be as follows:

City Schools

- Expected Position: Guidance is a non GCSE subject, so the allocation will be 2 (5%) of the 40 periods operational in the schools
- Actual Position: As above

Big-Town School

- Expected Position: Both Social Education and Guidance are non GCSE activities, so both will be allocated 2 (10%) of the 20 periods operational in the school.
- Actual Position: Both are allocated one period or half the expected allocation.

Small-Town School

- Expected Position: Business Studies and Community Studies which lead to GCSE will both be allocated 6 (20%) periods while Guidance and IT which do not lead to GCSE will both be allocated 3 (10%) of the 30 periods operational in the school. This will give a total of 9 periods for all the activities.
- Actual Position: 6 periods (for all the activities) for the 4th year, and 8 for the 5th year. This gives a shortfall of 3 periods for the 4th year, and one for the 5th.

This variation between the schools in terms of the amount of time spent (or expected to be spent) on Guidance highlights two

major points. The first concerns the actual amount of time devoted to components of integrated subjects; and the second concerns the effect of this variation on curriculum balance (and the educational needs of pupils) on the one hand, and the economic use of resources (and pressure on teachers) on the other. In relation to the former, the variation between the schools, in relation to the time allocated to Guidance, stemmed from the fact that the activity was offered separately in the City schools, and as part of integrated courses in the Town schools. This example highlights the fact that integrated courses, generally, have the potential of making the time spent on particular elements difficult to determine. Thus, in the above example, it has been assumed that the time allocated to integrated subjects will be utilised equitably between the major elements of the subjects. In practice, however, this may not be the case. The consequence then, will be that curriculum balance will be hindered where a disproportionate amount of the time allocated to an integrated course is spent on some components of the subject. In such a situation, pupils' interests will be affected and, in terms of the terminology adopted here, they will be the losers. With respect to the economic use of resources, the example suggests that, in terms of the time spent on activities, the integrated approach makes less resource demands than the separated. This goes to support the assertion made in chapter 8 that, where other outcomes are not affected, it is useful to integrate subjects and allocate to them periods which are less than the aggregate allocation to their components offered separately.

Core and Option Status and Modularisation of Subjects: It was noted in earlier chapters that the core and option system is typically used to ensure that the curricular activities

undertaken by individual pupils are balanced. It was also noted in chapter 7 that curriculum balance could be affected where the subjects in the core are skewed towards particular disciplines. The issue of core and optional subjects was indirectly referred to in the TVEI guidelines which talk about participation by pupils being voluntary. At the same time, the fact that the guidelines also emphasised that the Initiative should be managed locally presupposes that LEAs and schools were free to make choices which they considered to be in their best interest.

Strictly applied, the criterion of voluntary participation by pupils meant that all TVEI subjects should be optional. In this context, Big-Town School appears to have met the requirement most and Small-Town School least. Indeed, as can be seen from chapter 7, all the TVEI subjects in Small-Town School were in the core. That these two apparently divergent choices were made in the same LEA is significant and highlights the effect of the common curriculum model adopted in City LEA. It suggests that the autonomous approach adopted in Town LEA was effectively utilised by schools and that, more than in City LEA, the schools' definition prevailed on whether TVEI subjects should be placed in the core or options.

In general, the fact that three of the four schools placed most of their TVEI courses in the core suggests that their decisions were dictated by school objectives, in terms of meeting the criterion of curriculum balance, rather than by the TVEI guideline on voluntary pupil participation. While this may reflect a lack of consensus between their objectives and the TVEI guidelines relating to voluntary pupil participation, of more importance to this analysis is the fact that the decision highlights an apparent conflict between policy and practice.

It was indicated in chapter 7 that, in conjunction with the integration of courses, the modularisation of subjects has redefined the concept of directed option from the choice of a subject from a discipline, to the choice of an element of a course within a discipline or group of disciplines. As a result, one implication of modularisation, is that it enables varying pupils' needs to be met in subjects placed in the core than would otherwise have been the case. While this provides a way of differentiating curricular activities relative to pupils' interests, it also has implications for both pupils and teachers. Specifically, the implications relate to the specialisation of teachers.

Across Specialisation Teaching: Based on the curriculum organisation choices of the schools, in particular the integration of subjects, the deployment of teachers to areas other than those for which they were initially specialised appears to be rational on economic grounds. The reason for this is that a shortage of teachers in a school could generally mean two things: a school-wide shortage, or a shortage in particular areas. Any approach that seeks to eliminate one or both of these conditions, therefore, is potentially rational. The decision by the schools to deploy teachers across specialisation boundaries addresses the second condition. The basis of this conclusion is strengthened when the decision is examined in relation to the integration of subjects. Without the approach, different teachers will be needed to teach different components of integrated courses to the same pupil groups. This would mean, for example, that an integrated course with four components might need four different teachers to the same group. This, in effect, would defeat the objective of integration in the first place.

The decision therefore enhances economy in the use of resources. In general, the decision reflects rationality while not enhancing political behaviour within the schools. Thus, by encouraging teachers to teach across different curriculum areas, they are being conditioned to see the school as a coherent unit rather than a collection of several sub-units. In other words, the approach has the potential for limiting the formation of interest groups, domains or territories which enhance the exercise of political behaviour.

A closer look at the practice in operation, however, indicates that it has implications for pupils' needs and interests, and teachers' work load. It was indicated in chapter 7 that pupils were asked to make three choices in relation to the areas in which they wished to complete their projects in specific modules. It was also noted there that an apparent discrepancy existed, in the approach, between those pupils offered their first choices and those offered their third. Thus, the interests of those offered their first choices would be better met than those offered their third. With respect to teachers, it was indicated that pupils were asked to make the three choices in order to avoid having some teachers in a team being overloaded while others were underloaded. In practice, however, the approach did not entirely achieve this objective. As one teacher who was involved in a subject in which this approach was adopted indicated:

That (avoiding over, and underloading) is supposed to be the objective ... but it (the approach) never works well ... it depends on the extent to which pupils are interested in an area. As you can see, they (pupils in his class) are almost twice those in other groups (CDT Teacher, Big-City School).

In terms of teacher load, this teacher appears to be a 'loser' relative to others in the team. This goes to emphasise the point

made in chapter 4 that rational intentions can create situations with political outcomes.

Pupil Group Sizes: It was found, in chapter 8, that group size was affected by the disciplinary orientation of subjects, the year group of pupils, the availability of resources and the core and option system. This means that, for a given year group and resource level, the disciplinary focus and the core and option status of subjects are significant variables affecting group size. Similarly, group size was highlighted as a factor affecting the impact of subjects, the economic use of resources, equity or balance in the distribution of resources, and load or pressure on teachers. As argued in chapter 8, Fte-Ps and Fte-Ts have been used to analyse the allocative choices of the schools relative to these performance measures because they take account of such variables as core and optional subjects and the fact that most teachers teach both TVEI and non-TVEI subjects. The analysis of these measures will now be briefly examined in relation to the choices made in the schools concerning the factors that affect group size.

Impact: As indicated in chapter 1, impact is here defined as the proportion of pupils involved in designated TVEI activities. Tables 20a-d show a grouping of the Fte-Ps and Fte-Ts in Tables 12a-d according to the main disciplines identified above. In terms of core and optional activities (Table 6), it can be seen from the figures in Tables 20a-d that core activities generally involved more pupils (in terms of Fte-Ps) than optional activities. This is as might be expected since core activities involve whole year groups.

Table 20a

**The Impact of Particular Subjects and Disciplines
Big-City School**

Discipline/ Subject	Fte-P			Fte-T		
	Yr 4	Yr 5	Both Yrs	Yr 4	Yr 5	Both Yrs
Creative Studies						
- Business Studies	10	9.6	19.6	0.4	0.4	0.8
- Design	27.4	26.3	53.7	1.5	1.5	3.0
- Info Tech	-	3.6	3.6	-	0.2	0.2
Sub Totals	37.4	39.5	76.9	1.9	2.1	4.0
Humanities						
- Int Humanities	27.4	26.3	53.7	1.1	1.1	2.2
Science						
- Int Science	27.4	26.3	53.7	1.3	1.3	2.6
Others						
- Guidance	13.7	13.15	26.85	0.55	0.55	1.1
- Leisure	27.4	26.3	53.7	2.0	2.0	4.0
Sub Totals	41.1	39.45	80.55	2.55	2.55	5.1
Grand Totals	133.3	131.55	264.85	6.85	7.05	13.9

Table 20b

The Impact of Particular Subjects and Disciplines
Small-City School

Discipline/ Subject	Fte-P			Fte-T		
	Yr 4	Yr 5	Both Yrs	Yr 4	Yr 5	Both Yrs
Creative Studies						
- Business Studies	4.0	3.3	7.3	0.1	0.1	0.2
- Design	11.5	13.3	24.8	0.5	0.6	1.1
- Info Tech*	8.75	13.3	22.05	0.4	0.6	1.0
Sub Totals	24.25	29.9	54.15	1.0	1.3	2.3
Humanities						
- Int Humanities	11.5	13.3	24.8	0.5	0.6	1.1
Science						
- Int Science	11.5	13.3	24.8	0.5	0.6	1.1
Others						
- Guidance	5.75	6.65	12.4	0.2	0.3	0.5
- Leisure	11.5	13.3	24.8	0.6	0.6	1.2
Sub Totals	17.25	19.95	37.2	0.8	0.9	1.7
Grand Total	64.5	76.45	140.95	2.8	3.4	6.2

* Figures for the core and optional IT are combined for Year 4.

Table 20a

The Impact of Particular Subjects and Disciplines
Big-Town School

Discipline/ Subject	Fte-P			Fte-T		
	Yr 4	Yr 5	Both Yrs	Yr 4	Yr 5	Both Yrs
Creative Studies						
- Business St*	12.3	12.2	24.5	0.6	0.6	0.2
- Design Tech	1.9	1.7	3.6	0.2	0.2	0.4
- Food Studies	1.1	1.6	2.7	0.1	0.2	0.3
- Media Studies	1.5	1.6	3.1	0.1	0.1	0.2
Sub Totals	16.8	17.1	33.9	1.0	1.1	2.1
Humanities	-	-	-	-	-	-
Science	-	-	-	-	-	-
Others						
- PSE	14.0	13.9	27.9	0.75	0.8	1.55
Grand Totals	30.8	31	61.8	1.75	1.9	3.65

* The figures for Business Studies I and II have been combined.

Table 20d

The Impact of Particular Subjects and Disciplines
Small-Town School

Discipline/ Subject	Fte-P			Fte-T		
	Yr 4	Yr 5	Both Yrs	Yr 4	Yr 5	Both Yrs
Creative Studies						
- ILP - Bus St*	4.1	5.55	9.65	0.25	0.34	0.59
- IT*	4.1	5.55	9.65	0.25	0.34	0.59
- Design Tech	5.54	5.6	11.14	0.47	0.41	0.88
- Media Studies	5.54	5.6	11.14	0.47	0.41	0.88
Sub Totals	19.28	22.3	41.58	1.44	1.5	2.94
Humanities	-	-	-	-	-	-
Science						
- Int Science	16.4	5.6	22.0	1.0	0.34	1.34
Others						
- ILP - Comm St*	4.1	5.55	9.65	0.25	0.34	0.59
- Guidance*	4.1	5.55	9.65	0.25	0.34	0.59
Sub Totals	8.2	11.1	19.3	0.5	0.68	1.18
Grand Totals	43.88	39	82.88	2.94	2.5	5.46

* The Figures for ILP have been split equally betwenn its four components.

It should be noted that, in addition to pupil numbers, the use of full-time equivalent pupils to assess the impact of various activities also takes account of the amount of time spent on an activity. Thus although Guidance is a core activity in Big-City School, the Fte-Ps for the subject are half those of other core subjects because it was allocated half the time allocated to the others. It should also be noted that differences in group size between subjects have no effect on Fte-Ps since the total number of pupils involved in a subjects will be the same irrespective of number of groups. This means that the disciplinary focus of subjects, which was found to have an effect on group, has no effect on the impact of various subjects based on Fte-Ps.

The relevant variables in relation to impact are therefore the core and option status of subjects, and the number of periods allocated. The issue then goes back to why some subjects were placed in the core and others in the option, and why some subjects were allocated more periods than others. The rationale for the allocation of periods, as already noted, was not only explicit, but also consistent between the schools; hence, the objectives of the schools took precedence over sub-unit interests in this respect.

With regard to core and options, there were variations between the schools. From the perspective of the school as whole, the City and Small-Town Schools in which most of the TVEI activities were included in the core achieved a greater impact than Big-Town School where most of the activities were provided as options. This reflects an apparent paradox: that the TVEI impacted more in the schools that did not comply with the TVEI guideline on voluntary pupil participation, than the school that did. From the perspective of sub-units (major disciplines), the issue is

less about core and option as about why some disciplines were not included in the first place. However, the decision in the City schools to include the three major disciplines in their TVEI schemes, and to place them in the core, appears to reflect a need to satisfy people in more sub-units than in Big-Town School where most of the activities were from one discipline.

Economic Use of Resources: Unlike the level of pupil involvement in an activity that is not affected by group size, the economic use of resources is significantly influenced by it. This point was made in chapter 8 in the analysis on economy in the use of resources and pressure on teachers. This is reflected in Tables 20a-d in which the Fte-Ts for subjects with smaller group sizes are higher than those for subjects with larger sizes. Thus, in Big-City School, although Design and Humanities are both in the core and have the same allocation of periods, the Fte-Ts for Design are higher than those for Humanities. It is because group size affects teacher (but not pupil) involvement in an activity that 'impact' was defined in terms of pupils only, rather than both pupils and teachers. Thus, if impact was defined in terms of teacher involvement, a school can achieve a high level of impact by simply lowering group sizes. This will not be consistent with the objective of efficiency in the use of resources.

The analysis in chapter 8 indicates that the periods allocated to subjects and pupil group sizes affect the economic use of resources. The need to meet the educational objectives relating to pupils' needs and interests, in terms of curriculum breadth, balance, relevance and differentiation, requires that curricular activities should exhibit variety. The variety in the nature of the activities, in turn, implies that group sizes will vary.

Furthermore, some activities have to be in the core and others in the options in order to better meet the various interests of pupils. Taken together, these suggest that group size needs to vary between subjects, and explain the variation in Fte-Ts, in Tables 20a-d, between various subjects within the schools.

However, an examination of the average group sizes of core subjects (Tables 11a-d) shows that they were generally larger in the City than in the Town schools. This tends to suggest that the allocative choices of the City schools enhanced the economic use of resources more than those of the Town schools. This, however, needs to be considered against the background of the fact that the City schools had three deputy headteachers each, while Big-Town School had two, and Small-Town School one.

Considered together, this suggests that the resource objectives of schools in the two LEAs had different emphases, with the City schools emphasising school administration more than the Town schools, and the Town school emphasising group size more than the City schools.

Equity: Equity has been defined as the degree to which the proportion of teachers and other resources utilised in various activities match the proportion of pupils involved in them. The analysis on equity in chapter 8 highlights two points which are relevant to the discussion in this chapter. The first, as reflected by the variations in R-PTR (Tables 14a-d) between the various subjects within the schools, indicates that pupil numbers are not the only determinants of resource needs. Thus, it was noted in chapter 8 that the apparent discrepancy between the allocation of equipment to subjects in Big-City School, rather than reflecting lack of equity or the exercise of influence, reflects the fact that different subjects make different resource

demands. This is particularly pertinent to integrated courses where account has to be taken not only of the number of pupils involved, but also the nature of the elements of courses. The second point, which is related to the first, is that the criterion of equity appears to be at odds with the criterion of economic use of resources. Thus while equity implies the equalisation of group size, economy require its maximisation. This explains why Small-Town School was found to have achieved the highest level of equity in its distribution of teachers. Thus in the 4th year of the school (Table 11b), the three subjects (Design, Humanities and Science) with the same group size (23) all have an R-PTR of 1 (the 'perfect match' figure). Similarly, all the core subjects in the 5th year have the same group size (22.17) and an R-PTR (0.99) which is approximately 1.

It should be pointed out that the equalisation of group size between subjects implied in the analysis on equity does not mean equalisation of the resources allocated to them. What it means is the matching of resources deployed with the proportion of pupils involved in various activities. In this respect, equality, as pointed out in chapter 6, has to be distinguished from equity. Thus it was indicated in chapter 6 that the equality approach adopted in Town LEA for distributing the 'practical' TVEI cohort and, therefore, TVEI resources, were challenged by organisational members on the grounds of equity. In the context of the discussion in this chapter, this was because, the equality approach effectively made smaller schools 'winners' and larger schools 'losers' in the allocation of TVEI resources.

Subject and Non Subject-Based Curricular Activities: It was earlier indicated that the analysis in this chapter would focus

on subject-based activities which were reflected in the timetables of the schools. By way of concluding this section, it is necessary to make a few points which are pertinent to the discussion in this chapter, and which relate to the provision of curricular activities as subjects and non-subjects.

In resource management terms, non subject-based (unlike subject-based) curricular activities present timetabling problems. This is evidenced by the block time allocation to residential and work experiences in all the schools. It was earlier noted that many co-ordinators for these activities described them as bolt-ons, suggesting a lack of full integration of the activities into the mainstream provisions of the schools. Monitoring and evaluation of performance is more difficult when the link between activities and resources is not quite explicit. In this context, non subject-based activities provide less explicit links between activities and resources primarily because they are not, as evidenced in the schools, normally included in the formal school timetables. This is because time is a major link between activities and resources, and an activity that is not systematically undertaken, in terms of time (schedule), cannot be easily monitored or evaluated.

In rational and political terms, this raises issues of openness which underlies the rational model. By making evaluation difficult, non subject-based curricular activities do not enhance accountability. In relation to the TVEI, this means that the more non subject-based activities there are in the TVEI scheme of a school, the more difficult it will be to determine the impact or 'change' implications of the Initiative in the school. In political terms, this reflects the point, which will be highlighted in the next section, that non subject-based

activities represent weaker political bases and provide weaker political resources to those involved in them than subject-based activities.

10.2. The Effect of the Emerging Structures and Roles

While focusing on subjects and curriculum areas, the discussion so far has direct implications for organisational participants. Thus, all those interviewed agreed that the TVEI had positively affected the status (stature and influence) and, therefore, the political resources of some individuals and groups within the schools. They cited the positions of co-ordinators, particularly school co-ordinators. As the co-ordinator of Small-City School observed: 'The introduction of co-ordination and co-ordinators gives people the status they did not have before'. The co-ordinators also noted that the reorganisation of some areas from single subjects to larger units had strengthened both the areas and the people within them. As the co-ordinator of Small-Town School put it, 'a bigger unit means a bigger voice'. Similarly the co-ordinator of Big-City School said that TVEI had helped to 'amalgamate some subjects and to empower the people in them'. He further cited job mobility as another benefit from TVEI by staff, saying that the Initiative had enabled more people to get jobs outside the school because of their TVEI curriculum and/or administrative experience.

A point generally stressed by the co-ordinators and headteachers is that the TVEI had enabled them to do what they had always wanted to do. For example, the co-ordinator of Big-Town School had noted that 'TVEI is a catalyst for change', adding: 'The changes have empowered and raised the status of individuals and groups, both pupils and teachers'. He pointed out that the

contract to deliver means that things which otherwise would not have been done are done, thereby enhancing their status and that of those involved in them. These examples are consistent with the general picture presented in this and the previous chapters and indicate that TVEI processes in the schools, like several other school decisions and processes, have produced winners and, by implication, losers. The next section examines these issues in terms of the administrative choices of the schools.

In the process of implementing the TVEI, schools had the option of either reorganising their management structures in response to new developments, or integrating new activities into existing structures. The evidence from the schools, as discussed in the previous chapter, indicates that they adopted the former approach, with the degree of reorganisation being influenced by their curriculum organisation and delivery choices.

The management structures emerging in the schools were presented in the previous chapter (Tables 16 and 17). There, four types of administrative centres, department/subject, activity/non-subject, faculty/disciplinary, and school-wide were identified. This section will examine the choices made by the schools in relation to these structures, and their effects on organisational members. This will be done by first examining the sub-unit structures and later the school-wide structures.

Activity, Departmental and Faculty Management Structures: As indicated in the previous chapter, 'activity' sub-units were adopted in the schools as a result of the increased emphasis given to cross-curricular activities in the TVEI schemes of all the schools. In addition, the City schools also adopted both departmental (subject-based) and faculty (disciplinary)

arrangements, while Big-Town School adopted the departmental and Small-Town School the faculty arrangement. Since the various arrangements in the schools have been outlined in the previous chapter (Tables 16a-d), what will be done here is to examine how the choices made by the schools have affected the status of individuals and groups within them.

Activities and Activity Co-ordinators: Three main activities, records of achievement (RoA) and residential and work experiences, fall under this category in all the schools. The other activity was Information Technology in Big-Town School which was provided as a cross-curricular, non-subject based activity since the inception of the TVEI in the school. As indicated in chapter 7, records of achievement existed in less developed forms in the City schools before the TVEI and was introduced with the Initiative in Town schools. Similarly, residential and work experiences were undertaken in all the schools before TVEI but were enhanced through greater pupil involvement after it.

Although co-ordinators were appointed for these activities in all the schools, interview responses from the schools suggest that the activities carried less weight than subjects in terms of status or the enhancement of the influence, or political resources of those involved in them. From the evidence, a number of factors were responsible for this. One was that, apart from IT and residential experience, the other activities did not have budget headings of their own. Thus, expenditure on records of achievement and work experience were drawn from 'administration' budgets which were controlled either by the headteacher or by the school TVEI co-ordinators. A second reason was that they did not have formal bases of their own. In other words, they operated on

an ad hoc basis, with no homogeneous group of pupils or teachers being linked to them. Thus, the co-ordinator of work experience in Big-City School indicated that teacher participation in the activity occurred on a voluntary basis. Similarly, the co-ordinator of the activity in Big-Town School said that she sometimes had problems getting teachers to go on supervision. A third factor, as indicated in chapter 8, concerned the fact that the activities were not only non-subject based, but also undertaken at irregular periods, using block (two to three weeks) time allocation. In this context, mention was made in chapter 8 of several activity co-ordinators who described the activities as bolt-ons, and as having a low status in the eyes of pupils.

In contrast to RoA and residential experiences, the cross-curricular IT in Big-Town School carried considerable status which was extended to its co-ordinator. This was mainly because the activity was not affected by most of the factors identified above in relation to the other activities. To begin with, the activity was transformed from an optional and, according to the co-ordinator, 'single pupil group' subject, to a school-wide cross-curricular activity. Also, the activity received a substantial budget, largely because computers were strongly related to it. These, and the fact that IT was popular with pupils in all the schools (mainly due to the computer facilities), made the IT unit and its co-ordinator quite influential in the school. Thus, when asked whether he had normal teaching duties, the co-ordinator said:

I am not formally timetabled into classes ... (but) teachers from various subjects usually seek my assistance in several ways ... word processing and so on ... I sometimes help to teach pupils in these areas. The pressure is sometimes high as every teacher wants to be attended to at the same time (IT Co-ordinators, Big-Town School).

From Appendix IX, and in relation to the three schools in which the faculty arrangement was substantially operational, the subjects in the three main areas of creative studies, humanities and science are given in Table 21.

Table 21

Number of School Subjects in Various Disciplines

Faculty/ Discipline	Big-City	Small-City	Small-Town
Creative Studies	Int Design* Art Bus Studies Child Care Design & Real Graphic Comm Home Economics IT Literature Technology (10)	Int Design* IT** Art Bus Studies Design & Real Home Economics Literature Music Technology (9)	Design Technology* Media Studies* ILP* Art Food Studies Music Technology Textiles (8)
Humanities	Int Humanities* Economics Geography History (4)	Int Humanities* Geography History Sociology (4)	Geography History Religious St (3)
Science	Int Science* Biology Chemistry Physics Rural Science (5)	Int Science* Biology Chemistry General Science (4)	Int Science* Biology Chemistry Physics General Science (5)

* Core Subjects

** Both core and option

Table 21 shows that the move in the schools to expand administrative units from departmental (subject based) to faculty (disciplinary) arrangements enlarged the units in the schools in terms of the number of subjects they comprised as follows:

Big-City School - Creative Studies - 1:10
 Humanities - 1:4
 Science - 1:5

Small-City School	- Creative Studies	- 1:9
	Humanities	- 1:4
	Science	- 1:4
Small-Town School	- Creative Studies	- 1:8
	Humanities	- 1:3
	Science	- 1:5

It can be seen that the new arrangements represented stronger units in terms of number of subjects. On the basis of this criterion, creative studies emerged as the most 'powerful' sub-unit. Extrapolated to their respective co-ordinators, the evidence suggests that the co-ordinators of the creative studies area in the schools were clear winners in the implementation of TVEI.

This, however, presents only a partial picture since it does not take account of the number of pupils involved in the various subjects. An indication of this can be obtained from the core and optional status of the subjects. In the Big-City School where one subject from each of the disciplines was provided as a core, there was a reasonable balance between the areas (faculties). In Small-City School, the creative studies area had been given an edge over the others through the inclusion of two subjects from the discipline in the core as against one for the others. Creative studies had an even bigger advantage in Small-Town School where three subjects from the area were in the core. By contrast, the humanities area was most disadvantaged through the non inclusion of a subject from the area in the core. In general, therefore, the faculty arrangement enhanced the political bases of administrative sub-units in the schools, with the creative studies area and the people in it, particularly the area co-ordinator, benefiting more than others in the process.

School-Wide Administrative Arrangements: School-wide

administration, as noted in the previous chapter, is typically the responsibility of the headteacher who oversees all school activities, and deputy headteachers who have responsibility for specific activities. From Tables 16a-d, these activities were distributed in the schools as follows:

The City Schools	- Overall Administration	- The headteacher
	Administrative Matters	- A deputy headteacher
	Curriculum Matters	- A deputy headteacher
	Pastoral Matters	- A deputy headteacher
Big-Town School	- Overall Administration	- The headteacher
	Administrative Matters	- A deputy headteacher
	Curriculum and	
	Pastoral Matters	- A deputy headteacher
Small-Town School	- Overall Administration	- The headteacher
	Administrative and	
	Curriculum Matters	- A deputy headteacher
	Pastoral Matters	- Year Heads

With the introduction of the TVEI, a co-ordinator was appointed for the Initiative in each of the schools. The position of school co-ordinators was a TA TVEI requirement and the co-ordinators were appointed from the LEA in both LEAs. When asked what they would have done if they had the option of not appointing a TVEI co-ordinator, the headteachers indicated that they had not thought of it. When asked what they thought now that the question was asked, one (Small-Town School) said that it was 'alright' to have school co-ordinators while the other three said that they might have considered using a deputy head. This suggests that those appointed school co-ordinators, at least in the latter three schools, have gained from the TVEI and, in particular, from the explicitness of its guidelines. This point is relevant to the issue raised in chapter 6 about the relevance of the freedom to make decisions to the rational and political models. In this case, the schools did not have the freedom to

choose and so did not have the opportunity to influence or not to influence. However, based on their responses, how justified (rational) would their choices have been?

The number of deputy heads in the schools were three each for the City schools, two for Big-Town School, and one for Small-Town School. Starting with Small-Town School, the support given by the headteacher to the appointment of co-ordinators appears to be consistent with the situation in the school. With only one deputy headteacher, the school had already delegated pastoral matters to a committee of year heads. It would, therefore, have been illogical to add the task of TVEI co-ordination to the already overloaded deputy head. In Big-Town School, the response by the headteacher that he might have used a deputy head later materialised. However, as indicated in the previous chapter, the deputy head took up the job because no teacher in the school was willing to accept it. Besides, as a school with a large sixth form, the two deputy heads there were few in number compared, for example, with Small-City School which was also less than half its size. A delegation of TVEI co-ordination in the school to a deputy head, right from the start, would therefore not have been logical. With respect to Small-City School, it would have been logical to delegate TVEI to a deputy head given that the school had as many deputy heads (three) as Big-City which was more than twice its size. The same is true of Big-City School when it is considered that the school had three deputy heads while Big-Town, with a similar size, had two.

Beyond the appointment of the school co-ordinators, other decisions made in the schools also helped to enhance their status. One of such decisions concerns the composition of the Senior Management Teams (SMTs) of the schools. Although,

following the departure of the former school co-ordinator, TVEI in Big-Town School was co-ordinated by a headteacher at the time of the investigation, all the other co-ordinators were former heads of department: Art for Big-City, Textiles for Small-City, and History for Small-Town School. As indicated in the previous chapter, the SMTs of the schools comprised six members each, with the headteachers, deputy headteachers and school co-ordinators as permanent members. This is further evidence in support of the gains made by the school co-ordinators relative to others in the schools.

The Allocation Process: It was indicated in the previous chapter that decision making processes in the schools generally, and the resource allocation processes in particular, were largely informal, with decision criteria being mainly subjective. Thus, unlike Capitation, the allocation of TVEI resources involved negotiations and the use of value judgement. This, and the fact that there was a general scarcity of relevant statistics in the schools, suggests that decision processes in the schools were oriented more towards the political than the rational perspective. This conclusion finds support from the effects of the informal and subjective nature of the decision processes and criteria, respectively, on organisational members.

As noted in the previous chapter, the informal nature of decision processes led to different understandings of decision procedures, and different expectations of decision outcomes by organisational participants. Thus, while some attributed the allocation of TVEI resources to the SMT, others attributed it to the headteachers, and, still others, to the school co-ordinator. Similarly, while some heads of department were not sure what the criteria for allocating TVEI resources were, others knew that they could

influence outcomes: hence, the remark by an area co-ordinator that 'the louder you shout, the more you get'. This suggests that the influence of organisational members played a role in the allocation of TVEI resources in the schools and, in terms of the rational and political models described in chapter 3, reflects the the political perspective.

External Demands: It is pertinent to point out that, in making their curriculum and resource allocation choices under TVEI, the schools have been influenced by both the LEA and the TVEI guidelines. This is as might be expected given that schools are part of a larger education system and, in the case of TVEI, at the bottom of the TA-LEA-School implementation hierarchy. Consequently, the concern in this chapter has not been so much about whether the schools' choices have been influenced by the TA or the LEA, as about how they have been influenced and why. In this respect, while the the TA had a similar influence on schools in both LEAs, the influence of the LEAs on their respective schools was different.

The TVEI curricula of all the schools were similar in many respects primarily because their choices were influenced by the TA through the explicitness of the TVEI guidelines. The TVEI guidelines contain several indications concerning the nature and organisation of the TVEI curriculum, and some references to specific curricular activities and administrative positions. As a result, both the LEAs and the schools had a reasonably clear idea of the policy objectives of TVEI. However, the evidence from the schools also indicates that the clarity of the TVEI guidelines was only partly responsible for the high level of similarities between the curricular choices of the schools. The

other part of the explanation resulted from the fact that the guidelines were largely similar to the schools' own objectives.

The influence of the LEAs on their respective schools was different primarily because the LEAs adopted different approaches to the interpretation and development of their TVEI projects. The City LEA adopted a joint (consortium) approach, while the Town LEA adopted an autonomous (institutional) approach. Thus whereas the common curriculum and organisational model adopted in City LEA effectively influenced processes at several levels in the City schools, including the type, nature, organisation and delivery of the curriculum as well as management structures, the Town schools exhibited significant similarities only in type of TVEI curricular activities which they provided. In terms of 'whose definition prevails?', therefore, the schools' definitions prevailed in Town more than in City LEA.

10.3 Conclusion

An attempt has been made in this chapter to interpret the resource management and, in particular, the allocative choices made by the schools using rational and political management perspectives. The analysis has been based on the criterion of 'winners' and 'losers' which, it has been argued, is relevant to both perspectives.

The schools have exhibited similarities as well as differences in their allocative choices which have been influenced by both internal and external demands. It has been noted that the emphasis given to the creative studies discipline in the TVEI of all the schools has been influenced by the need to take on board the policy objectives of the Initiative being implemented. Furthermore, the need to meet the educational objective of pupil

differentiation implies that curricular activities have to exhibit variety. And because curricular activities differ in terms of disciplines, they also necessarily make different resource demands. As a result, the distribution of resources to different curriculum areas will vary.

The variations between the various subjects and disciplines within the schools in terms of relative distribution of resources, as reflected by the distribution of Fte-Ps and Fte-Ts, were, therefore, as might be expected for reasons stemming from the underlying factors. Thus, the subjects differ in terms of disciplinary orientation which was found, in chapter 8, to influence pupil group size. Similarly, the subjects differed in terms of core and options, as well as number of periods allocated. There can be a variety of good reasons, therefore, for variations in the relative distribution of resources among subjects. However, it also raises questions about the rationale for choosing the subjects in the curriculum relative to different disciplines, for determining the relative number of periods to be allocated, and for placing some subjects in the core and others in the options. This is where the rational and political management perspectives come in. The issue, then, is whether a school has an explicitly set out objective (the rational model), or whether choices are made on contingent basis, being influenced by the different interests of, and demands from sub-units (the political model).

In this respect, all the schools not only adopted the same, but also an explicit criterion in the allocation of periods to subjects. Thus, those leading to GCSE were allocated twice the curriculum time allocated to those that did not. On the basis of

consistency and explicitness, the allocation of periods in the schools reflects rationality.

In relation to TVEI subjects as core and options, the schools varied in their choices, with the emphasis in the City and Small-Town Schools being on the core, and the emphasis in Big-Town School being on the options. Based on the requirement in the TVEI guidelines that pupil participation in the pilot phase of the Initiative should be on a voluntary basis, the decision by Big-Town School will reflect rationality on the grounds of consistency with the guidelines. At the same time, the guidelines also talk of 'a variety of approaches'. Besides, the introduction of TVEI in a school makes it a special priority objective. Consequently, the decision of those schools that placed their TVEI subjects in the core can be argued to be rational on the grounds that it enabled all pupils in the relevant year groups to have an experience of the Initiative.

The integration and modularisation of subjects were found to be useful in enhancing the economic use of resources and curriculum differentiation respectively. However, the degree to which integrated courses enhanced the economic use of resources depended on the the number of periods allocated to the subjects relative to the aggregate allocation to their components offered separately. The integration of subjects was further analysed to have the potential for obscuring the actual time spent on the various components, a situation which could affect curriculum balance and, hence, the needs and interests of pupils.

In conclusion, an important finding that emerged from this and the previous chapter is that the nature and organisation of curricular activities influenced the management structures of the

schools. Thus, the development of integrated courses influenced the move to increase the form of their administrative sub-units from mainly departments to departments and faculties. Similarly, the greater emphasis given to cross-curricular activities in the TVEI necessitated the appointment of activity co-ordinators. In political terms, the emerging structures have been found to provide political resources to individuals and groups within them in varying degrees, with subject-based sub-units being generally stronger than non subject-based sub-units. Similarly, the potential which the sub-units had for enhancing the political resources of members depended on whether or not they received their own budgets and on how regularly they were undertaken. In rational and political terms, this indicates that shifting organisational priorities brings with it changes in organisational activities, in organisational and delivery approaches, in the distribution of resources and, therefore, in the political bases of individuals and groups within the organisation and an accompanying shift in the balance of power relations. Consequently, rather than being opposites, the rational and political perspectives represent alternative interpretations of situations; everything depends on the perspective from which organisational choices are made and the basis on which the organisation and its members assess organisational outcomes.

Conclusion

The outcomes of the empirical work in the LEAs and schools were presented and analysed in the previous five chapters, with the previous chapter focusing on the interpretation of the choices made by the schools in relation to the allocation of resources. A number of findings emerged from these analytical chapters which have implications for educational practice. In this concluding chapter, the main findings of the study in terms of the key choices made by the schools will be summarised. Also, by way of recommendations for future action, the implications of the findings for educational practice will be discussed. The chapter will be concluded with a reflection on the researcher's experience of conducting the study and some recommendation for further research.

11.1 The Findings of the Research

Activities in educational institutions generally, and schools in particular, can be thought of as taking two main forms: curriculum and administration. Consequently, the major findings of the research will be summarised under these two headings. In order to put the findings in perspective, it is necessary to start with the role of the wider environment within which schools operate, in this case, the LEA and the TA.

Several choices made by the schools in the two LEAs were found to be similar. This was particularly the case in relation to the nature of the TVEI curricula of the schools. Two major factors were found to be responsible for this. The first was that the TVEI guidelines provided by the TA were reasonably explicit in

terms of certain curriculum provisions, including the target population (students) and some administrative requirements. Secondly, the guidelines were largely consistent with the LEAs' and the schools' own objectives.

As one of the main partners in the delivery of educational services at the local level, the LEA necessarily influences practices in schools. In this context, it was found that the degree of freedom which a school has for making its own allocative choices is reduced more by the centralisation of decisions on the structure of the curriculum than by the centralisation of decisions on the nature (types of activities) of the curriculum. Thus, although all the schools chose similar TVEI curricular activities, the influence of the LEA was significantly greater on the allocative choices of the schools in the LEA that adopted a consortium approach to the interpretation of TVEI, leading to a common curriculum (nature) and organisational (structure) model for all TVEI pilot schools, than on the the choices of the schools in the LEA that adopted a more autonomous approach relative to institutions.

11.1.1 The Curriculum: Organisation and Delivery

The Nature of Curricular Activities: The term cross-curricular activity is sometimes used as part of, and at other times, distinguished from curricular activities. The case study schools used both terms and distinguished them in terms of subject and non subject-based curricular activities. However, when it is considered that subjects from a variety of disciplines are included in the curriculum in order to enhance breadth, it will be noticed that cross-curricular activities are better defined in terms of disciplines rather than subjects, with curricular

activities relating to specific disciplines and cross-curricular activities relating to more than one discipline.

In all the case study schools, greater emphasis was given to cross-curricular activities since the introduction of TVEI than before it. This in turn led to an increased need for co-ordination and co-ordinators for these activities. The definition of TVEI, in terms of designated TVEI curricular activities, varied between the schools, ranging from mainly creative studies/technology based subjects in one school, to subjects in the creative studies, humanities and science disciplines in two schools.

The Organisation of Activities for Delivery Purposes: A primary consideration in the organisation of curricular activities is the characteristics of the pupils for whom the activities are being organised. Mixed sex and ability groupings were operational in all the schools with two of them also integrating mainstream and special needs pupils. Consequently, in terms of the programme-based analytical framework of this research, the 'for whom' component was largely homogeneous in the schools. This implies that, for a given subject, all pupil groups made similar resource demands. It also implies that the schools needed to devise other ways of addressing the educational principle of pupil differentiation. They did this through the separated and integrated structuring, the core and option status and the modularisation of subjects and courses.

The integration of elements from different traditional subjects into a coherent and more comprehensive course was evidenced in all the schools and the approach comprised two strands. In the first, integrated subjects were offered as core activities while

their component parts were also offered separately as options. In the second, integrated courses were offered as core activities while their components were eliminated from the curriculum of the relevant year groups. Integrated courses were provided as core activities in all the schools.

The classification of subjects into core and optional activities is typically used to achieve balance in the curriculum of individual pupils. At the same time, the options also provide pupils with the opportunity to choose those subjects which are better suited to their interests, talents and long-term career needs. In this context, a major finding of the study was that the modularisation of subjects, particularly in conjunction with integrated courses, re-defined the concept of directed option from choice of a subject within a discipline to choice of an activity within a course in a discipline or group of disciplines.

Linkages Between Activities and Resources: An important link between activities and resources is time. Time not only identifies when an activity will be undertaken, but also the duration and, by implication, the relative amount of resources that will be expended. In all the schools, subject-based activities were timetabled, while non subject-based activities were either not timetabled at all (eg RoA and cross-curricular IT) or allocated block (one to two weeks) time. The schools also adopted a common criterion in relation to the allocation of periods to subjects, with the typical allocation to those that lead to GCSE being 10% of curriculum time, and 5% to those that did not.

Apart from the amount of time allocated to subjects, a significant finding of the study concerns the mode of allocation.

In this context, block timetabling, or the timetabling of all periods allocated to a subject for the week at once, was adopted in all the schools. However, whereas the smaller schools adopted it for whole year groups, the bigger ones did so with parts of the year group. In terms of timetable management and resource deployment, this implies that it is easier to timetable a large number of periods than a large number of pupils groups at a time.

Apart from the number of periods allocated, another factor that affected resource utilisation was group size which determined the number of pupil groups in a subject. Four major factors were found to affect group size. These were the age/year group of pupils, availability of resources, the disciplinary focus, and the core and optional status of subjects. The effects of the first three were found to be more significant than the last.

Similarly, they affected group size as follows:

- Age/Year Group: The higher, the smaller the group size.
- Resource Availability: The less resources, the larger the group size.
- Disciplinary Focus of Subjects - Sizes increase from creative studies, through science to humanities.
- Core and Option Status of Subjects - Core subjects, in general, produced larger sizes than optional subjects.

While the number of periods allocated to subjects and the size of pupil groups affects resource utilisation, the specialisation of teachers affects teacher deployment. As a result, the specialisation of teachers is sometimes as important in the deployment of resources as the availability of teachers because a shortage of teachers in a school could result from a shortage in a particular subject area rather than from the school as whole. Two main approaches were adopted by the schools to address this issue. One was related to modules and involved the use of both specialist and non specialist teachers to teach the same modules to the same group of pupils with non specialist teachers

developing the general themes of the modules, and pupils later completing projects in the modules under the supervision of specialist teachers. This approach was less commonly used and was adopted mainly in the delivery of the Integrated Design course in the City schools. The second approach, which was widely used in all the school, for both separated and integrated subjects, involved the deployment of both specialist and non specialist teachers to teach the same subjects, with each teacher having his or her own group. The two approaches made substantial demands for co-ordination and in-service training for teachers (INSET).

From the perspective of schools, the provision of teacher cover is an important issue in relation to staff development. In this respect, two approaches were evidenced in the schools. The first involved the appointment of supply teachers from outside the school, as and when necessary. Some problems were identified in relation to this approach. For example, apart from teachers with the needed skills not being available when required, the approach involved a time lag within which the 'newcomer' adjusted to the environment. At the same time, the approach was found to have enrichment and motivational potentials; enrichment in the sense that new people brought new ideas, and motivational in the sense that pupils sometimes took delight in 'new faces'.

The second approach involved the use of TVEI staffing allowances to appoint extra teachers in order to create a system-wide resource (in this case teacher) slack. This slack was then spread to various curriculum and administrative areas, depending on the particular staff development and other needs of the school. Although this approach addressed most of the problems associated with external cover, one of its limitations was that

it rested on the premise that extra full-time teachers can be obtained. A significant option in the approach entailed 'double staffing' or the timetabling of more teachers than pupil groups in some subjects in anticipation of movements by some teachers in the team. A drawback of this practice is that it depends on the accuracy to which a school can forecast the sequence of activities.

Some of the choices made by the schools were not without problems and, in this respect, three areas were highlighted by the schools. The first concerned cross-curricular activities which all the schools agreed have not been fully integrated into the mainstream provisions of the schools, primarily because of timetabling problems. The second concerned the modularisation of subjects which, the schools claimed made more demands on both pupils and teachers and, with lack of time cited as a general problem in the schools, increased the pressure on teachers. The third area related to collaboration, in particular, collaboration between schools and colleges. Collaboration, mainly in the form of sharing of ideas within and between institutions was evidenced in the schools, with some subjects being jointly delivered between schools and colleges of further education. Two notable problems found in relation to school-college collaboration were the geographical constraint of distance, especially in subjects where pupils had to move to colleges for 'joint classes', and the different 'cultures' of the two forms of institution.

11.1.2 Administration

Structures and Roles: A major finding of the study, in relation to administration, was that the nature and organisation of curricular activities influenced the management structures of the

schools. Thus, the increased emphasis given to cross-curricular activities led to the creation of 'activity' sub-units, while the development of integrated courses led to the enlargement of administrative sub-units from departmental (subject-based) sub-units to faculty arrangements in which subjects within particular disciplines were group together to form larger sub-units. These developments increased the form of administrative sub-units within the schools from two, departmental and school-wide, to four - activity, departmental, faculty and school-wide.

It was further found that activity units had less potential for enhancing the status of the people involved in them, than departments. Two factors were found to be relevant to the status of sub-units. One was the allocation of own budget which was found to be positively related to the status of sub-units. The other was the frequency with which activities in the sub-unit were performed. Because activity units were mainly related to cross-curricular and non subject-based activities, and departments to subjects, this meant that subject-based activities enhanced the status of individuals and groups involved in them more than non-subject-based activities. Similarly, the adoption of faculty arrangements re-distributed the balance of power relations between sub-units. Since faculties were defined in terms of disciplines, this meant that the discipline with largest number of subjects and pupils emerged strongest. The creative studies discipline was found to have satisfied these conditions in all the schools.

A significant position that emerged from the introduction of TVEI in the schools was that of the school (TVEI) co-ordinator. In all the schools, the co-ordinators, but not heads of department

or co-ordinators of areas, were permanent members of the Senior Management Teams (SMTs), reflecting the emphasis placed on the position and, by implication, the status of the incumbents. The position is a TVEI requirement and was evidenced in all the schools. In addition to school co-ordinators, other TVEI developments necessitated the appointment of activity co-ordinators. A common finding in the schools in relation to responsibility posts was that most of those appointed as co-ordinators were mainly senior teachers, including some deputy heads. This created some role problems which have implications for educational practice.

Decision Making: All the schools reported greater involvement by staff in school decisions and processes since the introduction of TVEI than before it. While emphasising different factors as contributing to this, it is significant that all the factors were evidenced in each of the schools. These were: the move towards faculty arrangements and by implication the integration of subjects, the greater emphasis given to cross-curricular activities and the modularisation of subjects and courses. The implication of this is that the nature, structure and organisation of of curricular activities influenced the level of staff involvement in decision making. However, the nature of that involvement was largely informal with the the result that only a small group of individuals effectively made decisions. In relation to the implementation of TVEI in the schools, these were mainly SMT members, with headteachers and school co-ordinators playing central roles. The informal nature of staff involvement in decision processes was further found to have led to different understandings of decision procedures and different expectations of decision outcomes by participants. In the allocation of

resources, for example, some teachers (mainly SMT members) attributed the allocation of TVEI resources to the SMT while others attributed it to either the headteacher or the school co-ordinator. Similarly, while some heads of department were not certain what the criteria for the allocation of resources were, others felt that 'the louder you shout, the more you get'.

While the nature of the schools' decision processes was largely informal, the nature of their decision criteria was largely subjective. Thus, unlike Capitation which was allocated on a formula basis, TVEI resources were negotiated and allocated on the basis of value judgement. The situation was similar in relation to the monitoring and evaluation of performance which was left to the discretion of heads of department, and in which the professional judgements of the heads of department were considered both necessary and sufficient. The evidence therefore suggests that the monitoring information requirement in the schools was of a more subjective nature than is implied by 'hard' statistical data. The effect of this was a dearth of relevant statistics in all the schools.

The above summarises the main findings of the study relative to practices in the case study schools. As indicated in chapter 1, the general objective of this research has been the improvement of educational practice. Consequently, the implications of these findings for resource management in education generally, and schools in particular, will now be considered against the background of the rational and political management perspectives reviewed in chapter 3.

11.2 Implications of the Findings for Educational Practice

Given that resources are used by organisations to achieve their particular goals, and given that a primary objective of schools is the optimisation of pupils' academic achievement as well as personal and career development, resource management cannot be isolated from wider management and curriculum issues.

Three types of rationality which Cibulka (1987) terms technical, substantive and employee justice were identified in chapter 3. It was indicated there that technical rationality emphasises the maximisation of efficiency, regardless of which goals are selected or how they are selected. Similarly, substantive rationality focuses on the pursuit of particular ends which may or may not reflect the interest of all concerned parties, but which have been selected because they are 'desirable'. Finally, 'employee justice' rationality focuses on the satisfaction of organisational members. As pointed out by Cibulka, these three strands of rationality make different and even conflicting demands on an organisation. Thus, the the need to maximise efficiency might not enhance employee satisfaction. Similarly, the various strands have implications for the political management perspective in terms of reconciling the demands of the particular objectives being addressed, the means of achieving them, and the interests of organisational members and sub-units.

In making their allocative choices, therefore, schools need to consider the objectives of the school in relation to the needs of pupils on the one hand, and the availability of resources and satisfaction of teachers on the other. This is the basis on which the implications of the findings from the schools for educational practice will be examined. In this respect, the

programme-based framework adopted for this research provides a useful way for looking at resource management because, by enabling activities, pupils and resources to be separated, it enhances understanding of the links between them and, hence, the degree to which both educational and resource objectives have been met.

The Selection and Organisation of Curricular Activities: It was noted in the previous chapter that the decision as to what should or should not be included in the curriculum is as relevant to the rational as to the political management perspective. Similarly, the activities included in the curriculum of a school have both educational and resource implications. Educationally, while recognising that schools' choices will be influenced to some extent by external demands, the need to enhance curriculum breadth suggests that curricular activities should not only be many, but also varied. In this context, the emphasis given to the creative studies areas in the TVEI of the case case study schools has been argued to reflect their interpretation of the policy objectives of the Initiative. In resource terms, the number and nature of curricular activities will influence the nature and amount of resources that will be needed to deliver them. Conversely, the level of resources in a school will influence the number of curricular activities since effectiveness is related to resource level. This reciprocal relationship between curricular provisions and resource availability emphasises the importance of the criterion of efficiency (economic use of resource) in relation to the organisation and delivery of the curriculum.

The development of integrated courses has a number of practical implication for resource management. First, it has been noted

that the integration of subjects enhances curriculum breadth since it enables elements (subject matter) from different traditional school subjects to be taught together. However, as indicated in the previous chapter, this is enhanced when integrated courses are offered as core activities, thereby enabling whole year groups to benefit from the learning experiences embodied in the courses. In this respect, it is significant that integrated courses in all the case study schools were placed in the core. At the same time, subject integration needs to be adopted in conjunction with separated subjects in order to make the curriculum flexible, and to meet varying pupils' needs. A second implication of the integration of subjects relates to the economic use of resources. In this respect, it was pointed out in chapter 8 that the enhancement of economy in the use of resources through the integration of subjects depended on the number of periods allocated to the courses relative to the aggregate allocation to their components offered separately. A third implication of the integration of subjects relates to curriculum balance in terms of the degree to which adequate attention is given to all components of such courses. In this context, it has been noted that integrated courses have the potential of obscuring the actual time devoted to the various elements. This is relevant to the effectiveness of the delivery process and could affect the balance between the learning experiences received by pupils.

In general, the integration of subjects is relevant to the concept of 'subprogrammes'. It was indicated in chapter 4 that subprogrammes result when programmes are heterogeneous. This implies that when the components of an integrated course make different resource demands, that should be taken account of when

making allocations. In such a situation, the relevant variables will not only include the number of pupils involved, but also the nature of various elements within the course. As noted in chapter 8, this has implications for both resource seekers and resource allocators. Thus it provides those seeking resources a basis for justifying their requests while, at the same time, enabling resource allocators to justify apparent discrepancies between allocations made to, for example, separated and integrated subjects.

Although largely influenced by the TVEI guidelines, the greater emphasis given to cross-curricular activities in the schools is relevant to the economic use of resources, the enrichment of pupils' learning experiences and the satisfaction of organisational members. Cross-curricular activities, by definition, do not relate to particular subjects. Consequently, their introduction in a school will affect all curriculum areas. The problems identified in relation to the delivery of these activities stemmed mainly from the fact that they were provided as non subjects and not reflected in the normal timetables of the schools. This meant that teachers attended to the activities during their 'free' time thereby increasing the pressure on them. This was why some co-ordinators for the activities called them bolt-ons and why the activities commanded a lower status than subjects. While it is not possible or necessary to timetable such activities as residential and work experiences, an implication of this finding is that schools need to devise ways of better integrating cross-curricular activities into mainstream (subject-based) provisions.

Meeting Pupils Needs: With the schools operating mainly mixed pupil groups, curriculum differentiation was addressed in terms of

the organisation of activities rather than pupil grouping. This has an important implication for the economic use of resources, for, as noted in chapter 2, the more that can be done to increase the size of a unit for curriculum planning, the the more economies can be affected. By adopting mixed sex and ability pupil groups, the schools avoided uneven group categories and forced small group sizes which could result from the stratification of pupils. A similar result was achieved by placing more subjects in the core than in the options. Thus, of the ten subjects undertaken by every pupil in each of the schools, seven were typically offered as core subjects (Appendix IX).

While mixed pupil groupings and the inclusion of more subjects in the core than in the options enhance economy in the use of resources, they do not address differences in the curricular needs and interests of pupils. In this context, the modularisation of subjects provided a supplement as well as an alternative to the traditional free option system typically used to meet varying pupils' interests. Thus, in addition to selecting subjects of their choice from optional subjects, pupils could also select modules of their choice from both core and optional subjects. The modularisation of subjects therefore introduced an element of choice in subjects placed in the core. This meant that economy and differentiation were simultaneously achieved by modularising subjects and placing them in the core. This process was further enhanced by some subjects being integrated, thereby also introducing an element of breadth. In effect, economy and curriculum breadth and differentiation were addressed by integrating subjects, organising them in modules and providing them as core activities.

The Utilisation of Teachers and Other Resources: Economy has been highlighted as a major resource management objective in this study because, as pointed out in chapter 1, resources are scarce in schools as in other organisations. Besides, 'value for money' is increasingly becoming a priority requirement of resource providers. However, economy needs to be considered in conjunction with other educational objectives, particularly those relating to pupils' curricular needs and interests.

It has been pointed out that time is a the major link between activities, pupils and teachers. Timetable management is therefore an important aspect of resource management, for, the timetable not only indicates when an activity will be undertaken, but also the duration of the activity and, by implication, the amount of resources that will be expended. In this context, 'block timetabling' or the timetabling of all periods allocated to a subjects in the week and/or a whole year group at a time, was an important development in the schools. The system was claimed by people in the schools to promote the sharing of resources and expertise through through pupil migration between classrooms and teachers. However, the evidence from the schools indicates that it is easier to timetable a large number of periods than a large group of pupils at a time. This has implications for school size.

Two variables, number of periods allocated to subjects and group size, were found to be significant to the utilisation of teachers and other resources. The criterion of accreditation (GCSE) adopted by all the schools for allocating periods to subjects has been noted to be explicit. This emphasises the need for schools to have clear criteria for allocating time and, indeed, other resources. With respect to group size, there appears to be a

conflict between resource objectives relating to the needs of pupils and those relating to the economic use of resources. Thus, while the former favours a reduction in group size, the latter seeks to maximise it. The fact that the achievement of one tends to hinder the achievement of the other, suggests that allocative choices need to be aimed at achieving a balance between the two objectives.

In this respect, it has been noted that group size will necessarily vary between subjects for reasons stemming from the factors that affect group size. Thus, for reasons of curriculum breadth, curricular activities need to reflect different disciplines which in turn will require different group sizes for effective delivery. Similarly, for reasons of curriculum balance and differentiation, some subjects need to be in the core and others in the options. For schools, the objective here concerns the enlargement of groups while not affecting curriculum breadth, balance and differentiation. In this context, it has been noted that the integration of subjects enhances curriculum breadth when placed in the core. Similarly, it has been pointed out that the modularisation of subjects enables subjects in the core to address curriculum differentiation. Furthermore, it was indicated that economy is enhanced when integrated courses are delivered with periods which are less than the aggregate allocation to the components offered separately. Combining these suggests that economy, differentiation and curriculum breadth can be addressed simultaneously by integrating subjects, organising them in modules, placing them in the core, and allocating them periods which are less than the aggregate allocation to the component parts offered separately.

With respect to the specialisation of teachers, the practice in all the case study schools of utilising teachers across disciplines has a number of implications for educational practice generally. One is that it reduces the role of the specialisation of teachers as a factor in the resource allocation process. It therefore permits school managers to plan with fewer restrictions. However, the approach does not completely eliminate the importance of the specialisation of teachers in their deployment. Thus, many subjects were still taught by specialist teachers in all the schools. In addition, there is a limit to which teachers can be made, or allowed to 'migrate'. This point was stressed in chapter 7 in relation to Big-City School where a history teacher also taught IT, Guidance, Humanities and Leisure. There it was noted that, while across specialisation teaching generally enhanced flexibility in the use of resources, its implications for the quality and stability of teaching and learning also need to be considered.

Of course, the problems associated with some of the choices made by the schools need to be taken into account while adopting them. One such problem, as identified in the schools, is lack of time in which to deliver modules effectively; and another relates to the specialisation of teachers, particularly in integrated courses. In general, the developments in the schools, particularly the integration of subjects and teaching across disciplines, not only make substantial demands for in-service training for teachers (INSET), but also have implications for the initial training programmes of teachers in training colleges. Similarly, the problems associated with collaboration, in particular inter-institutional collaboration, suggest that

collaboration should generally be seen as a complementary delivery strategy, as a means rather than an end in itself.

Administration: It was earlier indicated that a major finding of the study was that the management structures of the schools were, to a large extent, influenced by the nature and organisation of curricular activities. The direct implication of this is that allocative choices relating to the curriculum should not be considered separately from administrative arrangements. By considering curriculum and administrative arrangements, and how to relate resources to them, together, the chances of integrating all activities, both curricular and cross-curricular, will be greater. In this respect, the involvement of teachers in certain cross-curricular activities on a voluntary basis suggests that the delivery of those activities were not fully considered before implementation started.

Although new developments necessarily bring with them new roles, the appointment of co-ordinators, in particular school TVEI co-ordinators, emphasised the priority placed on TVEI developments in the schools. However, as discussed in chapter 9, the fact that most activities were co-ordinated by mainly senior teachers resulted in some role problems which have both direct and indirect cost implications. Thus, role overload can occur in situations where several responsibilities are given to the same individuals simply because of their status, or in order to give authority to the position. This can lead to inefficiency. Similarly, it was noted that the situation can also result in compliance rather than consensus between those responsible for activities, and other teachers involved in them, thereby reducing the roles of ordinary teachers from those of active contributors to those of passive receivers.

The move towards faculty arrangements was a major administrative development in the schools. However, it did not have any significant impact on decision making processes primarily because the processes were largely informal, and the criteria for decision making largely subjective. While the informal nature of processes may indicate a difference between decision making processes in schools and in other organisations, such as industrial and commercial businesses, it was found that it resulted in effective decision making being centred on a small group of individuals. It was further found to have led to different understandings of decision procedures and different expectations of decision outcomes by participants. Similarly, while the subjective nature of the schools' decision criteria may be indicative of the monitoring information requirement in schools generally, it resulted in a scarcity of relevant statistics in all the schools, a situation which made the analysis of some processes difficult.

In conclusion, the fact that the schools' interpretations of TVEI were influenced by the Initiatives's guidelines which were not only clear but also largely consistent with their own objectives, has implications for educational policy makers as it highlights the need for adequate consultation between policy makers and potential implementers during policy development. Related to the clarity of the TVEI guidelines is the issue of funding. It was noted in chapter 2 that the TVEI has been described as a resource-led initiative. Although the schools indicated that the TVEI had enabled them to do what they had always wanted to do, the general agreement amongst them that its guidelines were consistent with their own objectives suggests the influence of an unstated motivational factor. In this case, a common factor was

the TVEI funding. This has an important implication for resource providers in education. Thus, while 'value for money' is a useful resource management principle for implementers, schools need to be given proper incentives through the provision of adequate resources. Indeed, the schools were able to adopt many of the resource management options discussed above primarily because of the 'extra' TVEI funding.

With respect to LEAs, the consortium and institutional approaches adopted by the LEAs significantly influenced schools' choices in both LEAs. In particular, the common curriculum and organisational model adopted in City LEA tended to limit the flexibility of practices in schools in the LEA, and might explain why the City schools started to exhibit differences in their curricular patterns later in the implementation of the Initiative. The implication of the common curriculum model adopted in the LEA becomes clearer when considered in relation to the TVEI guidelines. The difference between the two is that while the TVEI guidelines spelt out the **nature** of the curriculum envisaged, the common model of the LEA spelt out the nature as well as the **structure** of the curriculum. The implication of this is that, while the central government or the LEA may wish to influence the nature of the school curriculum, that influence should not be extended to the structure or organisation of the curriculum which should be left to individual institutions.

11.3 Reflections on the Research Process

A description of the the conduct of the empirical work was presented in chapter 5. That will now be expanded and elaborated upon by briefly discussing the researcher's experience of

conducting the study and outlining the strengths and limitations of the methods used in the collection and analysis of data.

The research process typically comprises several different but related parts. Consequently, the researcher is faced with a number of decisions with the eventual outcome of the research depending to large extent on the choices that he or she makes. Three such decisions concern the scheduling of research activities, the choice of the research methodology, and the significance or value of the research. These will now be considered in relation to this research.

Scheduling of Research Activities: Although varying in scope and focus, research activities typically include the definition of the problem, the review of relevant literature, the selection of an appropriate methodology, and the analysis of data. In the scheduling of these activities, the researcher has only a partial control of the situation. This is particularly so, as in this case, in studies utilising the case study approach. Thus, the level of co-operation of respondents at the case study sites also need to be taken into account.

From the researcher's standpoint, the determination of the relevant research activities and how they should be ordered, does not present too much of a problem, even for beginning researchers, as they can easily be obtained from textbooks and handbooks on conducting research. However, theory is different from practice and research, in practice, is not a linear process. Thus, in the case of this study, not only did some activities overlap, but certain approaches were also adopted, worked upon and later dropped. For example, the title, the focus and the framework of the research were changed at different points in the

process. Initially, it was intended that the research should have an international dimension but that idea was later abandoned, primarily for two reasons - feasibility and relevance. Firstly, feasibility problems (especially time constraint) arose as might be expected in a research conducted by one person with limited resources. Secondly, and more significantly, the potential of the research for contributing to knowledge was expected to emerge directly from in the LEAs and schools. Of course this change in the scope of the study led to a change in the its title. These developments necessarily rendered some work already done useless.

Then there was the uncertainty of the co-operation of people at the case study sites to contend with. As one of my tutors put it in a handout on 'tips on conducting fieldwork', one should not expect to be welcomed at case study sites with: 'I have the pleasure to see you and to answer any questions you will like to ask'. In general, the respondents in this study were co-operative and supportive. However, this does not mean that there were no drawbacks or anxious moments for the researcher. On the contrary, several interviews were cancelled at short notice. In fact, on two occasions the researcher arrived for interviews only to be told that the interviewee left a message regretting that he/she will not be available due to 'unforeseen' circumstances.

A particularly worrying situation arose in early 1990 which eventually led to an extension of the time originally scheduled for the fieldwork. The fieldwork was planned to end by June 1990, but in March of that year, the co-ordinator of one of the case study schools, who also co-ordinated all interviews in the school, indicated that nobody in the school would be available

for further interviews for the rest of that academic year. The decision was based on genuine grounds of pressure as some teachers, including a headteacher, had left the school at the time. While accepting the decision and understanding the grounds on which it was made, both the researcher the research supervisor made separate attempts to arrange some interviews in the school in order to meet the June schedule. However, the attempts failed and empirical work was eventually completed in the school between September and December 1990. Although preliminary analysis of data started as soon as data started to come in, this clearly meant that data collection was extended far beyond the expected schedule. In general, the advice and support of research supervisors are important in this type of situation and, in this case, the supervisor was quite useful. The implication of this is that while careful planning is crucial in the conduct of a research, the 'respondent factor' is not only significant, but also unpredictable and, therefore, needs to be taken account of.

Methodology and Analysis: The research methodology and data collection techniques adopted for the research were described in chapter 5 together with the rationale for, and key limitations of the choices made. These will be elaborated further here with particular reference to the rationale for, and use of the methods.

As indicated in chapter 5, data was collected mainly through documentation and interviews. The use of questionnaire to supplement these was considered but later abandoned. Briefly, the thinking behind this decision was as follows. First, it was decided that documentation would be used as it represents a useful primary source of data since the information it contains is not based on recall. The question then, was about whether to

supplement documentation with interview or questionnaire, or both. At this point, the nature of the data envisaged led to the exclusion of questionnaires.

After examining the nature of the expected data, it was decided that the interview method was more suitable because rich data that can provide a detailed understanding of decisions and processes in the schools was needed. It was felt that the interview more than questionnaire approach was capable of providing this kind of data because not only will the respondents have the opportunity to elaborate on points, but the researcher will also be able to follow-up questions immediately. This, in itself, did not completely exclude the use of questionnaires as a supplement. However, this was also considered unnecessary because its use then would be mainly to collect data from a wider sample and to corroborate data from interviews. As explained in chapter 5, relevant sub-units were covered in the interviews so it was felt that there was no need to extend the scope of respondents. Besides, the administration of questionnaires on a wider sample might have included people who knew little about the TVEI. That would have confused rather corroborated evidence.

The programme-based framework adopted for the research enabled rich data to be collected. Rather than conceiving school processes as one huge lump of activities which might have made data collection and analysis difficult, the framework enabled activities, pupils and resources to be separated. As a data collection and analytical framework, the programme structure was useful in several ways. First, by enabling activities, pupils and resources to be separated for examination, it gave the data collection process an explicit focus. Secondly, it enabled each of these components, referred to in chapter 4 as the 'what', 'for

whom' and 'how' components, to be examined separately before attempting to explore the linkages between them. This enabled the various components to be examined in greater detail than would otherwise be the case. For example, the relationship between the separated and integrated structuring of subjects and the concept of subprogrammes led to an examination of whether, and under what conditions, these two methods of structuring curricular activities made different resource demands. Thirdly, the framework enabled the linkages between activities, pupils and resources to be better understood. In general, the framework enhanced the development of interview schedules and the identification of follow-up questions, primarily because of the clear direction which it provided the research.

With respect to the analysis of data, the adoption of full-time equivalent pupils and teachers enabled the pupil and teacher-time committed to specific subjects to be isolated for analysis. The concept of full-time equivalence, as pointed out in chapter 8, is particularly suitable for examining part of the curriculum, such as the TVEI. By normalising various variables, including pupil numbers, and periods allocated, Fte-Ps and Fte-Ts enabled comparisons to be made between subjects within a school, as well as between schools, irrespective of school size.

Significance of the Study: The dearth of research on resource management in education generally, and schools in particular, makes this research valuable in a general sense. More specifically, apart from specific findings, the implications of which have important implications for resource management in education, the programme framework which has been developed and used to analyse and interpret allocative choices in schools has both research and management implications. In research terms, it

provides a useful perspective for examining educational processes, including the curriculum, resources and administration. In management terms, by separating activities into discrete components, it enables educational planners and managers to better understand the nature of the components and their resource requirements. This, in turn, will enable them to better meet those requirements.

Beyond the programme framework itself, the approach adopted in this study, whereby an attempt has been made to relate activities to resources, provides a basis for thinking about resource management generally, and the allocation of resources in particular. To this extent, it is expected to be of practical value to educational policy makers and managers and of academic value to students of resource management. Similarly, the full-time equivalent pupils and teachers used as the basis for a substantial proportion of the analysis are expected to be useful as planning tools for educational managers, and as evaluation criteria for educational researchers.

At the same time, it is pertinent to refer to the the main limitations of the study outlined in chapter 1 and elaborated in chapter 5. Specifically, the data for this research relates to only four schools, and to the fourth and fifth years. Furthermore, as already acknowledged, interview data have some limitations which derive from both the recall of information by respondents, and their interpretation by the researcher. Again, a substantial part of the analysis has been based mainly on timetabled curricular activities. And with respect to the analysis of data, the calculation of Fte-Ts assumes that only one teacher is involved in an activity with a group at a time. However, these limitations do not hinder the potential value of

the research which is primarily aimed at improving practice; hence, the implications of the findings have been presented in interpretative rather than prescriptive terms.

11.4 Recommendations for Further Research

While some questions have been answered by this research, it has also raised others. It is therefore necessary to end this thesis by pointing out some areas which need to be researched further, both on their own, and in order to complement this study. With respect to the curriculum, several approaches were adopted by the schools in relation to the organisation and delivery of the curriculum. Some of the key ones identified in this study include:

- * The Integration of Subjects
- * The Modularisation of Subjects
- * Block Timetabling
- * Across Specialisation Teaching
- * Collaboration Within and Between Institutions

It is suggested that researches which focus on one or more of these and which examine their effects in greater detail will not only complement this study, but will also be valuable in their own right. Similarly, an important finding of the study is that cross-curricular activities have not been fully integrated into the mainstream provisions of the schools. A study which addresses this problem with a view to finding a solution will therefore be of practical importance to schools.

With respect to administration, the move towards faculty arrangements has been an important development in the schools. However, whereas this research was only concerned with how the management structures of the schools have changed, a study which focuses primarily on management structures, and which not only examines how but also why the structures have changed as well as

how the emerging structures operate, will throw further light on the implications of faculty arrangements in schools.

In general, it has been noted that schools have both resource and educational objectives. Similarly, mention has been made in this and other chapters that the significance of some of the developments in the schools is dependent on the degree to which they enhance, or at least do not hinder, the educational outcome of pupils' achievement. To this end, researches which examine pupils' achievement, relative to the allocative choices of the schools, identified in this research, will serve as useful complements to this study.

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Appendix 1

The Aims and Criteria Of TVEI

A: AIMS

- a. In conjunction with LEAs to explore and test ways of organising and managing the education of 14-18 year old people across the ability range so that:
- i) more of them are attracted to seek the qualifications/skills which will be of direct value to them at work and more of them achieve these qualifications and skills;
 - ii) they are better equipped to enter the world of employment which will await them;
 - iii) they acquire a more direct appreciation of the practical application of the qualifications for which they are working;
 - iv) they become accustomed to using their skills and knowledge to solve the real-world problems they will meet at work;
 - v) more emphasis is placed on developing initiative, motivation and enterprise as well as problem-solving skills and other aspects of personal development;
 - vi) the construction of the bridge from education to work is begun earlier by giving these young people the opportunity to have direct contact and training/planned work experience with a number of local employers in the relevant specialisms;

vii) there is close collaboration between local education authorities and industry/commerce/public services etc, so that the curriculum has industry's confidence.

b. To undertake (a) in such a way that:

i) the detailed aims can be achieved quickly and cost effectively;

ii) the educational lessons learned can be readily applied in other localities and to other groups among the 14-18 year olds;

iii) the educational structures/schemes established to further the aims of the initiative should be consistent with progressive developments in skills and vocational training outside the school environment, existing vocational education for under 16 year-olds young people, and higher education;

iv) emphasis is placed on careful monitoring and evaluation;

v) individual projects are managed at local level;

vi) the overall conduct, assessment, and development of the Initiative can be assessed and monitored by the MSC (TA) and the TVEI unit it has established for this purpose.

B: CRITERIA

1. The pilot projects selected will represent a variety of approaches to the provision of full-time general, technical, and vocational studies which are adapted to the varying abilities and interests of young people aged 14-18. 'Vocational education' is to be interpreted as education in which the students are

concerned to acquire generic or specific skills with a view to employment. Projects should cater for students across the ability range, having regard for the need for project courses to lead to nationally recognised qualifications: the balance between what is offered for different ability levels is expected to vary between projects. Consideration should also be given to accommodating some students with special educational needs.

Content of Programmes

2. Each project should comprise one or more sets of full-time programmes with the following characteristics:

- 1) Equal opportunities should be available to young people of both sexes and they should normally be educated together on courses within each project. Care should be taken to avoid sex stereotyping.
- 2) They should provide four-year curricula, with progression from year to year, designed to prepare the students for particular aspects of employment and for adult life in a society liable to rapid change.
- 3) They should have clear and specific objectives, including the objectives of encouraging initiative, problem-solving abilities, and other aspects of personal development.
- 4) The balance between the general, technical and vocational elements of programmes should vary according to students' individual needs and the stage of the course, but throughout the programme there should be both a general and a technical/vocational element.

- 5) The technical and vocational elements should be broadly related to potential employment opportunities within and outside the geographical area for the young people concerned.
- 6) There should be appropriate planned work experience as an integral part of the programmes, from the age 15 onwards, bearing in mind the provisions of the Education (Work Experience) Act 1973.
- 7) Course offered should be capable of being linked effectively with subsequent training/educational opportunities.
- 8) Arrangements should be made for regular assessment and for students and tutors to discuss students' performance/progress. Each student, and his or her parents, should also receive a periodic written assessment, and have an opportunity to discuss this assessment with the relevant project teachers. Good careers and educational counselling will be essential.

Qualifications to be Obtained

3. Students should normally be preparing for one or more nationally recognised qualifications to be gained by the end of the programme. Given the wide spread of ability, a wide range of such qualifications will need to be aimed at, including TEC/BEC (at non-advanced levels), RSA certificates, CGLI certificates, GCE A-levels and GCE O-levels, CSE and, when available, the proposed CPVE. Some students may seek to gain a qualification at say age 16 as a stepping stone to gaining an additional one by the end of the programme.

4. On completing their studies, students should be issued by the LEA with a record of achievement describing qualifications gained and recording significant elements and attainments which are not readily deducible from qualification e.g. work experience and personal successes.

Institutional Arrangements

5. Each project should be clearly identifiable and it should be clear how staff and students relate to it. Arrangements should be made so that staff, students and all those involved in the project are aware of its purposes, main features and scope. Each project should also have a co-ordinator who is responsible for the project as a whole.

6. It will be for LEAs to make and operate arrangements for admission to the programme. These arrangements should permit entry to the project of a wide ability range on the basis of readily defensible criteria. Interested parents, prospective students and their teachers should be informed of these arrangements, and provision should be made for counselling concerning entry to the programme.

7. Each programme should be part of the total provision of the institution(s) in which it takes place so that the students may take part with others in the life of the institution(s). (The education offered in the institution(s) to those not on the programme should contain technical or vocational elements as appropriate, and those not on the programme should not be adversely be affected by the conduct of the programme).

8. In organising the programme the LEA is expected to use existing institutions in whatever combination or adaptation as

appropriate. The timetable for projects does not readily permit arrangements which would so alter the character of a school as to require the publication of Section 12 proposals.

9. It is suggested that each project, whether it is within a single LEA or undertaken jointly by several LEAs, should cover between 800-1000 students (i.e. between 200 and 250 per year group). The Commission (Agency) will be prepared to consider projects on a smaller or larger scale but MSC (TA) funding will be related to no more than 1000 students. Numbers in excess of this will need to be funded by the authority. Each programme should be planned on the basis of an intake of four generations of students. The arrangements will need to be flexible enough to accommodate movement in and out, for whatever reason, of some students during the four year course and should address the question whether movement out should be compensated by admission of students after age 14. There will also need to be flexibility between courses within programmes.

10. It will be for the LEA to propose whether each project should have one or more sets of programmes, its geographical spread within the LEA and any departures from the conventional pattern of the school/FE day, week or year. Each project should be designed to ensure that there is a significant number of TVEI students in each participating school/college; the participating schools, individually or through consortia arrangement, can achieve a significant widening of the curriculum options; and sufficient resources can be provided for each participating school/college so that adequate facilities and equipment are available for the provision of the new curriculum options.

Resources

11. Each project should envisage appropriate resources for effective delivery of the programme, including the work experience component, on an adequate scale, in particular:

- 1) Part or full-time teachers/instructors, where appropriate from industry, as may be necessary to secure that those teaching in the project have the required qualifications, up-to-date subject expertise, and experience in, or aptitude for, working with 14-18 year olds. The requirement for formal teaching qualifications will depend on the institutional arrangements made in each case, and will need to be subject to any legal requirements as to the qualifications required under such arrangements.
- 2) Accommodation, equipment, and teaching materials appropriate to the age group and, as far as possible, reflecting changes and advances in technology.

Local Support Arrangements

12. Without prejudice to existing statutory requirements, each project should be supported and guided locally by a mechanism bringing together, in an effective manner the interests most directly concerned, viz the LEA, local industry and commerce, teachers and lecturers, and, where possible, parents and interested voluntary bodies.

Source: Manpower Services Commission (MSC) (1985b), TVEI Review 85. MSC, pp. 34-37.

Documents Analysed

A. National

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B. LEAs

City LEA

TVEI Proposals, Revised November 1986

TVEI Annual Report 1986

TVEI Annual Report 1987

TVEI Annual Report 1988

TVEI Annual Report 1989

Various statistical, working and informal documentation

Town LEA

TVEI Proposal, Revised November 1987

TVEI Annual Report 1988

TVEI 16-18 Proposals, November 1988

Institutional Plans and Statements of Intent 1989-90, Nov 1988

TVEI Extension Proposals, November 1989

Various statistical, working and informal documentation

C. Schools

Big-City School

Information Booklet for Pupils and Parents 1989

Staff Handbook 1989-90

School (TVEI) Curriculum Development Handbook, December 1989

Timetables: Pupils and Teachers 1989/90

Various statistical, working and informal documentation

Small-City School

Parents Handbook 1989

Staff Handbook 1989-90

Curriculum Initiative Handbook, December 1989

Timetables: Pupils and Teachers 1989/90

Various statistical, working and informal documentation

Big-Town School

Hanbook for Pupils and Parents 1989/90

School Handbook 1989-90

Option Handbook 1989/90

Timetables: Pupils and Teachers 1989/90

Various statistical, working and informal documentation

Small-Town School

Hanbook for Pupils and Parents 1989/90

School Handbook 1989-90

Timetables: Pupils and Teachers 1989/90

Various statistical, working and informal documentation

People Interviewed

A. LEAs

City: 1. Project Co-ordinator
2. Development Officer

Town: 1. Project Co-ordinator
2. Assistant Project Co-ordinator

B. Schools

Big-City: 1. Headteacher
2. Deputy Headteacher (Administration)
3. Deputy Headteacher (Records of Achievement)
4. TVEI Co-ordinator
Heads of Department/Area Co-ordinators:
5. Business Studies
6. Design
7. Guidance
8. Humanities
9. Information Technology (IT)
10. Leisure
11. Science
12. Work and Residential Experience

Small-City: 1. Headteacher
2. Deputy Headteacher (Curriculum/Guidance)
3. TVEI Co-ordinator
Heads of Department/Area Co-ordinators:
4. Business Studies
5. Design
6. Guidance
7. Humanities
8. Information Technology (IT)
9. Leisure
10. Science
11. Records of Achievement
12. Work and Residential Experience

Big-Town: 1. Headteacher
2. Deputy Head (Administration/TVEI Co-ordinator)
Heads of Department/Area Co-ordinators:
3. Business Studies
4. Design Technology
5. Food Studies
6. Information Technology (IT)
7. Media Studies
8. Personal and Social Education (PSE)
9. Records of Achievement
10. Work and Residential Experience

Small-Town: 1. Headteacher
2. Deputy Head (Administration/Curriculum)
3. TVEI Co-ordinator
Heads of Department/Area Co-ordinators:
4. Design Technology

5. Integrated Learning Programme (ILP)
6. Media Studies
7. Media Studies
8. Science
9. Records of Achievement
10. Work and Residential Experience

Appendix IV

Interview Schedules

A. For Project and School Co-ordinators and Headteachers

Inception of TVEI

1. **When and how** did the Initiative start in the LEA/school? (Why did you start when you did?). *
2. **How** was the LEA/school TVEI proposal developed, and **who** were the key contributors?
3. Has there been any significant modification to, or revision of the original proposal? (If so, **what and why?**).

Implementation

4. What are the major **curricular and administrative** TVEI provisions of the LEA/school?
5. In relation to the TVEI curriculum provisions and administrative arrangements, **why** were these provisions and arrangements chosen and adopted by the LEA/school?
6. In broad terms, **how** are the activities organised, and **who** are responsible for the various areas?
7. In retrospect, what **changes** would you like to make or to be made to these provisions and arrangements?
8. Are there any **other relevant points** that you would like to add?

Documentation

9. How can I obtain documentation relating to:
 - a. Project/Scheme management structures?
 - b. The organisation and delivery of activities?
 - c. Other relevant information and/or statistics?

* The items in brackets are follow-up questions.

B. For School and Area Co-ordinators and Heads of Department

Curriculum Organisation and Delivery

1. In terms of curricular and cross-curricular provisions, what are the **designated TVEI activities** of the school?
2. Which of these activities were:
 - a. Introduced new with TVEI?
 - b. Existing before TVEI but enhanced by it? (Nature of enhancement?)
 - c Supporting TVEI?
3. Which of these activities are offered as **subjects**, and which as **non-subjects**?
4. How are the activities organised and delivered in terms of:
 - a. Boys and girls?
 - b. Different ranges of ability?
 - c. Different ages/year groups?
 - d. Special needs?
 - e. Other(s) (please specify)?
5. The integration and modularisation of subjects and courses are reported in the TVEI programmes of some school. In this respect, what is the situation in the school?
6. The TVEI necessarily entails the introduction of some new subjects and other curricular activities. In this context, and with respect to Timetabling, what approach has the school adopted for timetabling subjects, pupils and teachers? (What is the position in relation to non-subject based activities?).
7. As an educational initiative, the TVEI invariably entails substantial curriculum and staff development activities. In this connection, how have the LEA and the school addressed the issue of curriculum and staff development?

8. Related to staff development is the issue of supply teachers. How has the school addressed the issue of **cover** generally, and in the TVEI in particular?

9. Are there any other relevant points that you would like to add?

Documentation

10. How can I obtain documentation relating to:

- a. Pupil numbers and grouping?
- b. Staff numbers and areas of specialisation?
- c. Pupil and staff timetable?
- d. Other relevant information and/or statistics?

C. For School and Area Co-ordinators and Heads of Department

Administration/Overall Management

1. How widely do you think there is a shared understanding within the school of what TVEI in the school is?

2. In general terms, how would you describe the **management structure** of the school, and how has it been affected by the introduction of TVEI?

3. What are the major **similarities and differences** between the normal resource allocation process in the school and the allocation process in TVEI? (What are the TVEI **allocation centres** or areas, and what are the **criteria** for allocations?).

4. In terms of 'grass roots' participation, how would you describe **staff participation** in decision making generally, and the TVEI allocation process in particular?

5. What are the major areas of **collaboration** between departments and areas in the school? (Do you also have inter school and school-college collaboration?).

6. With respect to **monitoring and Evaluation**, how does the school ensure that resource utilisation in different areas conform with allocation intentions?

7. How far would you say that TVEI activities in the school have been influenced by:

- a. The TA TVEI guidelines?
- b. LEA/Consortium guidelines and policies?
- c. School norms and objectives?
- d. Individuals and groups within the school?

8. What **changes** would you like to be made to the content, organisation and general management of TVEI in the school?

9. How has TVEI affected the relative **status and influence** of individuals, groups or departments within the school?

10. Are there any **other relevant points** that you would like to add?

Documentation

11. How can I obtain **documentation** relating to the allocation of the school's share of TVEI funds in relation to:

- a. TVEI staffing allowances?
- b. TVEI staff development and teacher cover allowances?
- c. TVEI equipment and consumables money?
- d. Other relevant information and/or statistics?

Appendix V

Sample of Covering Letters

Address

Dear ... (first name)

Research on the Management of Resources in the TVEI

I am writing in connection with our meeting of (date and time). I am aware of your normally tight schedule and, as a result, this letter is aimed to give you an idea of the subject of the meeting so that you can think about it before hand at your own time.

The TVEI has, necessarily, involved a number of innovative developments in your school. In this context, an important element of my research is to explore how those developments have been resourced. In doing so I would like to examine the expenditure patterns these developments have involved in terms of teachers, time, and money. The following are indicative of the issues which I will like us to address at the meeting ... (outline of key items of the interview guide).

Thank you for your usual co-operation.

Yours sincerely,

Chris U. Uzodinma
(Signed)

Sample of Follow-up/Thank You Letters

A. Intermediate Follow-Up Letters

Address

Dear ... (first name)

Research on the Management of Resources in the TVEI

I am writing to express my indebtedness to you for your co-operation so far in connection with the conduct of the above named research. I am especially grateful for the time which you have devoted to interviews with me, and for the assembly of relevant documentation which you have also made available to me. Both the interviews and documentation have been extremely useful.

You will be pleased to hear that the fieldwork and, therefore, your role in the study is nearing completion. However, I should very much like your help in connection with the following, which are essential to the successful completion of the empirical work in your school ... (outline of subsequent interviews).

The outcome of the exercise, which I hope will be of value to your school in general and to you and other staff in particular, will be communicated to the school as soon as it is ready. Thank you once more, and I hope that your support and commitment will continue to see that the fieldwork in your school is carried through to a successful conclusion.

Yours sincerely,

Chris U. Uzodinma
(Signed)

B. Final 'Thank You' Letter Letters

Address

Dear ... (first name)

Research on the Management of Resources in the TVEI

I am writing, in connection with the above named reasearch, to thank you for your co-operation and support throughout the conduct of empirical work in your school. As promised in my earlier letter to you, enclosed is the first of a three part draft report of the case studies. The enclosed deals with the nature and form of TVEI activities in the four schools studied. This will will be followed shortly by one on the organisation and delivery of the activities, and another on overall management, including resource allocation and evaluation.

In order to address the the question of anonymity, as promised, the schools have been identified by numbers (1 to 4). Your school is number Please feel free (indeed, you are encouraged) to comment on these drafts. Thank you very much.

Yours sincerely,

Chris U. Uzodinma
(Signed)

The Aims of the 'Entitlement Core' - Both LEAs

1. **Adaptability:** To develop flexibility of attitude and ability to learn sufficiently to cope with future changes in technology, career and life-style.
2. **Role Transition:** To bring about an informed perspective as to the roles and status of a young person in an adult, multicultural society, including the world of work, in order to inform responsible and realistic decision-making as to future opportunities.
3. **Physical Skills:** To enable an appropriate development of physical and manipulative skills in both vocational and leisure contexts, and an appreciation of these skills in others.
4. **Interpersonal Skills:** To bring about an ability to be sensitive to and tolerant of the needs of others, and to develop satisfactory personal relationships.
5. **Values:** To foster a reasoned set of social and moral values applicable to issues in contemporary society.
6. **Communication/Numeracy Skills:** To develop levels of achievement in language, communication and mathematical skills to meet the basic demands of contemporary society and to provide a foundation appropriate to the acquisition of further skills.
7. **Problem Solving:** To develop a capacity to approach various kinds of problems methodically and effectively, to understand

courses of action, evaluate them and modify these actions accordingly.

8. **Information Technology:** To provide an introduction to the implications of information technology to society, the individual and to the processes of learning.
9. **Society, Including Economic Awareness:** To provide young people with a knowledge of the workings of modern society, and to develop abilities both to cope with it and to contribute to its development.
10. **Learning Skills:** To develop sufficient competence and confidence in a variety of independent learning skills to maximise individual potential in work and leisure.
11. **Health Education:** To develop an understanding of health and human development sufficient for young people to choose how they can maintain a healthy life style.
12. **Creativity:** To enable young people to become aware of their own creativity; to develop this and their powers of appreciation and critical judgement for vocational and leisure purposes.
13. **Environment:** To foster an appreciation of the physical and technological environment and its relationship with social and scientific issues and principles.
14. **Science/Technology:** To promote and understanding of the nature and discipline of science, and its relationships to technology via the processes of design and production.

15. **Coping:** to develop the necessary skills for coping in everyday situations together with the ability to collaborate with others and to contribute to their well-being.

Sources: City LEA revised TVEI proposal, November 1986, Appendix I, and Town LEA revised TVEI proposal, November 1987, pp. 6-7.

Appendix VIII

The School Day - Big-City School

Activity	Time	Duration	Actual Teaching Time
Registration	8.40-8.45 am	5 minutes	-
Period 1	8.45-9.20 am	35 minutes	35 minutes
Period 2	9.20-9.50 am	30 minutes	30 minutes
Period 4	9.50-10.25 am	35 minutes	35 minutes
Period 4	10.25-10.55 am	30 minutes	30 minutes
Break	10.55-11.15 am	20 minutes	-
Period 5	11.15-11.50 am	35 minutes	35 minutes
Period 6	11.50-12.20 pm	30 minutes	30 minutes
Lunch	12.20-1.05 pm	45 minutes	-
Registration	1.05-1.25 pm	20 minutes	-
Period 7	1.25-2.05 pm	40 minutes	40 minutes
Period 8	2.05-2.40 pm	35 minutes	35 minutes
Homework/ Supervised Time	2.40-3.30 pm	50 minutes	-
Totals		6 hrs 50 mins	4 hrs 30 minutes

The School Day - Small-City School

Activity	Time	Duration	Actual Teaching Time
Registration	9.00-9.10 am	10 minutes	-
Assembly	9.10-9.25 am	15 minutes	-
Period 1	9.25-10.00 am	35 minutes	35 minutes
Period 2	10.00-10.35 am	35 minutes	35 minutes
Break	10.35-10.50 am	15 minutes	-
Period 3	10.50-11.25 am	35 minutes	35 minutes
Period 4	11.25-12.00 noon	35 minutes	35 minutes
Lunch	12.00-1.00 pm	1 hour	-
Registration	1.00-1.05 pm	5 minutes	-
Period 5	1.05-1.40 pm	35 minutes	35 minutes
Period 6	1.40-2.15 pm	35 minutes	35 minutes
Break	2.15-2.25 pm	10 minutes	-
Period 7	2.25-3.00 pm	35 minutes	35 minutes
Period 8	3.00-3.30 pm	30 minutes	30 minutes
Totals		6 hrs 30 mins	4 hrs 35 minutes

The School Day - Big-Town School

Activity	Time	Duration	Actaul Teaching Time
Registration	8.45-9.10 am	25 minutes	-
Period 1	9.10-10.20 am	70 minutes	70 minutes
Break	10.20-10.40 am	20 minutes	-
Period 2	10.40-11.50 am	70 minutes	70 minutes
Lunch	11.50-12.35 pm	45 minutes	-
Registration	12.35-12.40 pm	5 minutes	-
Perios 3	12.40-1.45 pm	65 minutes	65 minutes
Break	1.45-1.55 pm	10 minutes	-
Period 4	1.55-3.00 pm	65 minutes	65 minutes
Totals		6 hrs 15 mins	4 hrs 30 mins

The School Day - Small-Town School

Activity	Time	Duration	Actaul Teaching Time
Registration	8.55-9.15 am	20 minutes	-
Period 1	9.15-10.00 am	45 minutes	45 minutes
Period 2	10.00-10.45 am	45 minutes	45 minutes
Break	10.45-11.00 am	15 minutes	-
Period 3	11.00-11.45 am	45 minutes	45 minutes
Perios 4	11.45-12.30 pm	45 minutes	45 minutes
Lunch	12.30-1.30 pm	1 hour	-
Registration	1.30-1.45 pm	15 minutes	-
Period 5	1.45-2.30 pm	45 minutes	45 minutes
Period 6	2.30-3.15 pm	45 minutes	45 minutes
Totals		6 hrs 20 mins	4 hrs 30 mins

Appendix IX

Fourth and Fifth Year Programmes: 1989/90 - Big-City School

Subjects Periods	4th Year (280 Pupils)		Subjects	5th Year (278 Pupils)	
	Groups	Periods		Groups	Periods
Core					
1. English	11	5	English	11	5
2. Mathematics	13	5	Mathematics	13	5
3. Design	15	4	Design	15	4
4. Guidance	11	2	Guidance	11	2
5. Humanities	11	4	Humanities	11	4
6. Leisure	20	4	Leisure	20	4
7. Science	13	4	Science	13	4

Option

Three Subjects From:

8. Art	3	4	Art	3	4
9. Bus Studies	4	4	Business Studies	4	4
10. Biology	2	4	Biology	2	4
11. Chemistry	3	4	Chemistry	2	4
12. Child Care	2	4	Child Care	1	4
13. Design & Real	2	4	Design & Realisation	2	4
14. Economics	1	4	Economics	2	4
15. French	5	4	French	4	4
16. Geography	2	4	Geography	2	4
17. German	1	4	German	1	4
18. Graphic Comm	2	4	Graphic Comm'cation	2	4
19. History	2	4	History	2	4
20. Home Economics	2	4	Home Economics	2	4
21. Literature	2	4	Information Tech	2	4
22. Physics	3	4	Literature	1	4
23. Rural Science	1	4	Physics	2	4
24. Spanish	2	4	Rural Science	1	4
25. Technology	2	4	Spanish	1	4
26. -			Technology	3	4

Fourth and Fifth Year Programmes: 1989/90 - Big-Town School

4th Year (280 Pupils) -20 Period Week- 5th Year (278 Pupils)

Subjects	Groups	Periods	Subjects	Groups	Periods
Core					
1. English	14	3	English	13	3
2. Mathematics	13	3	Mathematics	13	3
3. PSE	15	1	PSE	16	1
4. Physical Educ	15	1	Physical Education	13	1

Option

Six Subjects From:

5. Art	6	2	Art	6	2
6. Biology	5	2	Biology	4	2
7. Bus Studies I	1	4	Business Studies I	1	4
8. Bus Studies II	4	2	Business Studies II	4	2
9. Chemistry	6	3	Chemistry	7	2
10. Child Care	2	2	Child Care	2	2
11. Classics	3	2	Classics	1	2
12. Control Tech	1	2	Control Technology	1	2
13. Design & Real	4	2	Design & Realisation	3	2
14. Design Tech	2	2	Design Technology	2	2
15. Food Studies	1		Enterprise	3	2
16. French	7	2	Food Studies	2	2
17. Geography	9	2	French	7	2
18. Graphic Comm	3	2	Geography	8	2
19. History	6	2	German	1	2
20. Home and Food	2	2	Graphic Commu'cation	2	2
21. Media Studies	1	2	History	5	2
22. Modular Sc	3	2	Home anf Food	1	2
23. Music	2	2	Media Studies	1	2
24. Physical Educ	4	2	Modular Science	3	2
25. Physics	3	2	Music	1	2
26. Religious St	1	2	Physical Education	4	2
27. Spanish	8	2	Physics	6	2
28. Textiles	1	2	Religious Studies	1	2
29. Support	8	2	Spanish	5	2
30. -			Textiles	2	2
31. -			Support	6	2

Areas of Specialisation of Teachers in Some TVET Subjects

A. Big-City School

Design: Art, Home economics, Textiles, Graphics and Design and Realisation.

Science: Biology, Chemistry, Physics and General Science.

Humanities: Economics, Geography, History and Religious Education.

Guidance: Art, English, Physical Education and Languages.

Leisure: Physical Education, English, Art, Geography, History, Mathematics and Music.

Information Technology: Computing, Biology, Design and Realisation, Mathematics and Physics.

B. Small-City School

Design: Art, Home Economics, Technology, Textiles, Design and Realisation.

Science: Biology, Chemistry and Physics.

Humanities: Geography, History, Religious Education and Sociology.

Guidance: English, Languages, History, Mathematics and Biology.

Leisure: Physical Education, English, Biology, Chemistry and Mathematics.

Information Technology: Business Studies, Mathematics, Physics and Technology.

C. Big-Town School

Personal and Social Education: Business Studies, English, Languages, Biology, Chemistry, History, Physics, Home Economics, Design and Realisation and Physical Education.

Media Studies: English and Chemistry.

D. Small-Town School

Integrated Learning Programme: Business Studies, Chemistry, Design and Realisation, Geography, History, Mathematics, Physics and Physical Education.

Science: Biology, Chemistry, Physics and General Science.

Media Studies: Art, Design and Realisation, History and Technology.

Appendix XI

Pupil and Teacher-Periods

A. Big-City School

Subject	Periods		Pupils		Groups		*PP		*TP	
	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5
Core										
Guidance	2	2	274	263	11	11	548	526	22	22
Leisure	4	4	274	263	20	20	1098	1052	80	80
Design	4	4	274	263	15	15	1098	1052	60	60
Humanities	4	4	274	263	11	11	1098	1052	44	44
Science	4	4	274	263	13	13	1098	1052	52	52
Option										
Bus Studies	4	4	100	96	4	4	400	384	16	16
Info Tech	-	4	-	36	-	2	-	144	-	8
Totals							5340	5262	274	282

* PP = Pupil-Periods
 TP = Teacher-Periods

B. Small-City School

Subject	Periods		Pupils		Groups		PP		TP	
	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5
Core										
Guidance	2	2	115	133	4	6	230	266	8	12
Info Tech	2	4	115	133	4	6	230	532	8	24
Leisure	4	4	115	133	6	6	460	532	24	24
Design	4	4	115	133	5	6	460	532	20	24
Humanities	4	4	115	133	5	6	460	532	20	24
Science	4	4	115	133	5	6	460	532	20	24
Option										
Bus Studies	4	4	40	33	1	1	160	132	4	4
Info Tech	4	-	30	-	2	-	120	-	8	-
Totals							2580	3058	112	136

C. Big-Town School

Subject	Periods*		Pupils		Groups		PP		TP	
	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5
Core										
PSE	2	2	280	278	15	16	560	556	30	32
Option										
Bus Studies I	8	8	24	20	1	1	192	160	8	8
Bus Studies II	4	4	75	82	4	4	300	328	16	16
Design Tech	4	4	19	17	2	2	78	68	9	8
Food Studies	4	4	11	16	1	2	44	64	4	8
Media Studies	4	4	15	16	1	1	60	64	4	4
Totals							1234	1240	70	78

* The Period is based on 40 rather than the 20 operation in the school.

D. Small-Town School

Subject	Periods*		Pupils		Groups		PP		TP	
	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5	Yr 4/Yr 5
Core										
ILP	8	10.7	82	83	5	5	656	888.1	40	53.5
Science	8	8	82	83	5	5	656	224.1	40	13.5
Design Tech	2.7	2.7	82	83	7	6	221.4	224.1	18.9	16.2
Media St	2.7	2.7	82	83	7	8	221.4	224.1	18.9	16.2
Totals							1754.8	1560.4	117.8	99.4

* The Period is based on 40 rather than the 30 operation in the school.

Appendix XII

Secondments: Big-City and Small-City Schools

	Big-City School	Small-City School
First Wave 196/87	Information Technology Design Guidance Science and Technology Assessment/Records of Achievement	Information Technology Design Guidance Science and Technology Assessment/Records of Achievement
Second Wave 1986/87	Business Studies Humanities Mathematics Modern Languages Science and Technology	Design Humanities Mathematics Special Nedds Science and Technolgy
Third Wave 1987/88	English/Records of Achievement Modern Languages/ Records of Achivement	Humanities Science (Two Terms) Science (one Term)

Source: City LEA TVEI Annual Reports, 1986 and 1987.

Appendix XIII

The Allocation of Equipment

A. Big-City School

Activity	1986/87		1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%	Amount	%
Bus Studies	£ -		2,500	8.9	-		-	
Design	19,074	32.5	774	2.8	-		-	
Guidance	5,667	9.6	450	1.6	-		-	
Humanities	-		8,000	28.3	-		-	
Info Tech	34,045	57.9	2,500	8.9	-		-	
Leisure	-		1,000	3.5	250	12.7	-	
Science	-		8,000	28.3	-		-	
English	-		-		1,720	87.3	-	
Mathematics	-		3,000	10.6	-		-	
Central Res	-		2,000	7.1	-		-	
Performing Arts	-		-		-		1,000	100
Totals	58,786		28,224		1,970		1,000	

B. Small-City School

Activity	1986/87		1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%	Amount	%
Bus Studies	£ -		-		-		-	
Design	2,946	12.3	-		-		-	
Guidance	2,193	9.1	-		-		-	
Humanities	-		1,326	10.6	-		-	
Info Tech	18,849	78.6	2,380.68	18.8	-		-	
Leisure	-		1,003.68	8.0	-		-	
Science	-		3,430.99	26.5	-		-	
Central Res	-		3,521.46	27.9	-		-	
Performing Arts	-		-		2,000	100	1,000	100
Admin/RoA	-		225.64	1.8	-		-	
Special Needs	-		228.40	1.8	-		-	
Totals	23,988		12,623.69		2,000		1,000	

C. Big-Town School

Activity	1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%
Bus Studies	£11,581.50	43	1,980	21.6	-	
Design Tech	9,140.28	33.9	1,426.9	15.6	-	
Food Studies	-		1,430	15.6	-	
Media Studies	6,212.02	23.1	1,750	19.1	-	
Admin/Others	-		2,579.1	28.1	-	
Totals	26,940.80		9,166.10		-	

D. Small-Town School

Activity	1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%
ILP: IT	£ Unavailable		1,500	16.4	-	
Bus St	"		1,500	16.4	-	
Com St	"		800	8.7	-	
Guidance	"		<u>500</u>	<u>5.4</u>	-	
Total	"		4,300	46.9	-	
Design Tech	"		1,000	10.9	-	
Media Studies	"		1,000	10.9	-	
Science	"		1,500	16.4	-	
Admin/Others	"		1,400	15.0	-	
Totals	"		9,166		-	

Appendix XIV

Allocation of Consumables

A. Big-City School

Activity	1986/87		1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%	Amount	%
English	£ -		-		-		300	4.5
Mathematics	-		-		-		667.73	10.1
Bus Studies	-		400	8.5	500	10.7	515.43	7.8
Design	1,603	49.3	1,250	26.5	1,007	21.6	1,500	22.7
Guidance	257	7.9	180	3.9	401	8.6	400	6.1
Humanities	-		1,000	21.2	750	16.1	908	13.7
Info Tech	1,032	31.7	450	9.5	100	2.1	200	3.0
Leisure	226	6.9	500	10.6	450	9.6	563.24	8.5
Science	-		500	10.6	250	5.4	259.10	3.9
Performing Art	-		-		-		168	2.6
Admin/RoA	137	4.2	442	9.3	1,210	25.9	1,128.50	17.1
Totals	3,255		4,722		4,668		6,610.00	

B. Small-City School

Activity	1986/87		1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%	Amount	%
English	£ -		-		150	6.1	-	
Mathematics	-		129.16	6.2	291	11.9	220	7.9
Bus Studies	-		-		71	2.9	-	
Design	925	65.5	340.29	16.2	291	11.9	200	7.2
Guidance	117	8.3	278.03	13.3	291	11.9	295	10.6
Humanities	-		427.37	20.4	291	11.9	300	10.8
Info Tech	300	21.2	292.65	13.9	291	11.9	-	
Leisure	-		290.65	13.9	291	11.9	150	5.4
Science	70.5	5.0	42.23	2.0	291	11.9	300	10.8
Languages	-		-		-		250	9.0
Performing Arts	-		-		-		500	18.0
Music	-		-		-		125	4.5
Special Needs	-		12.80	0.6	-		195	7.0
Central Res	-		8.50	0.4	50	2.0	-	
Admin/RoA	-		274.61	13.1	141	5.7	245	8.8
Totals	1,412.50		2,096.29		2,449		2,780	

Allocation of Consumables

C. Big-Town School

Activity	1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%
Bus Studies	£ Unavailable		-		75	2.9
Design Tech	"		561.85	62.4	-	
Food Studies	"		50.80	5.7	-	
Media Studies	"		-		-	
PSE	"		-		1,000	38.6
Economics	"		-		350	13.5
Admin/Others	"		287.35	31.9	1,163.10	45.0
Totals	"		900		5,588.10	

D. Small-Town school

Activity	1987/88		1988/89		1989/90	
	Amount	%	Amount	%	Amount	%
ILP: IT	£ Unavailable		250	27.8	250	16.7
Bus St	"		250	27.8	250	16.7
Com St	"		100	11.1	100	6.7
Guidance	"		<u>100</u>	<u>11.1</u>	<u>100</u>	<u>6.7</u>
		Total	700	77.8	700	46.8
Design Tech	"		100	11.1	200	13.3
Media Studies	"		100	11.1	200	13.3
Science	"		-		400	26.6
Totals	"		900		1,500	