Secondary Technical Schools in England and Wales:
A Study of Administrative and Curriculum Policies.

by

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Abstract

The impact of vocationalism on secondary education in England and Wales has been limited in range and incidence. This study examines some of the attempts to give expression to practical education in schools between 1889 and 1965. It focuses on institutions specifically charged with providing a technical education to pupils of secondary school age, with particular reference to Junior and Secondary Technical Schools.

Collectively, the technical schools were casualties of policies which emphasized their instrumental nature, and which failed to secure their ambiguous institutional foundations. This impeded the projection of the educational benefits of vocationalism. Nor were curriculum policies clear about the favoured methods, content or disposition of secondary technical education. Practical education denoted an ambition rather than an agreed approach to secondary education. Administrative and curriculum policies lacked the coherence necessary if new ideas were to be presented successfully.

These contentions are elucidated through an examination of central and local policies. These were determined by the interaction between administrative, professional, industrial and political interests. Reference is also made to some of the contemporary justifications of practical education. Enabling policies originated in the localities and found expression in a number of institutions. They were belatedly endorsed by the central department.

In the process an 'ideal' type emerged, the 'Technical High School of Science'. It was intended to be the vocational counterpart of the academic grammar school. With its emphasis on scientific and technological concerns it represented one strand of practical education.

Changes in science, technology and employment have meant that the curriculum of the technical schools no longer reflects contemporary needs. Their concern with practical education, however, remains undiminished. Their importance lies in the assistance they provide in posing questions about present day practices.

The history of the technical schools underlines the need to define precisely the meaning of vocationalism. In the period under discussion, 'vocationalism' was the starting point for disagreements about the nature and purposes of practical education. 'Liberal' vs. 'Vocational'; 'Education' vs. 'Training' were standard formulations which left little room for synthesis. The case for vocationalism was un-coordinated. It was hindered by a disinclination to include curriculum issues alongside matters of provision. It was left to individuals, sectional groups, and sympathetic administrators who approached the subject from a multiplicity of viewpoints and institutional settings.

CONTENTS

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ABBREVIATIONS

A C S P   ..   ..   ..   Advisory Council on Scientific Policy

A D S E   ..   ..   ..   Association of Directors and Secretaries for Education

A E C .   ..   .   Association of Education Committees

A H S T S .   ..   ..   Association of Heads of Secondary Technical Schools

A M C   ..   ..   ..   Association of Municipal Corporations

A P T I   ..   ..   ..   Associations of Principals of Technical Institutions

A T E S   ..   ..   ..   Association for Technical Education in Schools

A T I   ..   ..   ..   Association of Technical Institutions

A T T I   ..   ..   ..   Association of Teachers in Technical Institutions

Balfour   ..   ..   ..   Committee on Industry and Trade, Factors in Industrial and Commercial Efficiency, Part 1, (1927)

B E F .   ..   .   British Employers' Federation

B A T C   ..   ..   ..   Building Apprenticeship and Training Council

C A C E   (England).   Central Advisory Council on Education (England)

C A C E   (Wales) ..   Central Advisory Council on Education (Wales)

C C   ..   ..   Consultative Committee

C C A   ..   ..   ..   County Councils Association

C E O   ..   ..   ..   Chief Education Officer

C I   ..   ..   Chief Inspector

Clerk .   ..   .   Board of Education, Education for the Engineering Industry, (1932)

C P A C R   ..   ..   Conservative Party Annual Conference Report

C P C ..   ..   Conservative Political Centre

C B   ..   ..   County Borough

E C   ..   ..   Education Committee

Emmott . ..   .   Association of Teachers in Technical Institutions, Report of an Inquiry into the Relationships of Technical Education to other Forms of Education and to Industry and Commerce, (1927)

E E F ..   ..   Engineering Employers' Federation

F B I ..   ..   Federation of British Industry

G C E ..   ..   General Certificate of Education

Green Book   ..   ..   Education after the War, (1941) Never Published.

Hadow   . ..   .   Board of Education, Report of the Consultative Committee on the Education of the Adolescent, (1926).

H M C ..   ..   Head Masters' Conference

H M I ..   ..   Her Majesty's Inspector(ate)

H N C ..   ..   Higher National Certificate

H N D ..   ..   Higher National Diploma

h.c. deb ..   ..   ..   House of Commons Debates (Hansard)

I A H M   ..   ..   ..   Incorporated Association of Head Masters.

I C T E   ..   ..   ..   International Congress on Technical Education

J E B   ..   ..   ..   Joint Education Board

J T S   ..   ..   ..   Junior Technical School

L P A C R	Labour Party Annual Conference Report
L E A	Local Education Authority
L C C	London County Council
Malcolm	Board of Education and Ministry of Labour, <u>Report of the Committee on Education and Industry (England and Wales)</u>, ii, (1928).
M I T	Massachusetts Institute of Technology
N A C E I C	National Advisory Council for Education in Industry and Commerce
N A L T	National Association of Labour Teachers
N U J M B	Northern Universities Joint Matriculation Board
N U T	National Union of Teachers
Norwood	Board of Education, <u>Curriculum and Examinations in Secondary Schools</u>, (1943)
N C P	Notes on Current Politics
O N C	Ordinary National Certificate
O N D	Ordinary National Diploma
R C	Roman Catholic
P E P	Political and Economic Planning
R I B A	Royal Institute of British Architects
S R O	Staffordshire Record Office
S S E C	Secondary School Examination Council
S T S	Secondary Technical School
Spens	Board of Education, <u>Report of the Consultative Committee on Secondary Education with Special Reference to Grammar Schools and Technical High Schools</u>, (1938).
S 1	Stage One (National Certificate)
T C	Technical College
T H S	Technical High School
Thomson	Committee to Inquire into the Position of Natural Science in the Educational System of Great Britain, Cd. 9011, 1918.
T E S	Times Educational Supplement
T U C	Trades Union Congress
T U C A R	Trades Union Congress Annual Report
V A	Vocational Aspect

INTRODUCTION

(i)

At long intervals and in changed contexts attention has been drawn to the neglect of practical education in secondary schools. Its omission was raised in the Taunton Report (1868); made explicit in the Bryce Report (1895) at a time when the secondary curriculum was becoming more open to interpretation; repeated in the Spens Report (1938); made a cardinal principle of curriculum reform in the Crowther Report (1959); and resuscitated in the 'Great Debate' (1976). All were major statements of educational intent. Yet progress has been modest.

This study is a contribution to the history of vocationalism in schools. It examines the origins, development and demise of institutions specifically charged with providing a technical education for pupils of secondary school age, with particular attention to junior and secondary technical schools. The period delineated (1889-1965) embraces the early growth and maturity of policies that resulted in universal secondary education.

Schools reflect in their administrative arrangements and curriculum policies the conditioning agency of dominant cultural assumptions. This awareness has encouraged an approach to the study of education which stresses the social contexts and historical evolution of institutional practices.[1]

Martin Wiener has characterized British ambiguity towards the technological foundations of industrial

society as,

> "a cultural 'cordon sanitaire' encircling the
> forces of economic development - technology,
> industry, commerce .. this mental quarantine."2

Secondary schools have always sought to reconcile social

purposes with individual development. As such they

have always embraced vocationalism. In its technological

guise, however, vocationalism has frequently been

regarded as incompatible with 'liberal' educational

purposes.

Industrialization transformed occupational and

social structures. It called into being a whole

apparatus of education and training based on the

application of science, and the acquisition of technical

skills. But it has been accompanied by uncertainty and

disagreement about the compatibility of vocation with

education. The interface between industrial work,

schooling and personal development has not been fertile

educational territory. Practical education has not

stamped its impress on the secondary curriculum.

(ii)

This study approaches its subject by an account of

national and local policies for technical education in

schools. These policies were critical in determining

conceptions of vocationalism. The greater part of the

thesis, accordingly, is an account of the interactions

between the central department and the local authorities.

These are examined in conjunction with important interest

groups which helped determine policies, including the

political parties and 'industry', as well as professional

points of view.

This approach does not fully capture the texture

of institutional discussions, much less show where
critics of academicism were 'coming from'. In order
to make discussions about vocationalism concrete the
institutional generation of policies is investigated, and
related (where possible) to the educational critique of
academicism. 'Training' was an essentially normative
activity which took as its rationale industrial
requirements. The case for practical education required
intellectual foundations and nourishment. Chapter 9
outlines some of the eclectic views of educationalists,
and Chapter 10 examines some of the institutional
responses to secondary technical education.

The constraints placed in the way of the junior
technical schools meant they were collectively prevented
from developing a programme of practical education. The
period before 1944 did, however, witness the emergence
of the foundations of secondary technical education.
The opinions of leading individuals associated with
the technical schools, moreover, were formed in the
1930s and 1940s .

Institutional responses were undoubtedly less
important in shaping policies than the wider administrative
determinants of vocationalism. They show, however, that
competing concepts of vocationalism and the lack of
coherence about content and methods, were as evident
among the schools as in the wider context.

Thus, there was an absence of agreement about the
nature of secondary technical education at both the
organizational and institutional levels. Competing
interpretations of vocationalism meant that tensions
between instrumental and educational points of view

were never widely reconciled.

In the organizational context there was much controversy - lessening after 1944 but never stilled - between labour market functions and educational values. At times, there was some doubt about whether the technical schools were 'proper' schools at all, or pre-apprenticeship institutions.

Institutionally, this was represented in disagreements about purposes. A number of schools sought to promote scientific understanding via craft and technical activities. In others, their role was seen as the development of work-related skills, or even the mastery of a single technique. In the 1950s attempts to enhance the status of practical education emphasized its selective nature.

The craft inheritance was played down (finding a home in the modern school) and scientific and technological preparation. stressed. This was in harmony with administrative policies but was accompanied by a growing 'purity' of outlook.

The schools were a heterogeneous group of institutions although the range of courses offered decreased as the 'selective - scientific' ideal grew. This was typified by the (boys) technical high school which represented only one strand among the arguments for vocational education in schools.

(iii)

The sources consulted have suggested a conceptual framework for discussion and analysis. This study, except for illustrative references to classroom practices, is concerned with macro-level determinants of vocationalism.

The 'official mind' is well-represented in the discussion of administrative issues (Chapters 1-8). The principal sources used are the records of the central departments for education held at the Public Record Office (PRO), and the Association of Education Committees collection (AEC) deposited in the University of Leeds. The Raybould Papers, housed in the Museum of Education at Leeds University have also been consulted. They contain material relating to the activities of the Central Advisory Council on Education (England) in the 1950s. As yet, these papers are unavailable elsewhere, including the PRO.

The material in the Public Record Office has been indispensable. The range and preservation of its educational holdings over long periods is much greater than for any other single source consulted. Reliance on the PRO has been increased because there is no authoritative account based on archive sources of technical education for the whole of the period examined here. Popular secondary accounts, meanwhile, like Brian Simon (1974)[3], have proved to be an unreliable guide to the policy issues discussed. The Raybould Papers, meanwhile, allow a comparison to be made between the Council and the Consultative Committee which it closely resembled. They also reduce dependence on published sources where archive material is closed under the 30 year rule.

The AEC Collection has been particularly useful. The Association grew in influence through the period, and acted as a channel of communication between the central department and the local authorities. Its

records are in a good state of preservation, especially after 1945, and are helpfully catalogued.

This compares favourably with the highly variable preservation and access to individual local authority records. It was decided at an early stage not to attempt local case studies. Coverage of a worthwile area would have altered the scope of the thesis. It was far from clear, in any case, that detailed relationships would be revealed. The nature of surviving or accessible records make it unlikely that it would be possible to plot, for example, relations between schools and industry. Occasionally, locally orientated theses have cast some light on these issues. For the most part records of particular institutions are unavailable. Many Inspectorate reports on technical schools are still closed. Log Books, meanwhile, are imperfectly preserved and frequently not open to consultation.

The Development Plans of local authorities were consulted extensively. They provide a detailed account of the conceptions (and some of the influences) which shaped secondary organization. Their uses are discussed in Chapter 7.

Other influences on policy making are examined through a range of sources.

The extensive collection of material available on microfiche for the study of political and trade union attitudes has greatly reduced dependence on Hansard and conference reports. The records of both sides of industry are, however, unrepresentative. For employers especially they are really a selection of opinions from well-organized capital intensive industries. These views

have been gleaned from a variety of published sources.
The FBI papers share these characteristics and additionally
are the records of a highly political group of employers.
Before 1945 its Education Committee was generally
doubtful about the value of education for industry.

Smaller archives which have been useful were those
of teaching associations, the ATTI and the NUT. They cast
light on professional anxieties and also provide
information about junior technical schools, teacher
supply and examinations.

The chapters dealing with curriculum issues seek
to describe the flavour of contemporary discussions and.
point to dominant practices in vocational education.
Chapter 9 contains a discussion of some of the educational
foundations of practical education. Particular points
of view are illustrated by reference to individual
commentators selected on the grounds of their clarity of
exposition or influence.

Material on institutional practices is far more
plentiful for the period after 1944 when the secondary
technical curriculum was being 'worked out'. The
educational press and journals like Vocational Aspect
contain a great deal of information on technical education
in schools. Greatest reliance, however, has been
placed on the records of the Association of Heads of
Secondary Technical Schools (AHSTS). The Association was
the most vocal supporter of practical education in
technical schools. The records must be used with
caution. The Association represented the male,
engineering tradition in technical education. It did not,

therefore, possess the universality its members
sometimes claimed.   United in their opposition to
academicism, the Associations' members were clearer on
desired outcomes from than inputs to the curriculum.
They were unable, therefore, to present a collective
policy.   The Association acted as a 'general' support
group for members; its outlook was particularist.   This
diminished further its effectiveness.

(iv)

This is a historical study of vocationalism.
Mindful, however, that antecedents shape later educational
practice, it sheds light on related contemporary concerns.
Despite the changing context of science (even within the
period under discussion), the social context has ensured
that practical education is yet to be firmly established
in schools.   Most notable is the enduring nature of the
education vs. training mentality regarding vocationalism,
and the predominance of reflective over practical
secondary education.

CHAPTER 1

The Background to Planning for Secondary Technical Education, 1851-1914.

(i)

This chapter will provide a brief retrospective account of the wider considerations which shaped the development of secondary technical education. Practical education has not been a distinctive feature, nor occupied a prestigious place within secondary schools in England and Wales. Its absence is surprising in view of Britain's early Industrial Revolution, and by comparison with other industrial nations. The deficiency has provoked surprise in recent observers. Yet it is important to grasp the perennial nature and essential continuity,[1] rooted in cultural assumptions, of the antipathy toward practical education. Furthermore, too great a coherence should not be ascribed to the case for vocationalism in schools.

(ii)

1851 marked the apogee of Britain's industrial pre-eminence and Victorian business self-confidence. It was symbolized by the Great Exhibition. In reality, it was the high noon of Britain's predominance. Thereafter, she was rivalled, and then overtaken by Germany and the United States before 1914. The international exhibitions which punctuated the second half of the century vividly demonstrated the growing insecurity of Britain's position. Private apprehension[2] became a matter of public concern after the Paris Exhibition of 1867.[3]

The mood of introspection and doubt was maintained by individuals and extra-governmental bodies concerned at Britain's comparative educational deficiencies. Lyon Playfair, a Liberal and an elder statesman of Victorian science visited the Paris Exhibition and made known his disquiet in a supplement to the Taunton Commission's Report.[4] Skilled men concurred with his view.[5] The shock of Paris was the catalyst which led to the setting up of a Select Committee under the ironmaster, Bernhard Samuelson to look into the matter of 'Scientific Instruction'. Technical education from its earliest days was associated with economic advantage and competitive efficiency. The relationship was not susceptible to direct proof but became a touchstone of enlightened (often Liberal) opinion.

The world's first industrial nation exhibited a number of special characteristics that conditioned subsequent development. Her manufacturing base was dependent upon the import of foodstuffs and raw materials and the export of finished goods. Machines were widely applied to production, labour extensively sub-divided, and the population increasingly urban. Yet the degree of labour skills was low. Cotton and coal were staple exports in 1914. Not least, in the nation which stood at the centre of the international economy, advances in productivity had been accomplished without a national system of instruction. Such educational provision as existed was typified at the elementary level by extreme localism, wide regional variations until 1870 and beyond, and was dominated by religious questions until at least 1902.

Access to secondary education, meanwhile, was restricted
and the curriculum (with notable exceptions) was dominated
like that of the two ancient universities, by classical
traditions which served other needs, either well-
established like the Church, or more recent like the
administration of Empire.

Formal government interest in education dates from
1833 when a grant was made to the two principal educational
charities which represented the Established Church and
the Protestant denominations and administered by the
Treasury.

In consequence, the demand for scientific and
technical instruction before 1870 was "handicapped by the
low general educational attainments of many students."[6]
It is in this context that the failure of the most
interesting forerunner of the movement for improved
technical instruction must be seen. The mechanics'
institutes which sprang up before 1851 soon found themselves
diverted from their avowed task of promoting scientific
education. Instead, where they did not fall under the
domination of middle class and clerical interests they
became a channel of basic educational provision, a need
which for many institutes became a 'raison d'être' till
1870.[7]

It would be wrong to suppose that this characterization
of education in England and Wales - unfriendly in
disposition to scientific and technical provision -
had not been significantly altered in detail by 1900.
The spur of foreign competition and the efforts of individuals
had kept the educational issues alive,[8] and aroused the

interests of politicians. Meanwhile, the university colleges,certain public schools, the higher grade schools, day technical schools and polytechnics transmitted a body of technical knowledge and skills into the new century. Not least, the training provided by the Scottish institutions of higher education was well regarded, even in Europe, and individuals had an impact on the English higher grade schools.[9]

By contrast, Britain's industrial rivals, especially Germany, America and Japan furnished object lessons in the parallel development of industry and education. In Germany and Japan the state, and in the United States local and industrial interests sought to integrate educational provision in a series of end on stages - elementary, secondary and higher, and had fewer pre-conceptions about the content of secondary education.

Propagandists are apt to make much of the novel. The MIT was not typical of American higher technical education. The wide differences of standard between American high schools was admitted by those who sought inspiration in overseas practice.[10] Japanese institutions, headed by a panoply of Imperial Universities were quite different in their social origins to their European counterparts. Nonetheless, late Victorians interested in scientific and technical education regarded English provision as ramshackle and muddle-headed. A number of influential commentators like Playfair, Henry Roscoe and R.B. Haldane had direct experience of German higher education. Haldane became the leader of a powerful pro-German 'cult'.[11] He suffered for his exertions at the

hands of those who saw in Teutonic effectiveness not only
a model and a competitor, but a military state on a path
of collision with Britain after 1890.[12]

Education as a national investment was a theme
developed in the later years of the century.[13] The
stages by which government interest in technical education grew
are well known.[14] It was not subject to long term
planning. By contrast, the framework of co-operation with
the religious denominations promised to realise the hope
of a universal system of elementary education before 1900.

The activities of the School Boards, and the work
of the Technical Instruction Committees, and corporations
like the Society of Arts and the London Chartered Companies
did much to promote commercial and technical courses.
This was encouraged by the Department of Science and Art,
notably through the School Boards in the large towns.
Its support took the form of sponsorship of day technical
classes within the 'Higher Grade' elementary schools.
The upper forms in consequence of their scientific
bias were known as 'Organized Science Schools.'[15]

The strength of the voluntary principle provided
interesting examples of technical education between
1853-1889 (from the inception of the Department of Science
and Art to the emergence of the Technical Instruction
Committees). Perhaps most interesting in this context,
because they were the direct ancestors of the secondary
technical schools, were the trade schools. They originated
from a variety of initiatives, including the work of the
Mechanics' Institutes, National Schools, Schools of Science
and Art, as well as the resuscitation of grammar school
endowments which had fallen into decline.

Widely dispersed, their purpose was to provide instruction for working class boys as a preparation for further training and apprenticeship "..in the engineering, building, and manufacturing trades.. as applied to industry."[16] Because they drew grants from the Department of Science and Art, their curriculum was scientific rather than technical, and seems to have excluded trade instruction or much workshop practice.

The school at Keighley is an interesting example of the coincidence of local initiative and official assent. It is instructive because it indicates that where there was an absence of local 'secondary' schools the 'trade school' - teaching 'general principles' with an admixture of 'liberal' study, was warmly supported. This enabling outlook was to change especially after 1917 even though a programme of educational extension was planned before the First World War.

At Keighley, the desire to provide "..a practical or scientific education"[17] had moved beyond part-time evening study to full-time day secondary training. The capital had been subscribed between 1867-70 by a local society, the Yorkshire Board of Education and the Managers of the Keighley Mechanics' Institute. The school was organized under the aegis of the Mechanics' Institute into post-elementary and upper departments providing an extensive commercial and industrial preparation.[18]

The voluntary principle and localism were the twin pillars on which the administrative structure of late nineteenth century elementary education were erected. In this way, by 1902, the managers of 14,000 voluntary schools and 2,500 School Boards provided compulsory

education for all children up to the age of 12. In some quarters this administrative structure came to be regarded as in need of wholesale reform. The pursuit of a greater collectivism, and hopefully, improved efficiency saw the substitution of the local authority in place of the 'ad hoc' educational committees. This triumph was enshrined in the Education Act of 1902.

The solution of 1902 had been prefigured in administrative detail, most notably in the Technical Instruction Act of 1889.[19] The Act enabled county and borough councils (created after 1888), to provide for technical instruction by means of the product of a 1d. rate. The Technical Instruction Committees were put on a secure footing by the grant of 'Whisky Money' in 1890, and displayed a particular interest in extending technical and secondary education. Importantly, the setting up of the Committees challenged the work of the School Boards in the higher grade schools.[20] The 'Cockerton Judgement' (1901) found against School Boards who were deemed to have exceeded their function of providing elementary education, thereby competing for the grants of the Department of Science and Art with institutions sponsored by the Technical Instruction Committees.

At any rate, the higher grade schools and the work of the Technical Instruction Committees stimulated the growth of science education in schools. The removal of 'scientific' education after 1902 to the realm of avowedly secondary education meant that the place of science in the curriculum was threatened since it was no longer a grant earning subject as it had been in the organized science schools. The Secondary School Regulations of 1904

confirmed the place of science in the secondary schools, and appeared to lend support to the development of "practical science .. as a compulsory component of a sound, general education" in place of the "primarily industrial" ideal which had conditioned the outlook of most teaching conducted under grants from the Department of Science and Art.[21]

The curricula of schools reflected occupational destinies, and were devised with the various social classes in mind. The 'mere trade schools' comprehended under the Regulations for Junior Technical Schools in 1913 were placed under the auspices of further education. This reflected a growing doubt about the inclusion of practical work in secondary schools, as signifying premature vocational specialization. "..The best place for a young man to learn the practice of his trade or business," wrote one late century commentator, "is in the workshop or office.."[22] Only in the case of manual trades which did not depend on general knowledge for an understanding of their practice was this principle waived in favour of the acquisition of skills by future artisans, where agreement could be reached with employers and trade unions.

Provision of technical education before 1914 was directed at supervisory and managerial grades. It was undertaken in senior technical colleges. Typically it was part-time and took place outside working hours so that success depended on a high degree of personal motivation.

For other groups, the stock of human capital was increased by fostering traits conducive to good work discipline and obedience to authority. This was

achieved through the elementary schools, and by a growing support for some system of continuation classes.

Within this framework, vocational specialization, notably the trade schools were seen as a valuable adjunct to educational provision within their localities, but which fitted uneasily into the system of national priorities. The movement for 'educational efficiency', for example, cast its recommendations in terms of the need for a general education designed to improve the level of personal skills.[23]

Industrialization furnished contemporaries with good reasons to think along these lines. The principal result of occupational change - or so it seemed - was a decline in skills within the workforce as a consequence of excessive sub-division in the methods of production, and the virtual expiry of the system of apprenticeship. The position was exacerbated by the widespread employment of children and women, together with forms of urban underemployment (dockers were the most often cited example) likely to result in personal demoralization and social decay.[24]

(iii)

Britain's declining competitiveness was the catalyst for an increased emphasis on education, especially technical education, as a national investment. This influenced the disposition of technical education and introduced the dualism with which it has had to contend ever since. 'Liberal' vs. 'Vocational' has divided all formulations of technical education.

During the 1890s it seemed that practical education would find a place in secondary schools. The mood passed.

Technical education found itself on the margins of secondary education. Its educational foundations were poorly developed. The result was that instrumental interpretations prevailed and vocationalism confined to sub-secondary institutions. The education system itself reflected occupational and even social classification. Technical education was unable to challenge the pre-eminence of academic education and its influence remained peripheral in the curriculum of secondary schools.

CHAPTER 2

Education and the Replication of the Social Order: Central Policies, 1900-1939.

(i)   Introduction.

        This chapter contains a discussion of the complex of influences which shaped central policy making. It will show that the structure of the educational service was defined very largely in terms of the occupational future of pupils. The result was that utilitarian justifications of technical education took precedence over the educational benefits of vocationalism. The former criterion meant that Junior Technical Schools were accepted as an anomalous but important part of provision for secondary age pupils in certain areas. The latter threatened to disrupt the system of secondary education and cut across the policy of increasingly selective secondary schools favoured by the Board of Education. These policies were reinforced by the acute financial restraints on educational reconstruction and the multiplicity of 'codes' under which schools were administered. Above all, a well-defined and understood social structure meant that the disinterested officials of the Board saw themselves as balancing educational opportunity with employment possibilities. 'Training for employment', therefore, could have a particular meaning in the context of a differentiated system of schools.

(ii)   Unskilled Adolescents.

'Technical' education for skilled workers and
scientific managers, 'general' education for the rest
seemed to be the lesson of industrialization. "The
need was not for technical instruction," George Lansbury
told the Consultative Committee in 1909, "but for
a development of the intelligence.."[1] This was because
most employment presented few opportunities for the
development of skills.

The problem of poverty associated with irregular
employment (most clearly revealed in the monumental
studies of Booth and Rowntree) was taken up by early
twentieth commentators and administrators, convinced
of the part education might play in effecting social
advance. The greatest cause for concern was "boy
labour"[2] which compromised the elementary school leaver
by offering early reward for unskilled effort. But
educational programmes could not be devised or discharged
by competitive industry.[3] This was a legitimate task of
educational extension within parameters determined by
industrial organization. This meant that for the great
majority of future unskilled workers a good elementary
education would enable them to "be energetic, intelligent,
careful, resourceful, trustworthy and adaptable.."[4]

The "manufacture of inefficiency", observers agreed
was not the fault of the elementary schools which promoted
good habits often against powerful retarding influences.[5]
But crucially, the good influence of school was lost
between the ages of 14 and 18. Increasingly popular
among educationalists, the labour movement and some

employers was the idea of part-time day continuation schools.

The system of continuation classes was already a well-established part of educational provision. They were usually conducted in the evening. Their subject matter was wide and included technical courses. The Technical ('T') Branch at the Board of Education was always more concerned with part-time courses than with full-time provision. "No one can understand the system of technical education in England", declared Robert Blair, "who has not fully grasped the meaning of Evening School work..."[6]

The extension of the continuation principle to the general education of young unskilled workers in daytime was the most congenial solution to the problems of social wastage before and shortly after the first world war. They were the spearhead of educational advance outlined in the Education Act of 1918, largely as a result of the Herbert Lewis Committee,[7] which "indicated the trend of progressive opinion",[8] insisting that 18 (not 16) should be the upper age limit.

The continuation schools were never widely established as a result of educational retrenchment. But in any case the raising of the school age, together with increased voluntary school attendance beyond 14 (in all types of elementary and technical institution) seemed to be evidence of a growing recognition of the value of education by parents and pupils alike. This was not, however, always in directions favoured by the Board of Education, a disquiet that mounted from the late 1920s and given particular force during the

economic recession of the 1930's.

(iii)   The Growth of 'Secondary' Education: Salaried
        Employment for Boys and Girls.

The most worrying gap in provision to informed
contemporariesbefore 1914, however, was secondary
education. In particular, the intermediate (Grade III)
secondary schools suggested by the Taunton Commission
(1868) were in need of considerable expansion if
national requirements and demand for an extended
education were to be met.

The growth of secondary education after 1900
is one of the most important developments in the
education service during the twentieth century. This
built on foundations laid in the previous decade, a
period during which the interpretation of what
constituted a secondary education was not yet formalized
to exclude technical subjects. Contemporaries
observed that secondary schools should offer scientific
study of a technical nature as a preparation for
advanced work in the "technical high school or science
university."[9]

In England at least the new secondary schools
constituted under the local authorities during the 1880's
were directed at "the improvement of scientific and
commercial education."[10] Earlier still the Department
of Science and Art had encouraged the growth of technical
education in organized science schools instituted
in 1872. These 'schools' - in reality the upper forms of
elementary and secondary schools - were greatly expanded
after 1895 with the introduction of a method of payment
based on inspection grants. This growth took place
mainly under the supervision of the local 'Technical

Instruction Committees' rather than the School Boards.

They were therefore classified as 'technical' or

'secondary' schools -

> "the industrial Department for the continuative
> education of the labouring classes became one of
> the central authorities for aiding the secondary
> education of the middle classes."[11]

Table 1

The Growth of Organized Science Schools, 1883-1897.

Year	No. of Schools	Pupils
1883	5	256
1893	64	-
1895	98	-
1897	137	18,560

Table 2

Organized Science Schools by Type, 1892-1897.

Year	No. of Schools	Higher Grade (School Board)	Technical (Local Authority)	Secondary
1892	39	24	8	7
1897	137	63	28	46

Based on: H. Macan, 'The Development of
Technical Instruction in Secondary Schools etc',
ICTE, (1897), 156;163.

The growth in post-elementary technical education revealed a shift of emphasis (locally determined) from the "working man" to the "talent catching" theory of technical education[12] - that is, an education that was selective and secondary. Thus, Herbert Macan cited with approval "experts" who likened the efforts of the County Councils to German prototypes which had resulted in the creation of the Real-Schule.[13] The decade proved to be one of remarkable openness in curriculum policies. Thereafter technical subjects were progressively excluded in the re-formulation of secondary education , especially after 1917.

Subsequently, critics of academicism looked back to the 1890s ,and in particular regarded the Bryce Report (1895) as a landmark in the recognition of the place of practical education in secondary schools. But, the curriculum had been subverted by Robert Morant to whom authorship of the 1904 Regulations for Secondary Schools - "based wholly on the tradition of the Grammar Schools and the Public Schools"[14] - and a charter for academicism, was ascribed. This is an extremely partial guide to the thinking behind attempts to formalize the secondary school curriculum and greatly over-estimates the influence of Morant, but has been highly influential.

In fact, science was included in the curriculum of all secondary schools. Indeed, some organized science schools had epitomized the balance aimed at in 1904. Pupils were not permitted to specialize at an early stage in their courses and 'general' subjects were continued. The Bryce commission had singled out, for example,

the work of the Leeds Central High School[15] where the curriculum displayed something of the balance announced in 1904. As late as 1928 it was possible for the practical and technical courses in secondary schools to attract favourable attention.[16]

But for the most part the considerable expansion of secondary education - halted by the First World War - but re-gaining momentum thereafter took place without reference to practical education. The price of introducing a common standard - the School Certificate Examination - was that the curriculum became increasingly academic since it was a matriculation test. The schools, moreover, were geared up to send pupils directly into clerical employment, teacher training, the universities and the black coated professions.

Table 3.

Maintained Secondary Schools (England and Wales): Number of Schools and Pupils, 1918-1938.

Year	Schools	Pupils
1918	1061	238,314
1923	1270	358,531
1927	1319	371,493
1929	1341	386,993
1933	1378	441,883
1936	1389	463,906
1938	1398	470,003

Based on: Board of Education,

Annual Reports.

Between 1918 and 1938 the number of secondary school pupils more than doubled to over 470,000. The increase was most rapid in the 1920s (1918-29 up 62%), falling to only about one-third of that rate of growth in the 1930s (1929-38 up 22%).

(iv)   The Emergence of Junior Technical Schools.

Junior technical schools did not have auspicious precedents. Technical education for adolescents retained about it associations with "penal discipline and early disgrace.."[17]   Their purpose however was to diffuse technical skills more widely acting as pre-apprenticeship institutions. They were formally instituted in July 1913 by the Board of Education to replace miscellaneous day classes conducted with grants under Article 42 of the Regulations for Technical Schools (1904-5). Welcome as this initiative was to the technical associations, the Board's policy was not to create rival or alternative forms of 'secondary' education.

> "The growth of these schools has undoubtedly been
> in response to a definite educational need",
> announced the preamble to the Regulations,
> "namely, of those who can afford some time
> for the continuation of their full-time
> education beyond the normal age for leaving the
> Public Elementary School before entering upon
> industrial life. These new Regulations are
> not intended to promote the establishment of
> courses planned to furnish a preparation for the
> professions, the universities or higher full-time
> technical work. The establishment of such courses
> is work appropriate to Secondary Schools.."[18]

These conditions placed considerable limitations on the new institutions. Most irksome of all was the prohibition on the study of foreign languages,[19] and the requirement that parents co-operate in binding . pupils to particular occupations. Closely circumscribed in these ways, pupils were effectively prevented from matriculating and this led to intermittent but bitter clashes between the Board and a number of local authorities as well as the technical institutions. Their pre-apprenticeship nature was further exemplified by the recommendation that Advisory Bodies composed of representatives of both sides of industry should be set up for each school.[20] They were, in short, industrial schools in which the ethos of the school was counterbalanced by the demands of industry. This led to discussions about the relative emphasis between education and training, a formulation which anticipated every subsequent discussion about vocational education for young people.

An unintentional strength of their curriculum, however, was freedom from external examinations which progressively restricted the secondary schools after 1917. In this, they benefited from the Board's disengagement from the examination system, a policy inherited from the Department of Science and Art, in favour of internal assessment.[21]

Thirty seven schools were recognized by the Board in 1913, all in urban centres of industry. Of these 27 were for boys, 29 were in London and the South-East, the other 8 confined to Yorkshire and Lancashire. The provincial schools offered general industrial courses

related to an industry, usually engineering or building, while in London continuities with the trade school tradition were more marked[22] - a pattern that lasted the life of the schools.

But the junior technical schools were also regarded as a vehicle for professional training from their earliest days. In 1907, the Association of Teachers in Technical Institutions (ATTI) - itself in the throes of professionalization - had called for the establishment of 'secondary technical schools' and wrote to the Board in 1915 suggesting that the Junior Technical schools

> "should not be restricted in such a way as to limit the outlook and ambition of the more brilliant pupils."[23]

The demand was immediately rejected by the Board but was raised time and again and came to form a central plank in the joint programme of educational reform of the technical institutions.

More influentially still, the demand to organize the schools as quasi-secondary institutions was growing in the localities. The AEC - increasingly important as a forum of opinion within the maintained sector - gave collective voice to these demands by resolving in 1931 that local authorities should be permitted to

> "experiment with the organization of Junior
> Technical schools offering a four or five year
> course from the age of 11 plus,"[24]

and took the matter up with the Board early in the following year.

Occasionally, local initiative transformed a junior technical school into a type of secondary technical school. At Loughborough College, for instance, the school set up in 1917 was soon converted. Herbert Schofield the College Principal "wanted a feeder school"[25] for the senior institute, in contravention of the 1913 Regulations. With the school's headmaster, A.T. Eggington, the junior department came to closely resemble the technical high school prototype envisaged in the Spens Report, and was held up by Schofield as a model to emulate.[26] The Board retaliated by transferring the school to the Secondary Regulations although it maintained its distinctive technical character.[27]

The national development of junior technical schools was slow and uneven in the face of alternative local preferences, the high cost of places and the requirement for articulate support from industry.

Table 4

Junior Technical Schools (England): Growth of Schools and Pupils, 1918-38.

Year	Schools	Pupils
1913	37	-
1918	61	5,101
1923	86	12,206
1927	101	18,704
1929	108	18,243
1933	191	21,445
1936	216	26,071
1938	230	29,036

Source: Board of Education, Annual Reports.

The table shows that the number of institutions roughly doubled in each decade (1918-29, 1929-38). Numbers of pupils rose most steeply in the years immediately following 1918 as part of the programme of educational reconstruction, fell back in the latter half of the 1920s , and recovered in the 1930s as part of the increased emphasis on technical education.

In Wales, however, technical education of all types was "..almost negligible.." so that the first junior technical school at Newport was cautiously welcomed,[28] as a break with earlier indifference. But cost was undoubtedly a factor limiting the growth of the schools. Expenditure per pupil in 1937 was £23 p.a. "relatively high"[29] compared to elementary or central school places.[30] Furthermore, 'special places' numbered between 75-100% in most schools. "The cost could hardly be low," Richardson explained,[31] once salaries, the cost of equipment, and favourable pupil-teacher ratios were taken into account.

Expenses were to some extent offset because most junior technical schools (85% in 1937) were housed in technical colleges and made use of facilities and equipment which stood idle during the daytime. On the other hand, accommodation was frequently "depressing" and "unsatisfactory .. quite unsuitable for full-time schools for boys and girls.."[32] The situation had hardly begun to be taken in hand by 1939.[33]

The small size of most schools cannot have helped unit costs. As a matter of policy numbers were kept rather below anticipated industrial demand. In some

highly organized trades, especially around London, this was achieved by consultation with the schools' Advisory Committees or local trade boards. Elsewhere, patterns of demand for places were conditioned by local employment opportunities with schools oversubscribed in times of depression. Only 16% of schools in 1937 had more than 200 pupils; more than half (54%) had fewer than 100.

The London schools exemplified both extremes with a great many small trade schools and a smaller number of large schools preparing pupils for a single industry. The upholstery course at Hammersmith had an intake of 24 in 1935, while the engineering school at Borough Polytechnic had 347 pupils. The London County Council (LCC) developed the greatest number and variety of schools and courses. In 1935 there were 30 institutions offering 78 courses to close on 5,000 pupils. Technical education had been actively promoted in London, especially by the Chief Officer Sir Robert Blair (1904-24) a firm believer in "vocationally directed education"[34] as a means of combating problems of 'social wastage'. The size of the LCC and the variety of its industry meant it was able to sustain small diverse courses such as process engraving, horology, instrument making and rubber trades.[35]

The provincial schools by contrast were generally larger and served single industries. Leeds in 1935 had a large school for Preparatory Trades with 250 boys and a mixed junior commercial school for a further 250 pupils. Liverpool had four junior technical schools. Three were boys' schools with an average size of over 200 pupils, though trade schools (especially for girls) were not unknown.

(v) Policies for Secondary Education at the Board
     of Education, 1904-38: Towards the Academic and
     Occupational Grading of Schools.

Too much is sometimes made of Morant's departure
from the Board as ushering in a "new era"[36] in Secondary
school policies. Before 1911 it had been recognized that
the Regulations for Secondary Schools issued in 1904
could not define even a majority of courses, and the
Board was active in promoting other types of courses from
1905 down to the introduction of the School Certificate
Examination in 1917.[37] Vocational courses were encouraged
by means of special grants in 1907 and the Board's Report
of 1912-13 endorsed the principle of local experiments
with the secondary curriculum.

There was in short a detailed concern at the Board,
more particularly among the Inspectorate, to broaden the
content of the secondary curriculum to include "activities
of a definitely practical kind" as a means of improving
the "general education"[38] of pupils. After 1917 however
the secondary curriculum came to be defined by the
requirements of an external examination which legitimized
a more restricted interpretation, and which, moreover,
triumphed by a consent which passed far beyond the
Board and the examining bodies.[39]

For the moment, however, the shift of emphasis at the
Board of Education requires explanation. How was it that
the "narrow view" of the respective spheres of
technical and secondary education criticised in 1912[40]
gave way to a uniform academic standard? It will be
argued that the Board consented to an instrumental yet
'proper' vocationalism in secondary schools before 1914

which became more difficult to sustain during the
rapid expansion of secondary education after the war.
Indeed, it will be shown later in the chapter that an
expansion of all education was expected after 1918,
as a result of the Education Act and voluntary attendance,
and this was to be met by a variety of separate
institutions divided along occupational criteria.

'Proper' vocationalism meant that there was a
relative openness to experiment at the Board with
realistic subjects in the later years of the secondary
school course. For example, commercial classes were
regarded as a legitimate extension of the course, in
direct competition with independent commercial colleges.
As such special 'Day Commercial Schools' were
rejected and it was "warmly disputed" that winning
University Scholarships was the "major aim" of the
secondary schools.[41]

'Rural training' was also seen as a proper attempt
by secondary schools to reflect local interests in
their courses. At Dauntsey's and Knaresborough it had
gone beyond a "rural bias" offering pupils a course that
was frankly "vocational" (instrumental) and yet
encouraged by the Board.[42]

'Industrial training', however, was less warmly
regarded as a proper sphere of interest for the secondary
schools. The separation of mechanical activities from
secondary education was exemplified by the establishment
of junior technical schools as pre-vocational or
pre-apprenticeship institutions.

Expense,and concern at duplicating the provision made in technical schools were put forward as reasons against the establishment of engineering 'sides' in secondary schools. At bottom, however, the Board's objection was to an improper vocationalism associated with a distasteful and impure branch of science.[43]

The Board's views also reveal differences between administrative staff and the Inspectorate. Engineering courses in secondary schools were well regarded by the Inspectorate at least, who compared their courses favourably with those of junior technical schools.[44] No obstacle was placed in the way of an engineering course also being "a useful part of a general education",[45] a view reinforced by senior members of the Secondary Inspectorate.[46]

Indeed, the Secondary Inspectorate were more enthusiastic than their Technical Branch colleagues who continued to be particularist in outlook[47], to the point where 'S' Branch conducted its own survey of 'vocational courses'. These initiatives were usually well-regarded on the grounds that they prolonged school life and were compatible with "a good general education" and introduced "a new sense of reality and a spirit of keenness"[48] into the schools. 'T' Branch however did not concur and was suspicious of "technology" in secondary schools for territorial reasons, and regarded it as evidence of premature vocationalism. It was suggested that mounting technical courses should result in the re-classification of secondary schools as junior technical schools.[49]

Meanwhile, the Secondary Advisory Committee (a statutory Committee of the Board) was examining the

secondary curriculum in the light of the 1918 Science
(Thomson) and Modern Language reports on educational
reconstruction after the war. Its task was given urgency
by the requirement for LEAs   to submit local schemes
of organization under the 1918 Education Act. The Board
reasoned that Circular 826 could not be simply
re-issued as a statement of its post-war secondary policy.

The Secondary Advisory Committee proved to be bolder
than the Board itself in looking forward to a great
increase in secondary education. Its members were
unconcerned at the prospect of a secondary education that
did not include a foreign language, and endorsed the view
that junior technical schools should be re-classified as
secondary schools as the Thomson Committee had proposed.
It concluded that a unified Code was desirable for all full-
time schools.[50]

By the early 1920's the Board's attitude towards
administrative and curricula separation of 'technical'
from 'secondary' education had hardened. The junior
technical schools were confirmed in their special and
anomalous position as junior full-time pre-vocational
schools admitting pupils at 13. The recommendation of
the Thomson Committee was rejected by the administrative
officers of 'T' Branch who insisted that the junior
technical school was

> "intended to meet a definite economic need
> and ought not to be regarded as a school
> which gives a general education."[51]

The Board's views were published as circular 1294
'Curricula of Secondary Schools in England' (December 1922).
In its tenor it had scarcely advanced beyond the 1904
Regulations requiring a "proper balance of subjects" which

should include science and a foreign language. The science course prescribed was intended to emphasize humane aspects of scientific inquiry,[52] a position that would have been understood by grammar school science teachers a generation later.[53] The Circular did nothing to suggest how the congestion of the timetable might be reduced and was a dead letter,having failed to advance beyond Circular 826, a fact privately admitted at the Board.[54] The School Certificate, it was agreed, had stifled experiment by making the secondary course "a Matriculation Certificate" which schools could not ignore.[55]

A decade later, the academicism of the secondary course was warmly defended by the Board. The criticisms levelled at 'alternative courses' mounted by some West Riding secondary schools is a fresh marker of this re-orientation. The Inspectorate condemned the courses for their similarity to those of junior technical schools.[56] In an acrimonious interview, the Education Officer of the West Riding, Hallam was taken to task for permitting these developments.[57] The exclusivity of the secondary course was being damaged,the Inspectorate complained,in favour of the extension of secondary facilities to pupils who would ordinarily find themselves in other types of school, notably junior technical schools where they could undertake vocational courses.[58]

The segregation of courses by 'type' was also reflected in stricter conditions laid down for the teaching of commercial subjects in secondary schools - further evidence of growing exclusivity and academicism.

The Board was limited however to administrative measures because groundrules could not be announced while the Consultative Committee under Spens was reporting on related issues. By this time 'S' and 'T' Branch worked closely to maintain the separation of vocational from academic courses.[59] The upshot was that only closely prescribed post-school Certificate courses were permitted outside the range of academic subjects.[60]

(vi)   The Board of Education 1918-39: Organizational Sympathies.

The inter-war years represented a period of disappointment when set against the programme of reform outlined in the Education Act of 1918. Critically, the Board lacked financial resources to promote advance and lacked power in its dealings with the local authorities, where its role was restrictive rather than compulsive.[61]

Technical education was poorly placed in the 1920's, before increasing slightly its share of the educational budget in the later 1930's. Technical ('T') Branch itself represented a policy division that inevitably fostered the separation between secondary and technical education. It presided over a wide but residual sphere of activity with a miscellaneous collection of responsibilities for full and part-time provision for pupils aged 13 and above whose needs were not met elsewhere.

Policy within 'T' Branch was also conditioned by the personalities and outlook of its senior officers among whom scientific backgrounds or enthusiasm were poorly developed, especially when compared to their predecessors at the Department of Science and Art. They were preponderantly men with literary and artistic

leanings. Between 1910 and 1919, for example, the head
of 'T' Branch was E.K. Chambers, a well-known historian
of the stage and literary critic, who deferred as a matter
of Branch policy to the superior claims of the
Elementary ('E')and Secondary ('S') Branches over
resources.[62] The Board's officials appeared to outsiders
as remote from those placed in their charge.[63] The
Board itself seemed to be typified by a patrician outlook
when contrasted with other departments of state,
maintaining for example a system of patronage to
appointments as late as 1919.[64]

In the absence of effective political supervision by
successive Presidents,permanent officials possessed
considerable influence in framing policy. That policy
was characterized by the hope of cautious (very possibly
local) improvements in the face of general financial
restrictions. There was substantial agreement between
the Board and the most progressive local authorities over
a number of issues, not least the need to expand 'higher'
education especially through post-elementary institutions.
The junior technical schools too had a limited but
important place in this scheme. More difficult to agree
was exactly what that place should be. A strictly
instrumental interpretation of their role was pre-
eminent at the Board until 1944, though it was progressively
diluted by strategic withdrawal in the face of alternative
local demands.

The party political sympathies of permanent officials
is by no means clear. In any case, the majority view in
both major parties was that secondary education should be

selective. This "limited the scope of the measures
officials believed were required to reform the English
educational system."[65] They were meliorist in their
outlook. A free and compulsory universal system of
elementary schooling until 14 with limited access to
various types of 'higher' education was the Board's
ideal. Post-elementary education was regarded in terms
of separate institutions administered under a variety of
Codes. The Board was committed (after 1926) to the
re-organization of post-elementary education at 11+ in the
wake of the Hadow Report in separate 'Senior' schools.

The Board's greatest solicitation was reserved for
the secondary schools.[66] They were the flower of
maintained provision and distinguished by their
sixth forms,[67] which enabled boys and girls of limited
family means to secure access to the universities and gain
entry to the professions.

School organization was closely associated with the
occupational destiny of pupils. The expansion of
secondary school places was directly linked to the
growth of the black-coated professions and teaching
opportunities as well as the increase in clerical
occupations. Demand and supply of places seemed to be
balanced until the 1930's when employment opportunities
began to contract.

Anxiety was re-iterated about an older imbalance
which the education system had not yet successfully
tackled - the need for skilled labour in certain
industries. This was expressed in terms of national
requirements or personal consequences or both. The

alleged shortage was widely attributed to the breakdown
of the apprenticeship system,and senior Board officials
had cut their administrative teeth on devising schemes
to overcome the problem.[68]

The junior technical schools were regarded as one
response to the requirements of industry for skilled
production workers. They were intended to improve the
efficiency of industries where apprenticeship survived
or where craft methods still prevailed, a distinction that
corresponded to the 'industrial' and 'trade' school division
among the institutions. Many schools were able to secure
exemptions for their pupils from the first year of
apprentice training by local agreements with employers
and trade unions, so that the length of school course was
determined by the local age of entry to apprenticeship.

Significantly, the Board felt there was evidence
to show that it was possible to reduce the period of
apprenticeship without diluting standards. The day
classes in technical schools (1905) which had
foreshadowed junior technical schools were consciously
modelled on the Admiralty 'Dockyard Schools' where
naval apprentices had been trained since 1843. The
prestige of the Admiralty institutions among professional
associations and employers cannot be overstated.[69] They
were a key example of how "workmen of special ability"
could be trained in an extremely competitive atmosphere.[71]

To replicate this training in the junior technical
schools was the Board's ambition, allowing for a younger
and less competitive entry and with special attention to
pre-employment conditions stipulated by industry. The
dockyard schools, interestingly, sent some apprentices on

to higher education, usually Imperial College, where their training secured exemptions from parts of the undergraduate courses.[72] Distinguished alumni included Fellows of the Royal Society and holders of university chairs in engineering subjects.

The impending passage of the Fisher Act, meanwhile, was the occasion for the Board to reflect on the aims of national school policies. Anticipating a demand for post-elementary education the Permanent Secretary Selby Bigge envisaged "the establishment of practically a new group of facilities" distinct and separate from the secondary schools, maintainance and growth of which was still the cornerstone of post-elementary policy.[73]

Selby Bigge reasoned that there would be a larger number of pupils than in former times remaining in education voluntarily until the age of 16,[74] for whom the School Certificate was an inappropriate goal. But he

rejected 'Secondary Technical Schools' of the type suggested by the ATI.[75] The needs of this group of pupils he conceded would be "impossible to ignore" and were best met in post-elementary institutions "that..would offer a course of study aimed at occupations .. if only as a concession to the weakness of human nature.."[76] It was the Board's ambition all through the period to 'grade' secondary schools by length of course and occupational preparation, supplemented by a body of pre-employment schools aimed at industrial occupations - the junior technical schools. He outlined his plans to Spurley Hey the Director of Education in Manchester in an attempt to forestall independent actions by the local authority

in implementing a scheme of reconstruction.[77]

The expectations outlined in Selby Bigge's
memorandum were altered in detail. The raising of
the school age to 14 meant that junior technical
schools were no longer 'end on' to elementary schools,
which made their position anomalous. Much more important
was the disintegration of reforming hopes in the face of
educational retrenchment, so the the scale of growth
envisaged by Selby Bigge was arrested.

But his ideas about the expansion of junior technical
schools found echoes elsewhere, not always those which
the Board approved. The Thomson Committee (1918)
commented very favourably on the junior technical schools,
and entered a plea for the relaxation of the 1913 Regulations,
allowing them to be re-classified as secondary schools.[78]
Sections of industry were also generous, even fulsome,
in praise of the schools, though for self-interested
reasons, notably as a means of circumventing the
provisions for day continuation classes for young
workers contained in the 1918 Education Act.

Most importantly, the vision of a group of
sub-secondary schools growing out of the junior technical
school tradition was replaced by more influential canons
of school organization. The 'Hadow' Report (1926)
endorsed the arguments for a system of universal
post-primary education from the age of 11. This was to
be accompanied by a longer school life with the raising
of the leaving age to 15, enabling a variety of genuine
four year lower secondary courses to be developed.

The Consultative Committee had also, inter alia,
examined the position of junior technical schools. Guarded

approval for their courses was tempered by the feeling
that although a 'practical' post-primary curriculum was
urgently needed, the junior technical schools did not
provide exemplary types. There was doubt, moreover,
whether their curriculum - aimed at industrial
preparation, could be adapted to a break at 11.[79] They
were regarded, in short, as too specialized and vocational.
The Committee distinguished between 'realistic' courses
and 'vocational' or 'technical' training, deciding that
junior technical schools were to be numbered among the
latter group, and were too firmly linked to industrial
requirements to cross the boundary.[80]

Encouragement of the junior technical schools
from the centre was the responsibility of 'T' Branch.
During the 1920s and 1930s the strictly instrumental
orientation of their courses continued to be stressed.
Even following the Spens Report, which advocated the
establishment of technical high schools, there were no
startling differences between the Board's conception of
the schools in 1930 and the early years of the Second
World War.[81]

The Board's policy provoked a considerable reaction
in the 1920s sparked off by the suggestion that the
schools should be re-named 'Junior Vocational Schools! The
Board was forced to retreat, and the 1926 Regulations for
Further Education, which marked the end of its interest
in detailed control over the curriculum, widened the
freedom of action of local authorities in framing
junior technical school courses. There was no change of
heart, however, and the policy of Selby Bigge and W.R. Davies

(head of 'T' Branch) in the 1920s , was continued by
W.C. Eaton and R.S. Wood, heads of 'T' Branch in the
1930s .

Eaton relied heavily on the advice of the Inspectorate
who looked forward to the consequences of Hadow
re-organization on technical education. Its view was
that entry to the various grades of technical education
would become much more definitely linked to school
types than in the past. The secondary schools for
example would furnish,

> "indivduals from among whom the higher posts in
> industry and commerce will be filled"

while the elementary schools sent out,

> "the rank and file for whom opportunities for
> promotion will be greatly restricted."

Eaton, committed to Hadow re-organization, stressed the
value to industry of school leavers educated on general lines.
He mirrored the ambiguity of Hadow towards the junior
technical schools, which did not fit into the twofold
division of post-primary education the Consultative
Committee had proposed. Eaton accepted, therefore, that
there should be no expansion of the kind of technical
education suggested by Selby Bigge in 1918. This policy
now risked interference with the position of the
secondary schools and would restrict the work of the
re-organized senior (Modern') schools. The number of
junior technical schools might well grow, but as a
definite group of quasi-industrial institutions, subsidiary
to the network of part-time courses in technical education.[82]

The position of the junior technical schools had
already been the subject of an extensive review under

the direction of the Senior Chief Inspector, Sir H.M. Richards. The contents of Pamphlet 83, <u>Memorandum of the Place of the Junior Technical School in the Education System</u>, (1930), were largely derived from the results of that inquiry, and formed the basis of the Board's policy in the 1930s .[83]

The 'Junior Technical School Committee' outlined reasons which effectively limited the schools to instrumental purposes, while admitting that the conclusions of the Hadow Report made their position "indefinite and obscure." The junior technical schools it was maintained, should continue to be "characterized .. by singleness of aim .." and could not therefore "fulfil the wider and more general functions of central and senior schools .."[84] This conflict of direction prefigured later tensions between the proper sphere of technical schools vis-à-vis their grammar and modern school counterparts.

(vii) The Political Parties and Technical Education.

Cultural assumptions are well-illustrated by political attitudes. Politics and education, meanwhile, have been inseparable. Schooling has always been highly ideological and costly, so that ministers are commonly associated with departmental policies. In fact, political parties have not been important in formulating policies or initiating debate. Educational issues, moreover, have usually been a matter of minority interest within parties. But politics is the forum where popular interest in education most often finds expression so that the social history of education cannot be discussed without referring to what "organized interest groups, including the political parties thought about it."[85]

Between the wars, party interest in education can be resolved into a few standard formulas, and the subject evoked little political interest,[86] except for matters of expenditure.

Up to 1918, individual Liberal M.P.'s had been most interested in the extension of secondary and technical education (often regarded as synonymous), with the support of some Labour members. The Labour and Independent Labour Parties, however, were suspicious of vocational education which was regarded as a tool of employers.[87]

After the First World War, Labour was more closely attuned to the political importance of education. In particular, individuals were critical of the Board of Education for its tardiness to implement 'Hadow' re-organization and its attitude toward educational economies in the 1920's.[88] Conservatives were split on

the question of educational extension, with Liberals
taking the credit for the Education Act of 1918.

(a) The Conservative Party

In a party distinguished by its lack of interest
in education there were a few members including Eustace
Percy, Peter Cadogan, Macmillan and Herwald Ramsbotham
who took a close interest in the subject. Within the
party at large there was an instinctive feeling that
elementary education should be intensely vocational by
emphasizing practical skills.[89] The most widely shared
view was that education must bear its share of government
economies. These facts were inevitably linked to
conceptions of post-elementary schooling. The party was
swift, for example, to accept 'Hadow' re-organization,
claiming it as a vindication of its own policies, but
preferred the cheaper and more vocationally directed
central schools to Labour's preference for a universal
system of secondary schools.[90]

The popularity of central schools owed much to
Percy's advocacy. The Party adopted enthusiastically his
hopes for the voluntary extension of post-elementary
education in central schools - expressed as an election
pledge in 1929 for "non-compulsory, universal higher
education."[91] They provided an intermediate secondary
education with opportunities for commercial and practical
study.

Behind this desire was a view of post-primary
education shot through (in varying degrees) by an instrumental
view of vocationalism in which technocratic and technical
interests were accompanied by the desire to leave the
social structure undisturbed.

On the moderate wing of the Party alternatives to
'academic' secondary education were welcomed. The modern
school curriculum in particular could provide "large
opportunities for practical work",[92] an area that
secondary schools had neglected. In the country, the
Party was careful to avoid conflict over social reform
and party publications followed moderate parliamentary
opinion.[93]

Mainstream opinion within the parliamentary Party
attached far greater importance to education as a direct
vocational preparation. Junior technical schools in
their trade or pre-apprenticeship manifestations were
praised as the epitome of realistic study.[94] Annesley
Somerville (formerly an assistant master at Eton College)
warned of the danger of "training a discontented generation",
reasoning that since most school leavers were destined for
"manual labour" it was the duty of elementary schools
to follow the junior technical schools,[95] leaving the
secondary schools to "train leaders",[96] a division of
schools along occupational and even class lines.

No account of Conservative educational policy in these
years can ignore the influence of Eustace Percy. His
ministerial career (1924-9) was active and personal. An
orthodox pre-Keynsian his belief in economy,[97] and his
disposition against legislative action meant that his
period of office was not marked by a general improvement
in the service or by administrative landmarks. Nonetheless,
Percy was well-disposed to education especially technical
education. He brought to his interest a distinctive and
consciously Conservative point of view.

Percy's interest in technical education was

expressed in the language of radicalism. He was, however, less egalitarian than his talk of two educational ladders - the liberal and the technical - might lead one to suppose. He regarded "equality of opportunity" or "parity of esteem" in education as chimerical, and divisive along class lines, believing also that the contribution of the technical institutions was thereby overlooked.[98] The "educational ladder" had become a matter of sociological interest,[99] focusing on the restricted and highly variable opportunities for secondary education. For Percy, the main consequence of this attention "was to breed a rather sickly distaste for 'vocational' education."[100] He took up the matter with the local authorities over the issue of 'Hadow' re-organization which he regarded as expensive and wrong-headed. It brought him into serious conflict with his advisors. He believed the promise of re-organization was mistaken, its benefits exaggerated and the work of existing technical colleges ignored.[101]

Out of office, Percy was free to speculate against a background of unparalleled economic dislocation. His ambivalence towards educational reform was the result of a desire to promote economic recovery assisted by a skilled workforce, but alter as little as possible the balance of political power between classes and preserve existing social structures. A grammar or academic education, he reasoned, was an appropriate preparation for the liberal professions. But it had been unwisely extended at the cost of part-time routes through the technical colleges.[102] As it was, there were signs that the blackcoated professions were reaching saturation point in their capacity to absorb the upwardly mobile.[103] National regeneration associated with

improvements in technological education is a familiar
enough totem . But even assuming that translation of
educational effort to be possible, the creation of
Percy's technocracy left undisturbed the prestige of
academic education by maintaining its exclusivity on the
grounds that full-time courses should be selective.

During the 1920's, Percy favoured the Central schools
which, had been developed in a number of the larger urban
authorities, as a solution to the demands for extended
education over the proposed 'Modern' schools postulated
by 'Hadow'. He publicly committed the Board to a policy
of "full-time intermediate higher education for all" in
senior schools "with a curriculum designed on general
education grounds, to give the preliminary manual
training which was the basis of all crafts."[104]

He was not slow to root his desires in Conservative
history and principles.[105] Voluntary educational extension
meant variety in place of "formalism"; of locality against
bureaucratic injunction. In place of the "aimless
uniformity" of the elementary school, Conservatives were
encouraging a new variety of senior school "closely
associated with institutions of technical education as
the Secondary School has been associated with the
universities."[106]

Percy believed that schools in which occupational
preparation was a normal part of the course could lead
onto more "definite opportunities" for education, a
view ignored by Hadow which had placed too much emphasis
on the developmental aspects of 'practical' education and
exaggerated what schools could achieve on their own. Thus
technical education for occupations was integrated with

the educational system as a whole - planning without "extravagance".[107]

In time, Percy broadened his argument to include secondary schools as feeders for the technical colleges. Before 1930 he accepted that they would take about 20% of elementary school pupils at the age of 11. But he came to doubt the value of their courses.[108] This was a consequence of his growing pessimism over the increasingly chaotic conditions of industrial recruitment,[109] and fears for the political stability of the country itself.[110]

Secondary schools, Percy came to feel, had not taken part widely enough in preparing pupils for employment. Although they did produce "future leaders" they were 'hot in any sense selective of the highest talent." In truth they were "intermediate" schools, no better (but more costly) than ordinary central schools offering a higher elementary course.[111] It made more sense in Percy's view to abandon the Board's policy (which was being pursued under his successor Ramsbotham) of secondary, senior elementary and junior technical schools in favour of "a highly differentiated system of intermediate education" responsive to local employment opportunities and of direct relevance to technical education.[112]

A system of intermediate schools imposed an outward conformity on the structure of post-primary education. The four year course, Percy suggested, should be terminated by an examination, the results of which admitted successful pupils to a three year "higher secondary school"[113] of an academic type. Junior technical schools, however, while performing good

work were anomalous within the education system . Like
the Board, his view was that they should not prepare
pupils for further courses,[114] and would be rendered
obsolete by the proper operation of the 'intermediate'
system.[115]

Percy did not claim his system was 'liberal'; its
instrumental brand of vocationalism cannot be doubted.
The traditional secondary school curriculum based on
languages was liberal but could only be offered to a
small minority of pupils. In this way he hoped to
preserve. 'excellence', meet national manpower
requirements, and adapt the secondary school to modern
conditions without adding to its type.[116]

(b) The Liberal Party

Liberal interest in education was undiminished in the
1920s. Dean points out that some, like Lloyd George and F.D.
Acland stressed the links between "education and economic
advance",[117] a favourite theme based on German models.
Fisher himself made no such claims for his Bill, though
he doubted the popularity of the parliamentary Labour
party's anti-vocationalism.[118]

Continuation schools had long been a feature of
Liberal policy,[119] and formed a cornerstone of the
1918 Education Act. To Haldane, their vocational
possibílities were paramount. In particular, he was
impressed by Kerchensteiners "Trade-Continuation" Schools,[120]
and wished to see their extension in England, a desire
supported by Sir Robert Blair[121] (Education Officer at
the LCC) and a fellow Liberal.

The war had helped to foster a growing consciousness
about scientific applications and this was directly

related to the expansion of technical education for "national prosperity",[122] a demand that was eclipsed in the 1920s by the emphasis on the extension of secondary school places. By the 1930s progressive opinion within the Party sought to implement the Hadow Report.[123]

But the most tireless parliamentary voice in educational matters - that of Percy Harris - continued to give expression to earlier Liberal concerns, especially the relationships between vocational education and national regeneration. European education developments deeply impressed Harris, giving substance to his belief that Britain was falling behind her international competitors in product development and labour skills.[124] The direction of labour in pre-Nazi Germany[125] and Belgium met with his approval and fortified his desire to make "efficient and highly trained workers"[126] along similar lines in Britain.

As such, vocational education was to be encouraged in the schools, though he viewed the Board of Education as a considerable impediment in this direction.[127] Harris and other Liberals were particularly impressed by the vocational bias of London central schools. The organization of schools along occupational lines was welcomed, and some junior technical schools singled out for special praise. The extension of trade schools was pressed hard and manual work in modern schools encouraged.[128]

(c) The Labour Party

There were mixed views within the Labour party about vocational education in schools. Education itself was a

subject on which the Party exhibited varying degrees of interest.[129] The passage of the 1918 Education Bill marked the nadir of the parliamentary party's concern with education, despite considerable lobbying by the Labour Movement at large.[130]

Objections to vocational education were commonly reflexes against the views of Conservatives and employers. The secondary schools, meanwhile, in spite of the stuffiness and academicism of their curriculum were widely respected. The Party also shared the progressive view about the possibilities of educational psychology as a means of allocating pupils between institutions. The result was that school organization was seen in terms of providing for 'types' of pupils in separate institutions.

Vocational education was deprecated in favour of literary and 'cultural' study. Even continuation schools were charged with providing a "broadly humanistic" course. The need to develop labour skills, meanwhile was separated from mere training in "technical processes" with the injunction that it should be "liberalized by the most intimate connection with general education."[131] These comments bear the unmistakable stamp of R.H. Tawney who dominated parliamentary Labour views on education in the 1920s .. His essay 'Secondary Education for All' (1922) was the cornerstone of party policy and its recommendations actively put forward by parliamentarians like Sir Charles Trevelyan (sometime President of the Board of Education) in and out of office.

Tawney's essay was married with the Hadow Report to shape a policy of universal 'Secondary' education in

which 'liberal' central and junior technical schools had
a place so long as their courses were 'practical' or
'realistic' as distinct from being merely 'vocational'.

Labour presented itself as the party of educational.
reform. The precise meaning of increased educational
opportunity, however, was not entirely clear. Matters
were exacerbated in the 1930s ; by the intervention of
explicitly political and class hostility into educational
discussions. This meant that educational issues were
sometimes obscured by the invective of 'conviction'
politics.

The Party's continuing commitment to 'Hadow'
re-organization did not, however, overcome problems of
dualism between education and employment. It was an
uncomfortable fact that a variety of post-primary schools,
offering separate groups of pupils discrete curricula,
could be seen as preparing them for particular occupational
destinies. There was no doubt, moreover, that the
conventional secondary school attracted the highest esteem.

The secondary school course was challenged,
however, on the grounds of its inelasticity, and demands
were made that post-primary schooling take account of
"practical education" which in some circumstances
permitted training "for a given type of craft."[132]
'Craft' proved to be a popular legitimation of 'practical'
study because it enlisted "vocational activities" to
develop aesthetic sensibility and social insight.[133]

As such, junior technical schools were warmly
appreciated for their efforts to establish an alternative
type of secondary course leading on to higher education.[134]
They were also praised for shortening the period of

apprenticeship by keeping young people in contact with education.[135]

But while vocationalism was an educational means of promoting interest and relevance in the classroom, the harmful social consequences of two 'types' of secondary education were also recognized.[136] If vocationalism meant training for jobs then it was a sham, and there was a feeling within the Party that re-organization was a means of depriving working class children of a "general education."

> "I am not against vocational education under a Socialist system", declared W.G. Cove, "The clash and the dualism comes under the capitalist system. If you have vocational education early in your system you can get the predestination of children to one particular job."[137]

The effects of the 1931 crisis reverberated throughout political life, altering the tone of educational debate.[138] Two main lines of development - each intended to promote social ambitions as well as educational goals - manifested themselves in the 1930s. The first and most important was the promotion of well-established policies, especially the extension of (free) secondary school places. The second was more radical - the demand for multilateral secondary education for all children. This view was particularly (but not solely) associated with the National Association of Labour Teachers (NALT), and was seen as a means of bringing about a social revolution through the schools. The effects of social class would be minimised, while a variety of courses related to interest and ability could be mounted within a single institution. The psychological basis of education ('types') was accepted, while its social basis (separatism) was rejected.

The promotion of the first policy was distinguished
by the development of mainstream progressive opinion
(Tawney, the Consultative Committee). The junior
technical schools were potentially regarded as "a new
type of secondary school" which fostered "the natural
tendencies of children towards practical forms of work."[139]

The NALT, however, objected to the "social philosophy"[140]
of 'Hadow' re-organization on the grounds that it corresponded
"to a division of children"[141] by occupational groups.
The Spens Report, the NALT concluded was,

> "a benevolent attempt to devise a system of
> post-primary education which conforms to the structure
> and political philosophy of a capitalist and
> competitive society."[142]

(viii)   Industry and Technical Education: the Case of
           Junior Technical Schools, 1913-1939.

A critical test of technical education is the nature
and extent of its relationship to industry. In Britain,
the picture before 1939 was one of remoteness rather
than co-operation in detail. The case of many junior
technical schools was progressive in this respect.

In some quarters, (Liberal Imperialists, Fabians),
technical education was regarded as a means of promoting
industrial efficiency.[143] But the scholarship 'ladder'
had not greatly assisted in helping develop the
infrastructure of scientific manpower within industry
before 1914. The political hopes of the 1890s to
extend technical education were arrested by a widespread
lack of interest from industry. Employers and labour
alike were mostly lukewarm (and sometimes actively hostile)
to work related education. Craft unions were particularly
suspicious of technical education, while the Trades Union
Congress (TUC) was more interested in the development of

secondary education, than the growth of technical education.[144] Individual working men, meanwhile, contemporaries averred, were alienated from the technical schools which were regarded as being solely concerned with "the education of the higher sections of the people and not so much for the actual artisans."[145]

After 1918, national manpower planning was conditioned by the experiences of wartime and the projected aims of reconstruction. It was set against the background of economic recession in the early 1920s and 1930s. The educational needs of industry were examined in a number of official and semi-official reports. Their conclusions are an indictment of educational and industrial interests alike. There was relatively little improvement in the links between technical education and industry. The demand for trained manpower remained static. While verbal support for technical education from industry was enthusiastic these expressions were "..more in the nature of a stereotyped opinion than a conviction leading to action."[146] The Federation of British Industries (FBI) admitted there was "no formulated policy regarding technical education .. in many trades it has not even been considered." In several areas, important local industries were not assisted by complementary educational provision.[147] For the most part, the Emmott Report concluded, "individual firms .. are sympathetic and helpful. Trade Unions are not prominent.."[148]

Local educational policies were often equally remote from industrial needs. Consultation was poor, so that the Malcolm Committee drew attention to the need for industrial views to be sought before schemes for post-primary

re-organization went ahead.[149] Worse still, a similar
position obtained with regard to technical classes as
well.[150]

The war had revealed serious deficiencies in national
provision of scientific training and certain branches of
technical expertise. This awareness undoubtedly
conditioned the outlook of the Thomson Committee which
had regarded industrial preparation as consistent with
secondary 'technical' education.[151] The need for advanced
technological co-operation had earlier resulted in the
establishment of the Department of Scientific and Industrial
Research in 1916. It was charged with promoting research
associations within groups of allied industries.
Progress was very mixed, with wide variations between
industries. Some key sectors of the economy - shipbuilding,
railways, steel manufacture, heavy and organic chemicals -
had no facilities for joint research.[152] This position
contrasted unfavourably with that of foreign competitors,
a fact the Balfour Committee attributed to the effects of
economic recession, and perhaps more importantly,. a
deep-seated indifference towards scientific applications
by industry at large.[153]

Framing demands that the education service could
discharge proved to be extremely difficult. The Malcolm
Committee noted the "disquieting indifference" of
employers to consider training needs. In many industries
there were no bodies capable of formulating educational
requirements, or guaranteeing the co-operation of
employers.[154]

Employers were better at articulating criticisms of

the schools. Specialized instruction - 'Engineering sides' in secondary schools for example - found little favour. Instead, demands were usually expressed for 'general' preparation in schools. Professional qualification at day or evening classes, building on "fundamental subjects" was the preferred route for the secondary school leaver.[155]

Apprenticeship and recruitment policies by industry were typified by the prevalence of 'ad hoc' methods. junior technical school pupils usually encountered little difficulty in obtaining apprenticeships, though they were mostly recruited as 'trade' rather than 'pupil' or 'student' apprentices, that is, to prepare for a particular occupation within an industry. Systematic selection policies were rare.[156]

A considerable limiting factor in the way of greater dialogue was the local organization of education and the national organization of industries. In consequence, demands from on both sides were framed at a high level of generality. Departures from this rule were noteworthy exceptions.[157] Links were most in evidence in apprentice training in technical colleges, predominantly a voluntary system to meet practical requirements.[158] The junior technical schools, meanwhile, were too few and circumscribed in their actions, to play a significant part in forging links between school and work.[159] For the most part, they remained 'clients' of employers and trades.

'Industry' is a collective term. It was among larger firms, or technically advanced firms or those in which

scientific or technical skills were most evident among management, that an interest in education and training was most apparent. But small and local firms predominated, even in those industries which demanded heavy capital investment.[160]

This fact was recognized and commentators were careful to point out that information supplied by progressive industrial associations did not represent opinion as a whole, much less that of the 'average' employer.[161] Despite the positive evidence of support for technical education the overall position was one of concern.[162]

Links between education and industry between the wars were in general weak. Industrial interest was at a low level. Despite complaints about the quality of elementary school leavers by employers few had any detailed knowledge about central and junior technical schools. This fact helped restrict the growth of the junior technical schools since expressed demand by industry was a pre-condition of their formation. Simultaneously, their development was limited because they were constrained by the requirement that they should only prepare pupils for supervisory posts within industry.[163]

(ix)   The Board of Education and Technical Education for Industry, 1918-39.

"Co-ordination is a blessed word",[164] declared Eustace Percy in exasperation at parliamentary demands for national schemes of technical education for industry. Percy himself regarded the Board's task as enabling; the details to be worked out locally and by each industry for itself. The Board's officers, meanwhile, did not squarely address

the issue of technical education for industry before the 1930s.

Towards the close of the First World War it appeared as if both sides of industry were becoming more receptive to the need for scientific and technical education.[165] This hope soon evaporated. Employers were reluctant to accept day continuation education, while the FBI in a phase of intense politicization,[166] opposed the Education Bill wholesale,[167] preferring full-time 'higher' education for a selected few.[168] This view was re-iterated before the Board by the powerful Shipbuilding Employers' Federation. It urged that the extension of selective secondary education should be in junior technical schools. Thus, industry would be furnished with skilled school leavers of 16 without further obligation to provide for day release. "Education", said one employer acrimoniously, "may be carried too far."[169] There were exceptions to this point of view but generally employers were afraid of the dislocation and cost of continued part-time education. The trade unions, for their part, were lukewarm towards day continuation schools, suspecting them to be vocational substitutes for genuine secondary education.[170] The closest co-operation in technical education and industry was between the Board and the professional institutions through the validation of national certificate schemes. Otherwise, the Board was poorly placed - because of its lack of contacts, pressures of economy, and the disposition of officials - to tackle the problems of education for industry.

The need for definite training for employment was a view expressed influentially before 1914. It led, for

example, to the endorsement of trade schools,[171] which were subsequently canvassed during the war as a means of training foremen and leading hands.[172]

Leading educational administrators were in sympathy with this point of view, feeling that progressive education was too much in the hands of "idealists".[173] The Board itself was regarded as inimical to the growth of technical education, and incapable of establishing industrial needs. These views led directly to the setting up of the independent 'Emmott' Committee, sponsored by the ATTI to inquire into the provision of technical education for industry, as a calculated snub to the Board of Education.[174]

Under the Presidency of Eustace Percy, however, the Board began to take a greater interest in attempting to establish industrial requirements. But Percy was not sanguine about the possibility of national schemes of education for industries. He preferred regional co-operation between consortiums of education authorities and local industry along the lines of the Yorkshire Council for Further Education.[175] Accordingly, the Board's Inspectorate conducted an overview of the national position [176] favourably received within the technical education 'movement'[177] - which was intended to be a starting point for local discussions.

Percy's political colleagues, however, were cool on the subject of inter-departmental action,[178] leaving the Board of Education to look into education for salesmanship (Goodenough Report) and engineering (Clerk Report) on its own. The Clerk Report in particular was intended to answer charges about the Board's lukewarm attitude towards

education for manufacturing industry.[179] But depressingly,
the Inspectorate noted that their inquiries were widely
construed by emplbyers as "a plot to re-establish compulsory
day classes."[180] As a result of these efforts[181] there
was some lessening of "indifference" by employers and   •
"Suspicion" by trade unions to the extent that Advisory
Committees were set up for a number of regional courses
for industry. Junior technical schools, meanwhile,
continued to find considerable support among employers in
their localities.[182]

    After Percy's departure the level of interest in
technical education for industry was maintained by the
Board of Education. The investigations of its own officers
had revealed the seriousness of Britains comparative
deficiency. Financially, technical education fared rather
better in the face of economies in the 1930s than
during the previous decade. Like Percy, Herwald
Ramsbotham (Parliamentary Secretary 1931-5) was also
concerned by 'the lack of co-operation between industry
and commerce .. and education."[183] Accommodation was
the most pressing need so that capital schemes were
allowed to go forward "notwithstanding the economy
atmosphere,"[184] so long as initial overtures came from
the local authority.[185] The Inspectorate, for its part,
was instructed to give encouragement to LEAs contemplating
building programmes designed to assist industry.[186] In
1936, £12 million was allocated for building.[187]

    At any rate, while local authorities were more
alive to technical education after 1936, progress was
slow.[188] The Board's attention, meanwhile, was moving

towards the development of links with industry,
especially employers, a departure from its position for
most of the period. The Board was in an exposed
situation, however, because of its lamentably weak
contacts with "the workaday side of industry". The
promotion of day release was the Board's object, and
while relations with the professional associations were
cordial there was "no such approach to the local
industrialist". What was needed was a survey of needs
"industry by industry."[189] It was recognized, however,
that the "piecemeal" nature of the Inspectorate's contacts meant
there was little possibility of collating their
information to produce a picture of national requirements.[190]

The problem was given extra force by the re-emergence
of a powerful shibboleth - superior foreign practice.
"I say it with great sadness," Graham Savage wrote from
Berlin, "that Germany is far and away ahead of us in the
provision of Technical Schools.."[191] The "alarming"[192]
fact emerged as the major conclusion to a series of
discussions in the early summer of 1938. But remedies
were not to hand in the absence of "definite or
authoritative views" from industry. It was admitted that
the alarming reports of the preceding decade had done
little to improve matters.[193]

So pressing was the need to turn the situation
around that the Board decided to abandon its earlier
position and actively seek out industrial opinion
wherever it could.[194] Regret at the state of affairs
was turning to panic. "Special attention" was demanded
of the government to give "as high a priority as possible

and special fincancial assistance" to technical education in the hope of improving links with industry.[195] As ever, cost proved to be the stumbling block and monies were not made available in peacetime.

(x) The Professional Institutions and Junior Technical Education, 1918-39.

The greatest coherence introduced into education for industry was the growth and development of national certificate schemes. They were moderated by the professional institutions. One consequence was the facilitation of contacts between the institutions and the Board of Education.[196] This was seen, however, as a over-emphasis on the need for "highly trained" technologists.[197]

This was only partly true. The Institutions were concerned to maintain professional entry from a variety of educational sources. Not least, they were favourably disposed towards junior technical schools and to part-time routes to professional qualification. The North-East Coast Institution, for example, set up an Education Committee as early as 1902 in response to the Education Act, with the intention of promoting secondary technical education.[198] The Mechanical Engineers constituted an Education Group in 1935 which was active in the wartime discussions on the training of engineers.[199] The "active minded" Civil Engineers, meanwhile, took a particular interest in part-time routes to associate membership.[200] The Electrical Engineers for their part had always included the junior technical schools within their sphere of interest.[201]

In general, the junior technical schools were warmly regarded as having a part to play on the route to professional accreditation. The North-East Coast

Institution in 1918[202] and the 'Mechanicals' in 1943,
looking forward to peacetime reconstruction, urged that
they should be freed from the restrictions on their
development as fully fledged secondary technical schools.

In the North East, secondary technical education
(to 16) in junior technical schools was widely regarded
as a national investment by employers and teachers alike,[203]
and was actively promoted by education officers like
Percival Sharp,[204] later Secretary of the AEC. The
members of the Apprenticeship Committee of the North
East Coast Institution (which included shipbuilding and
engineering employers as well as educational representatives)
took up the proposal with enthusiasm, regarding the
schools as seedbeds of future managerial and technological
staff.[205] The matter was raised with the Board of
Education[206] which remained unconvinced, only conceding
that "the brightest pupils"[207] should find their way to
the technical colleges.

The demand was repeated almost a generation later
by the 'Mechanicals' who took pride in the various routes
to professional status - "not limited to those who
complete a secondary education."[208] The junior technical
schools in particular had proved "advantageous" to
the engineering industry, and the barriers in the way of
pupils matriculating was deplored.[209] The North East
Coast Institution, meanwhile, urged that the age of entry
to apprenticeship should be raised, and its period
shortened by taking on boys who had voluntarily stayed on
at school, especially junior technical schools.[210] In
discussion, they attracted the highest accolades from
individual members of the Institution, with only the

Board of Education's representative expressing concern at
the tendency for ex-pupils to move from craft to
supervisory positions.[211]

Matriculation difficulties dogged the preparation for
professional registration the junior technical schools
could offer. It was possible, by dint of considerable
effort for boys in schools within the larger colleges to
"find their way" on to National Diploma courses or
external London University degrees.[212] The officially
fostered inferiority of junior technical schools to
Secondary Schools[213] did not go unchallenged. On
occasion, a schools' demand to offer a foreign language
was made explicitly in terms of the entry requirements of
professional institutions.[214]

Among the Institutions an enabling view of the
purposes of junior technical schools prevailed.
Exceptions to this outlook - that of the Electrical
Engineers for example[215] - dominated by Sir Arthur Fleming
indicated the predominance of the training interests of
employers over educational views within the Institution.

(xi)   Employers and Technical Education for Industry,
       1918-39.

There is sometimes a failure to acknowledge the
lack of interest by employers in technical education when
considering the relationships between education and
industry between the wars. There is an emphasis instead
on the anti-technical and anti-vocational disposition of
the schools, the alleged diminution of technical education,
and the neglect of junior technical schools, even in
accounts that present a frankly instrumental view of
education for industry.[216] In fact, the majority of

employers and employer associations were unable to frame educational policies at national or industrial level. Ignorance and suspicion bedevilled relations with the educational service. Recommendations were cast in the most general terms, while the desire to reduce public expenditure[217] was at odds with the extension of school life or day continuation education. It was in this context that junior technical schools attempted to claim the attention of employers.

The views of the FBI best characterize those of employers for whom technical education had no real meaning. The Federation demanded instead "a sound general education"[218] in place of day continuation or extended education. It favoured training at the works, ensuring control of education by employers.[219] Members were suspicious of the Board of Education and reluctant to co-operate with it. Arthur Fleming, a powerful voice in the Federation's counsels, believed that an extended education was a "waste of time" and that in his experience "there was no real determination of (a) boy's worth as a worker due to his previous education," including preparation in a junior technical school.[220]

Thus, the overtures of the Consultative Committee requesting the Federation's views on education were rebuffed.[221] When working with professional and technical institutions on the Emmott Report, the Federation dismayed its partners, favouring voluntaryism over government action.[222] Despite polite interest the Federation was unable to work with the Board on a range of issues.[223] Crude sectionalism of this type was by

no means confined to the Federation.[224] and was a significant barrier to co-operation on educational issues of relevance to industry.

Less commonly, industrialists took a progressive view of education. This outlook was typified by the industrial membership of Political and Economic Planning (PEP), the brainchild of Sir Basil Blackett and Israel Sieff, a director of Marks and Spencer.[225] It was broadly sympathetic to the outlook of the Consultative Committee regarding re-organization, and was enthusiastic about the expansion of junior technical schools.[226]

But most employers were critical of technical education in schools. Their case was made in terms of the need for preparation in fundamental subjects. The 'secondary' pretensions of junior technical schools also came in for criticism because of the tendency of boys not to enter craft positions after having received a "superior" education. Many pupils did in fact go on to non-manual occupations, a factor which sometimes led employers to prefer elementary school leavers. Junior technical school pupils by contrast proceeded on to ONC courses and were "lost to the trade"[227] for which they had been prepared. This view found wide support, not least at the Board, whose officials complained the schools had "succeeded too well," by "over-educating apprentices intended for craftsmen." Only less academic pupils - "boys of lesser mental calibre" - should attend the schools.[228] This 'leakage' gave rise to discussions between the Board and employers in an attempt to keep good craftsmen at the bench. The Board argued for a dilution in the quality of

entrants to the schools. More pessimistic employers took

the view that only direct entry to industry at 14 could

secure their major aim.[229]

Where employers were personally involved with the

technical schools they were seen as a valuable source

of skilled labour, and their pupils preferred above those

from other institutions.[230] This was particularly evident

in London where trade schools prevailed, and Manchester

where large employers like Mather and Platt and others

represented in the Manchester Association of Engineers

had close links with the essentially pre-employment

schools at Openshaw and Newton Heath.[231]

(xii)   <u>Trade Unions and Technical Education, 1918-39</u>.

Trade unions were well-disposed towards junior

technical schools where they appeared as quasi-secondary

institutions. Attendance was frequently counted in full

towards the length of apprenticeship. The Trades Union

Congress (TUC), meanwhile, was intensely interested in

the extension   of educational opportunity. It

possessed a thorough and consistent understanding of

issues, and was concerned with the "content" as well as

the "machinery" of education.[232]

The TUC consistently opposed vocational education

in schools,[233] while lending support to the development

of a "less bookish"[234] secondary curriculum. Thus, while

day release was welcomed as an extension of training

opportunities, secondary education in technical institutions,

junior technical schools included, was regarded as an

unwelcome expedient.[235]

The TUC Education Committee was distinctly 'Hadowist'

in outlook, taking the view that the needs of the
great majority of children could be best met by a series
of 'biased' post-primary courses which recognized the
place of handwork and local concerns within the curriculum,
including industry, so long as instruction was not
directed towards particular employment needs.

There were several arguments advanced against
vocationalism in schools. Most commonly it was said that
the majority of tasks in industry required no special skills
and were repetitive and boring. Future workers,
therefore, by way of compensation required a 'liberal'
education to assist them in developing their whole
personalities and make constructive use of their leisure.[236]
Concern was expressed, moreover, that vocational education
was essentially of benefit to employers.[237] The danger
was that schools would come to replicate the "traditional
class structure"[238] of society by preparing school
leavers for particular occupations. That was one
reason why the multilateral school found wide support
in the face of the recommendations of the Consultative
Committee.[239] On occasion, anti-vocationalism was
linked to fears about the concealed motives of groups
like the NUT (not a member of the TUC), or the
Conservative Party's real commitment to educational
reconstruction.[240]

In any case, there was a strong undercurrent of
opinion that academic secondary education was superior
to other types because it assisted social mobility.[241]
Even when the value of 'useful' subjects was admitted,
it was widely believed that grammar schools were best able

to provide a genuinely "cultural" or humane treatment.[242]

Practical bias in the secondary school was incorporated into the demand for multilateral schooling building on the foundations of junior technical education. Trade schools, however, were condemned for their narrow outlook.[243] In the meantime, the association of junior technical schools with local industry was commended as an example of close co-operation and educational independence.[244] At bottom, ambivalence towards junior technical schools was most in evidence. To be set alongside their promise to give effect to a secondary technical curriculum was the fear that vocationalism might be indistinguishable from work related training.[245]

(xiii) Conclusion.

The complex of central administrative, political and industrial interactions ensured that instrumental justifications for vocational education prevailed over the case for its educational benefits. School organization mirrored the social order. It corresponded to a well-defined and generally understood social structure, relatively static in disposition which the schools would leave undisturbed.

This represented a hardening of administrative attitudes as more restricted interpretations of the secondary curriculum took hold after 1917. By contrast, the preceding years had witnessed a degree of experimentation. The School Certificate offered a means of defining the curriculum with the support of the universities, during a period of unprecedented expansion in secondary education. The Board of Education accepted that the academicism of the examination was the price of standardization. The drift of policy was confirmed by

other circumstances which favoured an increasingly

selective system of secondary education. These

included the financial constraints on educational

advance, as well as alternative priorities, notably the.

re-organization of elementary schools and a growing

desire to expand 'intermediate' secondary education. The

latter was directly linked to the job market as clerical

openings declined in the 1930s.

Conceptions of a slowly evolving social order

were accompanied by the low level of industrial interest

in technical education, and the limited awareness of the

use of scientific applications.

The junior technical and trade schools were regarded

as a valuable source of craft, skilled manual and

supervisory workers. Employers and the Board however,

complained frequently that junior technical schools by

preparing their pupils for professional posts in industry

or for higher courses were over-stepping their

pre-apprenticeship functions.

Opposition to this instrumental conception of

practical education counted for little before 1926.

The Hadow Report of that year encouraged, on educational

grounds, the development of 'practical' education in

re-organized Senior (modern) Schools. The same year

also marked the end of the progressive disengagement by

the Board of Education from detailed control over the

curriculum. Administrative policies, the Board

believed would ensure, along with dialogue with local

authorities, the occupational classification of

schools. In fact, it was the signal for increased

variation in the curriculum of junior technical (and other)

schools.

Up till then, the Board had taken little notice of demands for an enlarged conception of practical education in schools, disregarding the technical associations and even the recommendations of the Thomson Report.

The only interests to carry any real weight with the Board were the local authorities and the professional associations. It will be seen in Chapters 3, 7, and 8 that the local authorities took a more enabling view of practical education but that they were by no means united at this or any other period behind a single conception of vocationalism themselves. The professional associations, meanwhile, co-operated with the Board in detail and were still in a state of openness regarding the educational preparation of potential members.

The junior technical schools then were an anomalous group of institutions, partly educational and partly industrial. The particular balance struck could be seen in their local relationships with employers and the technical colleges; the length of courses and the extent to which their curricula was restricted by pre-employment functions. There was growing uncertainity about their future. The Hadow Report expressed some concern about their position within a system of re-organized senior schools. The Board's reply, in 1930, stressed their preparatory nature. The only other administrative space that remained for them - long before it was confirmed in the Spens Report - was as some kind of alternative to the secondary (grammar) school.

Arguments for the replication of the social order in the schools had their origins in conceptions of national well-being; the need for an appropriately trained workforce; as well as cost and a conservative social disposition. These outweighed arguments for the educational value of vocationalism.

CHAPTER 3

Local Policies and the Board of Education: The Emergence
of the 'Liberal' Technical School, 1913-39.

(i)   Introduction

This chapter contains an account of the interpretation

of central policies among the local authorities, as they

attempted to make sense of local priorities. A variety

of strategies emerged that attempted to bring administrative

coherence to post-primary education, and render junior

technical schools less anomalous, educational institutions.

Local voluntary pressures after 1918 resulted in an

unsatisfied demand for extended education beyond 14,

sometimes in junior technical schools. But no single model

of the 'liberal' technical school prevailed. The

curriculum of these schools is best defined negatively,

in terms of impatience with the academicism of the

secondary schools. Thus the technical high school

which appeared at the end of the period, and which

outlined an integrated vocational curriculum was 'another

type' of liberal technical school. It did have exemplars but

cannot simply be said to be an expression of local

desires.

(ii)   Local Education   Authorities and Junior Technical
       Schools: Some Aspects of Provision.

The local development of junior technical schools

was a more complex phenomenon than is allowed in the

tale of "success" charted in some sources.[1] Their

distribution was uneven and their number insufficient to

meet industrial demand for their pupils.[2] Their growth

was slow and unspectacular, especially when set alongside

that of Secondary Schools. Table 5 shows that although junior technical school places increased almost sixfold. during the period, the total number was a small proportion of Secondary school places, which doubled between 1918 and 1938.

TABLE 5

Pupils in Junior Technical and Secondary Schools in England and Wales, 1918-38.

Year	(A) Pupils in Junior Technical Schools	(B) Pupils in Secondary Schools	% (A) of (B)
1918	5,101	238,314	2.1
1923	12,392	358,531	3.5
1927	19,333	371,493	5.2
1929	18,877	386,993	4.9
1933	22,470	441,883	5.1
1936	27,354	463,906	5.9
1938	30,457	470,003	6.5

Source: Board of Education, Annual Reports.

The 37 institutions recognized in 1913 grew steadily in number during the war. By 1938 there were almost 250 junior technical schools with places for more than 30,000 pupils.

The Board's approval for the early junior technical schools continued to be determined by evidence of effective local industrial demand.[3] By 1938 they were more widely distributed and often performed a quasi-secondary role. Usually they were housed in technical colleges, which they were obliged to leave after 1944 when they officially became part of the system of secondary education. This was a matter of regret in some quarters, notably the ATTI, which for professional reasons had regarded the

TABLE 6

Location and Growth of Junior Technical Schools, 1918-38

(England and Wales).

Area	1918 Schools	Pupils	1923 Schools	Pupils	1927 Schools	Pupils	1929 Schools	Pupils	1933 Schools	Pupils	1936 Schools	Pupils	1938 Schools	Pupils
Counties	41				30	5176	35	5236	70	7065	86	9433	96	11169
County Boroughs		5101	86	12206	51	9252	51	8721	77	9731	85	11245	89	12082
London	20				20	4276	22	4286	44	4649	45	5393	45	5785
Wales	1	-	3	186	3	629	7	634	12	1025	16	1283	18	1421
Totals	62	5101	89	12392	104	19333	115	18777	203	22470	232	27354	248	30457

Source: Board of Education,
Annual Reports.

school-college relationship as mutually beneficial,
as well as providing educational progression for students.[4]
But generally separation from the colleges was welcomed
as an essential step towards parity with grammar schools.[5]

TABLE 7

Distribution of Junior Technical School Places by Area,
1923-38. (%)

Area	1923	1927	1929	1933	1936	1938
Counties		27	28	31	34	37
County Boroughs	98	48	46	43	41	40
London		22	23	21	20	19
Wales	2	3	3	5	5	4
Total	100	100	100	100	100	100

Source: Board of Education, Annual Reports.

Industrial demand nonetheless remained the main factor
determining the location of the schools, which almost
without exception were urban institutions. Several
counties had no experience of junior technical schools
in 1944. The large number of pupils in county junior
technical schools were concentrated in a few areas.
A significant number of county boroughs, including some
in heavily industrial districts like Gateshead, Huddersfield
Rotherham and Wolverhampton, had no technical schools.
In many smaller county boroughs the absence of junior
technical schools was part of a wider deficiency in
post-elementary education. Financial constraints, in
short, determined the variety of non-statutory educational
provision. It was no accident that county boroughs
without junior technical schools were usually those where
senior schools re-organization proceeded slowly.

In Leeds, the schools of the 1930's evolved from earlier
institutions housed in the mechanics institutes at
Holbeck and Woodhouse, which had been among the
original group of schools recognised in 1913. Other
early schools included those at Toxteth (Liverpool),
Portsmouth, Hull, Newton Heath and Openshaw (Manchester)
and Newcastle-upon-Tyne.[6]

In Wales, competition for educational resources, and
a cultural disposition against technical instruction,
meant that junior technical schools formed a small
proportion of the system of post-elementary education, where they
approximated more to secondary schools than pre-apprentice-
ship institutions. Academic secondary courses were much
in evidence. They had been promoted under the Welsh
Intermediate Education Act, and in some areas admitted
more than half of elementary school pupils.

Junior technical schools in Wales were located
in the industrial south of the country, where the Board
was anxious to promote technical education as a means
of assisting economic renewal.[7] Newport had an engineering
school as early as 1917; Cardiff followed suit shortly
afterwards.[8] Of the remaining county boroughs Swansea
did not possess a junior technical school until 1936 and
Merthyr Tydfil did not experiment with junior technical
schools at all. The most extensive development of junior
technical schools took place in Glamorgan and Monmouthshire.
Engineering, mining and building courses were offered in
schools attached to larger technical institutes in the
valley communities of the coalfield.[9]

The distribution of places between boys and girls
favoured the former in the ratio 3 to 1.

By contrast, the London County Council (LCC) in
1940 had a flourishing network of junior technical
schools both in number and the variety of courses
they offered. Middlesex also planned, and began to
implement a considerable expansion of technical education,
in response to local population growth and industrial
development in the mid 1930s.[10] Other Counties to make
noteworthy provision of junior technical schools were
Essex, Kent and Lancashire.

On the whole, county authorities were more
reluctant to set up junior technical schools than county
boroughs. Of the 47 counties (including London) 27 had
no experience of junior technical schools in 1936. In
view of the guarantees required from local industry this
is unsurprising, except perhaps in Staffordshire and
Durham. In the latter secondary school places were free
and comparatively numerous. County junior technical
schools, without exception, were located in industrial
pockets or larger urban centres and sometimes met very
specific industrial needs.

Of the 79 county boroughs in England and Wales, 24
had no junior technical schools up to 1944. Of these,
the largest authority was Bradford which took special
pride in the scale and accessibility of its secondary
school provision. The remainder were small to medium
sized boroughs like Chester, Hastings and Southampton.

Usually a borough would support a single institution
which might well offer more than one course. Only larger
centres were able to maintain a range of institutions.
Of these cities, Birmingham alone had not set up
junior technical schools in the early period before 1918.

TABLE 8

Junior Technical Schools (England):
Distribution of Pupils by Gender, 1918-38.

Year	Boys		Girls		Total
	No.	%	No.	%	
1918	3594	70	1507	30	5101
1923	10413	85	1793	15	12206
1927	14124	76	4580	24	18704
1929	13642	75	4601	25	18243
1933	15422	72	6023	28	21445
1936	18844	72	7227	28	26071
1938	20961	72	8075	28	29036

For boys the most important preparation was for the
engineering and construction industries and for openings
in commerce. There were also a number of trade schools,
principally in London, which prepared boys and girls for
highly specific occupations, through mastery of
particular trade processes. For girls, the trade
school was especially popular, usually for entry to
'Needle Trades' but included courses in photography,
hairdressing and laundry work. Commerce was the most
popular general course for girls.

The distribution of places between London
('trade') and provincial ('industrial') schools meant that
engineering institutions were largely provincial, while
'womens trades' were almost exclusively a metropolitan
concern. Other specialist courses reflected local industrial
demands. At Hull, boys were prepared for the mercantile
marine and the fishing industry. Northampton offered
courses to boys in the boot and shoe industry. Liverpool
and Manchester were able to support trade schools for
girls. At the Newton Heath school in Manchester boys
were offered preparation for the rubber industry. In

Essex, Lancashire and the West Riding small numbers of pupils were prepared for entry into the chemical industry, mining, and textile trades.[11]

(iii)   The Local Authorities, the Board of Education and Technical Education for Industry, 1918-39.

The inter-war years were a period of considerable financial restraint in education. It has been noted in Chapter 2 that the various sectors under the Board's control fared quite differently. Elementary education was hit hardest of all, while secondary education suffered least as a result of special consideration by the Board of Education and the local authorities. Technical education, meanwhile, was hardest hit in the early 1920s but fared better in the round of economies in the 1930 s.. Support for technical education grew in the face of Britain's faltering competitiveness and the evidence of superior provision abroad. Thus between Hadow (1926) and Spens (1938) the outlook for technical education improved, although the response from industry was far from effective, and much needed to be done to modernize and re-equip the technical colleges in 1939.

The Board's investigations revealed that co-operation between local authorities was poorly developed and usually confined to specialized advanced courses. The most active authorities acted independently of the Board and there is nothing to suggest that other authorities had made much progress before the outbreak of war.

The AEC was closely involved in the preparation of the Board's principal review of local initiatives, 'Co-operation in Technical Education,' (1937) through its Secretary Percival Sharp.[12] Publication was the outcome

of a national survey of local efforts, and a series of
meetings between the Board and representatives of the
local authorities.

The inadequacy of provision for technical education
had been highlighted by the Inspectorate[13] in its
investigations which had preceded the programme of educational
advance outlined by the government in 1935. The Board's
attempt to remedy this state of affairs was by means of
informal communications with the local authorities. This
reliance on administrative approaches was undoubtedly
influenced by the achievements of the regional councils.[14]
Some members of the AEC, however, felt the matter demanded
the attention of nothing less than a Departmental
Committee. In the event, urgency proved to be the decisive
factor. The major object of the inquiry was the distribution
of £12 million allocated for capital expenditure in
technical education in October 1935.

From the outset, the Board directed attention to
the question of co-operation between authorities to
facilitate the preparation of schemes for technical
education on a regional or industrial basis. The efficient
ordering of existing provision was a major consideration.
Schemes already helping to break down particularism
between authorities were of special interest as possible
models for future development.

It is instructive that replies to the Board's most
detailed survey of local initiatives during the period
were not forthcoming from very nearly half the total
number of LEAs. Rural counties and smaller county
boroughs were the principal offenders though Leeds,
Liverpool and Manchester were notable absences. To some

extent these omissions were filled by reports from the Regional Councils which remained, however, voluntary consultative and advisory bodies. Nonetheless, the Board was pleased with the result.

Of the replies received by the Board, the great majority of authorities indicated they had some measure of agreement with their neighbours. The extent of co-operation varied widely from simple payments to participation in one of the regional schemes (though even here the degree of involvement revealed wide differences).

Nevertheless, the net result can hardly be said to show that technical education was becoming a matter of widespread local interest. The responsibility for this state of affairs must be shared by the Board, LEAs as well as industry which had not translated verbal support for technical education into effective demand. Moreover, LEAs differed widely in outlook either because of the severity of educational economies or a set of alternative educational priorities, chief of which was elementary school re-organization.

The junior technical schools were only marginally affected by local schemes. Small numbers of places were occasionally reserved for extra-district pupils. East Ham, for example, sent a few pupils to neighbouring West Ham. More usual was the reservation of places by county authorities in county boroughs. Norfolk, for instance, sent pupils to schools in Norwich, Ipswich and Yarmouth.[15]

There was little improvement, however, up to 1939 when the whole question of improving technical education

was placed before the Cabinet by De La Warr. In
particular, premises and equipment required modernisation,
The time was not yet propitious for the demand.[16]

(iv)   The 'Liberal' Technical School: Local Authorities
        and Junior Technical Education, 1913-39.

     The educational economies of the early 1920s
meant that the programmes outlined by local authorities
in response to the Education Act of 1918 were subject to
retrenchment. The Hadow Report, meanwhile, had cast doubt
on the place of junior technical schools within the
educational system so long as they remained pre-apprenticeship
institutions. It seemed unlikely that junior technical
schools in 1926 were going to be an important component
in an expanded system of post-primary education as Selby
Bigge had anticipated towards the end of the war.[17]

     Some local authorities, however, were proposing that
junior technical schools could form the nucleus of a
group of secondary technical institutions.. In spite of
constraints on their development many junior technical
schools offered an 'alternative' secondary education to
their pupils. This was in breach of the 1913 Regulations.
It represented local determination to make them
genuinely educational institutions. The process accelerated
after the relaxation of the clauses dealing with
curriculum issues in the Regulations for Further Education
in 1926. Some local authorities, notably the LCC, took
a strictly instrumental view of their functions. But more
liberal interpretations emerged not long after 1918,
as LEAs attempted to meet the growing demand for voluntary
post-elementary education, suited to local situations.

     The technical rival to the academic secondary school
had respectable antecedents.[18] It meant that the junior

technical schools were seen as potential additions to
the network of secondary schools, believed by the
Board of Education by the early 1930s to be overprovided
themselves. The organization of post-primary education
before 1944 strongly reflected employment opportunities
and was also increasingly justified in terms of 'special
interests and abilities.' The former became less tenable
after 1944. But even earlier, administrative order was
imposed on the logic of 'special abilities'. The Board
was to grasp this device during the war as a principle
of school organization and it was ultimately to harden into
the doctrine of 'tripartitism. It found fullest expression
among the most extensively re-organised local authorities
in a system of secondary, senior and junior technical
schools. This was justified principally on grounds of
administrative convenience, although it was coming to be
buttressed in the 1930s by reference to psychological
principles.

Among the consequences of the administrative
division of vocational education was the emergence of at
least three competing paradigms about the nature of the
curriculum. Firstly, there was the 'selective' technical
variant of the secondary 'grammar' school curriculum that
looked to engineering and the assumptions of science for
inspiration. This was encountered in a number of junior
technical schools, and was commemorated in the 'Technical
High School' described in the Spens Report. The principal
and prevailing rival to this view (most influentially
held by the Board of Education) was the instrumental
tradition of technical education. Its justification was
industrial need for skilled production workers, and gave

encouragement to the early acquisition of particular
vocational skills. This was marked in the building schools
and of course the trade schools and was impossible to
sustain, overtly at least, after 1944. Another theme,
not well-developed before the war but which proved to be
the most powerful and positive rival to the separate
technical school was the comprehensive interpretation of
vocational education. A favourite idea of some
educationalists between the wars, it was non-prescriptive
and made no reference to aptitude or intelligence. It
found fullest expression in senior (modern) schools and
later still in secondary modern and comprehensive schools.
Graham Savage, in his later existence as Chief Officer
at the LCC, insisted that practical education was not
merely appropriate but necessary for all but a small
proportion of pupils as an essential part of a complete
secondary education.[19]

The curricula of junior technical schools exhibited
considerable variety - between trade schools and
industrial schools; London and the provinces; England
and Wales. J.W. Bishpam a former member of the Consultative
Committee explained to his successors that trade schools
were not forbears of junior technical schools but
"parallel types which cannot wholly be separated."[20] Trade
schools were most common in London and industrial schools
in the provinces.

> "Even among schools of the provincial type," it
> was pointed out, "there are considerable
> differences, the schools in the north being as
> a rule more definitely vocational, while those in
> the south of England tend, in some cases at any
> rate to approximate towards the work of a
> Secondary school."[21]

No collective educational philosophy could be advanced
by the junior technical schools. Locally they deferred

to secondary schools in the length of their courses (usually 3 years), facilities and age of admission of pupils. Concern about the restrictions on Junior Technical schools come to a head in the mid 1920s as local authorities struggled to provide opportunities for more varied 'higher' education for the growing number of pupils electing to remain at school beyond 14. This resulted in a reaction against a narrowly instrumental interpretation of their functions. The Board at first re-asserted its opposition to these developments but gave way, partly in the face of unexpected resistance and partly as it sought to disengage itself from detailed involvement in the curriculum. Its strategic withdrawal was announced in 1926. The Further Education Regulations in that year permitted much greater local flexibility in the curriculum and organization of junior technical schools. The Board remained committed, however, to a utilitarian view of the schools.

Local authorities responded by lowering the age of entry and establishing longer (4 year) courses. In time a small but growing proportion of pupils remained in junior technical schools beyond 16.

TABLE 9

Junior Technical Schools (England): Percentage of Pupils aged 16 years and above, 1927-38.

Year	No. of Pupils 16 years old and above	% of total
1927	749	4
1929	1106	6
1933	3166	15
1936	2936	12
1938	3253	12

Source: Board of Education, Annual Reports.

The rift between the Board of Education and the local authorities about the role of junior technical schools had widened from the early 1920s . Occasionally, these conflicts became a matter of wider interest. Fisher, for example, was pressed in the Commons to lift the restraints on the schools, allowing them freedom to devise appropriate local courses and to be classified as institutions of 'higher' education. The exclusion of foreign languages from the curriculum, and clauses enforcing entry to artisan occupations were particularly condemned. Fisher, briefed by his officials, was unmoved, stating that their purpose was "to give technical instruction to young people who are desirous of entering trades."[22] Even Trevelyan, Labour President of the Board of Education emphasized their instrumental functions. He suggested they might be one means of increasing the supply of skilled labour into the building industry in order to implement Wheatley's Housing Act.[23]

The impatience of the local authorities was joined by that of the technical associations. 'Education', the journal of the AEC attacked the failure of the Board to

review the 1913 Regulations for Junior Technical Schools. National requirements, it was insisted, demanded that junior technical schools should be considered "a preparatory school for the technologist." The Board's concern, however, was to keep the secondary schools "safe from .. competition."[24]

This was the opening shot in a carefully orchestrated campaign conducted in the educational press. Leading figures in the Association of Technical Institutions (ATI) were especially critical of the restrictions on the length of junior technical school courses, the exclusion of foreign languages from the curriculum, and the under-takings regarding entry to employment demanded of parents. The solution was to "allow the junior technical school to be recognized as a type of secondary school," preparing pupils for industry and for advanced courses in the technical colleges.[25] Particular criticism was directed at Eustace Percy for his conspicious lack of interest in improving the status of the schools.[26] Much to the chagrin of the technical associations, although Percy believed the secondary school was ready for change, he saw no need to create a parallel network of 'technical' secondary schools.[27]

'T' Branch was unmoved by these representations. When the Draft Regulations for Further Education were issued for discussion it was suggested that the instrumental nature of the schools would become clearer if they were re-named Junior Vocational Schools. This provoked an outcry. The ATTI complained it would damage the image of the schools with employers and parents who would regard them simply as "centres where trade instruction

will be found."[28] More importantly, the AEC expressed its dismay at the Board's proposal. It would limit the schools to "a narrow training in craftsmanship" and denied the "liberal" preparation for industry[29] they offered.

The strength of reaction persuaded the Board to climb down, and indeed, the right to teach a foreign language was conceded. Matters stabilized again along the old course. The Board continued to emphasize their pre-employment functions and the self-contained nature of their courses. The technical institutions demanded secondary status for the schools. They pointed to the variety they brought to the post-elementary curriculum, emphasized their good relations with industry, and asserted the right of local self-determination with the curriculum and age of entry.[30]

The AEC was growing in influence during the 1920'S. It was in the vanguard of opinion in favour of school re-organization, a policy that was pressed on member authorities. The Hadow Report was the touchstone of progressive educational opinion, and the commitment it expressed in favour of fitting the school to the child coloured every approach to questions of school organization.

However, by accepting and emphasizing the instrumental aspects of junior technical schools,[31] the Hadow Report pre-empted discussion about their educational worth, especially their contribution to child centred education through the development of manual skills. Instead, the Report was unclear about the place of junior technical schools within the educational system once re-organization got under way.[32]

The Board's interpretation of the junior technical schools was consonant with the conclusions of the Hadow Report. In 1930, the Board's latest attempt to define the role of the schools [33] again threatened to stifle local initiative. The Board's reassertion of their pre-apprenticeship functions was once again met by opposition. The AEC condemned the Board's views as anachronistic. Changed circumstances, it was argued, had put great pressure on the institutions. They had been established when the school leaving age was 13. But "vocational" education for pupils below the compulsory school leaving age was hard to defend. It was pointed out that modern schools were actively developing practical courses. Junior technical schools were credited with pioneering vocationalism in schools. The Board's limitations would "undermine the contribution they might make to the development of the modern school."

The AEC urged local self-determination of the curriculum on the grounds that interest in practical education had replaced commitment to a particular industrial occupation. In any case, it was no longer possible for industries to give firm undertakings to accept junior technical school pupils for apprentice training. Logically then, training for employment should not remain central to their purposes. They had already departed from that model without complaints from local employers. In reality many offered courses not unlike those of the best modern schools. To attempt to preserve the junior technical school as it had originally been constituted was backward looking and flew in the face of established local interpretations. [34]

The statement was welcomed by local authorities attempting to implement schemes of school re-organization. The point of view of the most forward looking local administrators was summarised by Frederic Evans, a Divisional Officer in Kent. He expressed the hope that post-elementary education would become universal, and believed there were signs in its organization that it was "inevitably moving towards one coherent whole." The only important distinction in future between institutions, he believed, should be length and type of course. Evans drew attention to the AEC's demand for equality between re-organized senior schools and secondary schools and blamed "official mental inelasticity" at the centre for the slow progress towards a single post-primary system based on senior, secondary and technical schools.[35] These views were representative of local impatience with the variety of post-primary Codes which allowed for different standards of provision between institutions.

The technical associations, were forced into an uncomfortable defence of separate junior technical schools in the light of the fertilizing role sketched out for them by the AEC in response to the Board of Education. The ATTI stressed that it was "atmosphere" that was largely responsible for their success, and this could not be reproduced in institutions outside technical colleges.[36]

The Board of Education was alive to pressures from the LEAs but in the climate of severe financial constraint was unable to improve its standing with them. The LEAs themselves had financial problems of equal magnitude. In consequence, they approached the question of junior

technical schools under re-organization from a rather
different angle to the bipartite symmetry suggested by
Hadow, or the views of the technical institutions. The
most pressing consideration for local authorities was senior
school re-organization as the major step towards a
suitably differentiated post-primary system of
education. The restrictions on capital expenditure in
the 1930s meant that very little was done to improve
secondary school facilities. Available finance was spent
on re-organization. The Board's most senior officials
bluntly acknowledged in private that there was "no
prospect"[37] of being able to relieve the accumulated
needs of the LEAs .

In this climate, local authorities anxious to expand
post-elementary education were obliged to extemporise.
The junior technical schools often proved to be vehicles
for innovation. Thus, they provided 'alternative' secondary
courses in Wales and a number of counties and county
boroughs in England. In Workington, for example, the
junior technical school enjoyed similar facilities to the
local secondary school, admitting selected pupils at 11.
Furthermore, there was no barrier to matriculation imposed
on technical school pupils.[38]

These initiatives were taken a step further at
Smethwick where the differences in interpretation between
national policies and local needs were most clearly
brought into focus.[39] The argument between the Smethwick
LEA (championed by the AEC) and the Board of Education
became a 'cause célèbre' because it was represented as
an attack on "local automony." It resulted in the passing
of a resolution at the Annual Conference of the AEC in

1931 demanding local determination of the organization, curriculum and length of courses in junior technical schools.[40]

Significantly, the Director of Education for Smethwick gave as his major reason the authority's wish to "experiment with the organization of Junior Technical Schools", the need to secure optimum conditions for the development of evolving senior schools. By lowering the age of entry to junior technical schools to 11 senior schools would be able to frame their courses without the prospect of having to prepare their most able pupils for entry to another institution at 13. Anticipating the tripartite ideal, he argued that each type of school would be able to develop a "single objective". The effect on the junior technical school would be an improvement in its corporate life as a result of the longer course. Standards of achievement were also likely to rise as it shared the selective cohort of pupils with the secondary school.[41]

The most important local authorities to press for an enlarged provision of 'technical secondary education' under re-organization were Essex and Kent. It was being argued by the 1930's that the secondary schools had overreached themselves, and that their expansion should be limited in favour of other types of school, particularly so as to meet the "requirements of industry and commerce." The secondary schools were sharply criticized. There was concern that their curriculum was dominated by the matriculation test represented by the School Certificate. It was also alleged that their ambience was inimical to "earning a living". The demise of the higher grade school

tradition was lamented. Not least, the differences in status between 'academic' and 'technical' secondary education could not be overcome so long as separate Codes remained. It was suggested that,

> "alternative types of higher education institutions of equal status but with a less academic outlook"

should be established rather than attempting to re-orientate existing secondary schools.[42] Their pre-disposition towards preparation for black-coated and clerical occupations, and the hold of the School Certificate on their curriculum meant they were unable to respond quickly to the needs of many pupils for an education that was relevant to employment after leaving school. The promise of improved selection methods, however, meant that a new group of secondary technical institutions, growing out of the junior technical schools (but unshackled from their punitive restraints) could be set up.

The Essex LEA - consciously echoing the demand of the technical associations - envisaged a school

> "offering the cultural amenities of secondary schools .. but affording .. a variety of vocational options determined in their nature and content by the industrial and commercial requirements of the area."[43]

The Kent LEA also set great store by the liberalization of junior technical schools as "a valuable alternative form of secondary education .. where industries are situated." They had been established in the county as one response to the growing voluntary demand for secondary and other 'higher' education since 1918. Their growth had been especially marked after the publication of the Hadow Report. The authority's assessment of local needs meant that it took an independent and positive

stance about the benefits of an expanded network of
junior technical schools, in place of the ambiguity
expressed by the Consultative Committee. The Kent
schools, (in common with those in Lancashire), were not ·
narrowly vocational institutions but were intended to
provide "a course of general education with a bias towards
a group of industries."[44]

A decade later, the need for an expansion of places
in Kent's junior technical schools was as pressing as
ever. In particular, they were seen as a means of
relieving pressure on the central schools which had found
themselves attempting to meet the demand for practical
education. The need had become increasingly apparent
as re-organization had proceeded.[45]

In Wales, the growing enthusiasm for junior technical
schools was really a means of circumventing the prohibition
on additional secondary school places in the 1930s   under
the guise of re-organization. In Wales, the division of
institutional functions - "inter-relation" - so clearly
apparent in some areas was much less well-defined so
that the newly established junior technical schools
provided a conventional 'academic' secondary education
to pupils who did not obtain a secondary school place.[46]

The popularity of secondary schools in Wales was a
reflection of cultural values projected on to the
educational system. It led to growing support for the
multilateral school as a means of developing the practical
curriculum as one element within a single streamed
institution. Welsh secondary schools for their part were
not to be outdone. Already it was said that they
included practical subjects within their curricula, and

were therefore secondary technical schools.[47]

The Board could not indefinitely resist the pressures for change in the status of junior technical schools. It took great pains though to ensure that the Secondary Regulations were not breached. They remained intact because the Board was able to insist that the conclusions of the Consultative Committee under Sir Will Spens should not be pre-empted. This was a means of fending off the demands of the local authorities[48] which were increasingly vocal in their support of junior technical schools as institutions providing full-scale well-resourced practical secondary education.

In fact, the Board had conducted its own inquiry into the working of junior technical schools in England. It had been set in train just prior to the announcement of the Consultative Committee's new reference in 1933. The Inspectorate's report was published in 1937. How far its conclusions were designed to influence the Consultative Committee is unclear. It was at least calculated to posit an alternative and authoritative statement about the schools.

'T' Branch had a deep suspicion of the Consultative Committee. Its officers felt it was not fit to comment on matters relating to technical education. Not only was the Committee too 'educational' in outlook, its lack of expertise meant it was liable to be influenced by sectional interests. Accordingly, a report on junior technical schools which emphasized their pre-employment nature[49] would inform the Committee's deliberations, reveal the error of local interpretations, and set the schools in the wider context of European trade schools

which had been the subject of a related inquiry by the Inspectorate.[50]

The results of the Inspectorate's efforts were circulated as a long pamphlet entitled, <u>A Survey of Junior Technical Schools in England</u>, (1937). Its general tenor was favourable and attention was drawn to their poor standards of accommodation. Despite this solicitation, the case for their future development was made in strictly instrumental terms.[51]

This had direct relevance for the curriculum which was critically surveyed in a further report, <u>Suggestions in Regard to Teaching in Junior Technical Schools</u>, (1937). The Inspectorate's report outlined some of the "suitably practical" ways in which pupils were taught and drew particular attention to problem solving and investigations as a method of scientific education. It resisted, though, the lesson to be drawn, namely, that many junior technical schools were technical secondary schools. Instead their instrumental value for 16 year olds entering industrial apprenticeships was emphasized. In mathematics, for instance, the limitations of the short course and the severely restricted approach enjoined by the Board meant "much that is included in the ordinary academic course must be excluded in order to concentrate upon matters of real value in subsequent practice."[52] Science, meanwhile, although not externally examined was deliberately restricted in content to prevent the schools from becoming "a recognized avenue for further academic training.."[53]

It was becoming increasingly hard though for the Board to resist local demands particularly from local authorities that were actively re-organizing their

schools in the face of financial constraints. In Essex,
for example, the county plan for technical education
announced in 1935 was closely followed so that "progress ..
was the greatest ever recorded."[54]

The precedent for purpose built 'technical secondary
schools' was set by the Essex local education authority.
The county's population had increased significantly in
certain areas, as a result of the growth of the motor
industry. This had led to a local shortage of accommodation
in conventional secondary schools. The authority elected,
by preference (as well as economy), for a policy of
"supplementing" secondary places in "Institutions looking
more directly towards industry and commerce ..", housed
within the network of new technical colleges. It was
intended that the schools would offer technical, commercial
and art subjects as part of a general course parallel to
the First School Certificate course in ordinary secondary
schools.[55]

The school at Dagenham was the "main and major"
exception to the Board's policy against 'technical
secondary schools'[56] and as such is of special interest. It was
never a junior technical school, but was described as
an "experimental school", and was located in the South-
East Essex Technical College. Planned to admit 900
selected pupils it was a very large school indeed. Building
started in 1934, and the school was officially opened in
1937. In 1940, it offered a wide range of practical
courses, including Art, Commerce, Domestic Science,
Engineering and Science.[57] A similar pattern was followed
at Walthamstow (1938) where the school formed part of the

recently opened South-West Essex Technical College.
These schools replaced junior technical schools at
Leyton and Walthamstow. At Romford and Grays 'technical
secondary schools' were formed out of Intermediate schools.
The result, the local authority announced proudly was
that

> "at four of the six County technical
> schools the change of outlook envisaged
> by the Education Act (of 1944) had taken
> place several years before the Act was
> passed."[58]

The vigour of local authorities in pursuing secondary
technical education was frequently associated with the
influence of individuals. In Essex, the concerted expansion
of selective technical schools was a major priority of
the Chief Education Officer, John Sergeant. In particular,
he was responsible for obtaining permission for the lower
age of admission to the school at Dagenham.[59] These
policies were actively followed by his successor B.E.
Lawrence. After 1945 steps were taken to bring the schools
in the North-East and Mid-Essex Technical Colleges into
line with admission of pupils at 11, and to carry out
the programme for secondary technical education outlined
in the Development Plan.

In Kent, the forceful Chief Education Officer
E. Salter Davies was strongly associated with the development
of 'industrial' junior technical schools in the 1920s
and 1930s . The Kent schools continued to defer to the
secondary schools and were clearly seen as occupying a
position between them and the central schools.[60]

Other influential figures made representations
to the Board for the right of local education authorities
to set up secondary technical schools. They included

Chuter Ede, Chairman of the Surrey County Council
(1933-7), and Ernest Rowlinson, leader of the Labour
controlled City Council in Sheffield and a highly
respected member of the Consultative Committee. Both
had approached the Board with proposals "for some sort
of technical secondary school."[61] They were important
local politicians with a close interest in education.
Chuter Ede was sponsored during his parliamentary
career by the NUT and was a leading member of the
Labour Party Education Committee.[62] The summit of
his influence in educational matters was as
Parliamentary Secretary to the Board during the passage
of the 1944 Education Act. Rowlinson, meanwhile,
dominated Sheffield politics between 1926 until his death
in 1940. Lord Alexander, whose personal association with
Rowlinson extended back to the period when he was Chief
Education Officer at Sheffield (1939-44) recalled his
"outstanding ability .. particularly relating to the
education service." His special interest was to develop
"technical secondary schools as distinct from grammar
schools."[63] A fitting memorial was the sometime
technical school in the city which commemorated his
interest in the subject.

(v) Conclusion.

The generation of policies 'bottom up' from the local
authorities resulted, from early times, in competing
interpretations of the place of junior technical schools,
to the limited pre-employment functions put forward by
the Board of Education.

The support of many local authorities for
vocationalism, was primarily sensitive to its educational

value. The result was the creation of genuinely secondary institutions among the junior technical schools. Local authorities themselves were not united in their conceptions of the schools. They developed in response to a variety of local needs. At the end of the period, the 'Technical High School' emerged as an 'ideal type'. This imposed coherence on the range of local practices. Its closest approximation were the large, new, purpose built 'technical secondary schools' of Essex. Administratively, these schools were rendered obsolete after 1944 because of their association with technical colleges. It is more useful to think of the 'Technical High School' as 'another type' of post-primary selective institution than the outcome of local developments before 1939.

The 'liberal' technical school was not a co-ordinated growth and was not in many cases even primarily conditioned by the desire to promote practical secondary education. In fact, there were a number of disparate challenges to the 'official' conception of the junior technical schools. This was the result of demands for improved post-elementary education, signified by growing voluntary attendance at schools beyond the minimum leaving age. In trying to use their resources wisely the local authorities found themselves at odds with the Board of Education, which continued to press the pre-employment training functions of junior technical schools on LEAs.

The local authorities were accurately reflecting social demands - or in the case of 'industry' a lack of interest, in technical education to promote quasi-

secondary technical schools. These initiatives were strongly endorsed by the AEC, growing in confidence, and anxious to press the case for the autonomy of its members.

In particular, local education authorities wished to devise longer courses, select all post-primary pupils at 11, and make use of college facilities for secondary school pupils. The Board of Education viewed these developments with consternation because they disturbed national policy on the curriculum and organization of secondary education. Increasing selectivity and standardization was the Board's aim. Variety and the proliferation of institutional types was deplored. Not least, technical secondary education seemed unwarranted in the face of contracting employment opportunities for secondary school leavers.

The efforts of the LEAs to develop vocational secondary education are most simply defined negatively as 'not training'. There was a growing educational warranty for including practical education in schools. Local authorities facilitated the opportunities for experiment. 'Technical secondary schools' were becoming a divisive issue between the Board of Education and the LEAs. "Our attitude to them so far," R.S. Wood (head of 'T' Branch) informed a group of his most senior peers, "has been to discourage them, but we can hardly maintain this attitude if the Consultative Committee is likely to recommend schools on similar lines."[64]

CHAPTER 4

From Junior Technical School to Technical High School: The Consultative Committee and Educational Policies in the 1930's.

>   ".. the Technical High School. The creation of
> this type of school, which does not yet exist,
> is advocated by the authors of the Spens report.
> The matter is one the merits and disadvantages
> of which it is difficult to make clear to the
> lay reader.."
>
> F.H. Spencer,
> Education for the People, (1941), 199.

(i)   Introduction.

This chapter contains an examination of the range of educational interests concerned with technical education in schools. It is based on the records of the Consultative Committee between 1933 and 1938. These are preserved in the Public Record Office (PRO). In the 1920's and 1930's the Committee was at the height of its activity and independence. It expressed progressive educational opinions but was nonetheless, in view of its composition open to sectional points of view. Secondary Education, (1938) proved to be the Committee's final report. Chapter VIII, entitled 'Technical High Schools' was the most influential interpretation of secondary technical education between the wars. The Chapter's recommendations were in sympathy with the tenor of contemporary opinions in favour of the extension of practical education. Its administrative foundations were less secure.

'Technical High Schools' were not forced on the Consultative Committee by the Board of Education, as is sometimes suggested.[1] This has proved to be an enduring myth fostered by members of the Committee itself.[2]

This account traces the evolution of the recommendation for 'Technical High Schools', generally reckoned to be among the most significant suggestions in the Report. Because of the Committee's detailed procedures and the volume of memoranda and oral evidence submitted to it, the Committee operated slowly and methodically. Its report was awaited with considerable interest. In the discussions which followed its publication there was no single focus of attention. The Report was considered in the light of the interests of particular groups. The proposal for a new institution, however, drew wide comment. "What is a Technical High School?" demanded one commentator rhetorically, fearful that it might limit the most positive aspects of junior technical schools, in the quest for secondary status.[3]

(ii)   Finding a Reference for the Consultative Committee, 1933.

The Consultative Committee had its origin in the "conviction that professional experience ought to have an authoritative place in the new central department.."[4] In its early years, the Committee reported on subjects suggested by the Board of Education. After 1923, it exercised greater autonomy, reporting on matters put forward by its members and endorsed by the Board.[5] It became a respected independent voice, alive to research and good practices in education. In encouraging the Committee under Sir Henry Hadow to put up subjects for discussion, the task of systematically examining the stages of public education within the Board's provenance was begun.[6]

The topics suggested to the Board in 1933 all reflected interest groups within the Committee. By this

time the Committee was more representative of the three
main sectors of public education (elementary, secondary
and technical). The need for increased technical
representation was raised in 1928 by Hadow himself, in *
response to outside pressures. The Permanent Secretary
E.H. Pelham agreed, so that two places were set aside,
one for a representative of the technical institutions,
and the other for trade and industry.[7] The latter was
given special point by the findings of the Emmott and
Malcolm Reports.

This was the background to the appointment of
J. Paley Yorke and Herbert Schofield to the Committee in
1934. 'Industry,' meanwhile, was given a voice through
R.L. Roberts a company director and a governor of
Borough Polytechnic. By the time Hadow resigned and was
replaced by Sir Will Spens[8], the Committee's subject
had already been agreed and submissions had been received.

There had been no shortage of suggestions. A
reference which originated within the Committee was
finally accepted, without the direction of the Board.

The matter was first broached with Pelham by his
deputy Maurice Holmes whose own preference was for the
Committee to build upon earlier reports, perhaps by looking
at "the whole conception and content of Secondary Education."[9]
Meanwhile, a range of other possible subjects were put
forward within the Board,[10] and opinion was actively
sought, for example, from the Medical Branch.[11]

'T' Branch stood aloof from these discussions.
In a joint memorandum drafted by H.B. Wallis and E.G.
Savage,with the knowledge of A.A. Abbott (Chief Inspector),
Laskey (the President's Private Secretary) was informed

"that the Consultative Committee as at present
constituted is not an appropriate body for
dealing with specifically technical problems
.. We have therefore no suggestions of this
kind to make.."[12]

The estrangement of 'T' Branch from the Consultative

Committee was already a matter of record within the Board.

Albert Abbott had specifically proposed that technical

opinion should have increased representation, and suggested

a panel of 'experts' should be set up to speak for industry

and commerce, with which the Committee could confer.

W.C. Eaton (Head of 'T' Branch) took the idea of separation

even further, and canvassed the creation of "a distinct

Consultative Committee for Technical Education."[13]

Members of the Consultative Committee, meanwhile,

had been busy collecting their own thoughts. Their

suggestions, set out in a paper dated 25th May 1933,

numbered no fewer than 11 separate proposals.

Most arresting, however, was William Brockington's

suggestion with its challenging, closely argued and well-

integrated text. He argued that the Committee should

not direct its attention to a discrete subject but should

"complete the picture" begun in the 'Hadow' reports of

1926 and 1931. In view particularly of post-primary

school re-organization,

"it is desirable ," he wrote, "that the
Consultative Committee should consider the
other forms of secondary education provided
by schools which are not administered under the
Elementary Code. These schools are Grammar
Schools, Junior Technical .. and Trade Schools
and vaguer forms of Technical High Schools.."
The "most important aspect of the problem," he
continued, "is (a) the framework, and (b) the
varying content of the education to be provided
for boys and girls of whom more than 80% do not
remain at school beyond the age of 16 and less
than 5% proceed to universities."

Brockington framed his suggestions into a reference,

parts of which ( ) were deleted by the Board. It ran:

> "To consider and report upon the organization
> and interrelation of schools, other than those
> adminstered under the Elementary Code which
> provide (secondary) education for pupils
> beyond the age of 11+; regard being had in
> particular to the framework and content of the
> education of pupils who do not remain at
> school beyond the age of about 16; (and to
> advise as to the arrangements to be made for
> testing the pupils at the end of the school
> course)."14

Pelham informed Hadow that, as amended, Brockington's
reference seemed most appropriate as the next subject of
inquiry. He pointed out, however, that examinations were
the preserve of the Secondary School Examination Council
(SSEC).[15] Hadow responded quickly. "I think we had
better accept it as it stands," he informed R.F. Young,
"will you bring it up at the next meeting?"[16]

The Board's decision to accept Brockington's
reference gave deep offence to 'T' Branch. In a long
minute, W.C. Eaton (having consulted Savage) informed
Pelham that he was "rather perturbed" since the junior
technical schools would be "within its scope." A
public inquiry, he reasoned, would be premature. An
investigation of the schools would be better left to
an internal inquiry by the Inspectorate, without "the
intervention of another body". At the root of these
concerns was territorial jealousy; the possible loss of
tactical advantage for its own investigations. Above
all there was the likelihood that the educational
functions of junior technical schools would outweigh
instrumental considerations with the Consultative
Committee.[17]

(iii)   The 'Rank and File' School: Instrumental Views
         of Junior Technical education.

        In view of the misconceptions surrounding the

Board of Education's attitude to junior technical schools,

it is necessary to look at the case it presented to

the Consultative Committee. This may be set alongside other

evidence more friendly to the case for secondary technical

education.

        Maurice Holmes (Deputy Secretary) presented the

Board's policy on secondary education. He criticised pupils

(and their parents) who regarded secondary schools as a

"means to advancement" rather than "acquiring knowledge

for its own sake." He doubted, in any case, whether

traditional openings in clerical or blackcoated occupations

could sustain the growth of secondary school places. He

argued there was evidence that "less academically minded"

pupils from secondary schools were finding their way

"into the industrial ranks."[18]

        Holmes,together with F.R.G. Duckworth, a senior

member of the Inspectorate admitted that the secondary

curriculum had become less and less flexible with the

growing hold of the School Certificate. Although they

had no 'a priori ' grounds for opposition to closer

links between secondary schools and technical colleges,

they insisted that suitability for secondary education

must continue to be measured in terms of "the likelihood

of passing the First School Certificate."[19]

        These views were amplified by the Inspectorate.

F.B. Stead, a former Chief Inspector of Secondary Schools

urged an increasingly selective entry to secondary schools

in the light of widespread misallocation of pupils at
11.[20] In girls' secondary schools, meanwhile, the
"growing uneasiness" about the suitability of the course
for many pupils was matched by the "feeling of inferiority
attached to vocational work." The solution was to divert
"secondary technical" subjects from secondary to modern
schools.[21]

The downgrading of Secondary schools was the Board's
preferred alternative to the problem of an oversupply of
places. Their curriculum, for all its academicism, was
at least well-defined and was not, therefore, in need
of wholesale change. Administratively too this fitted
in neatly with the re-organization scheme outlined in the
Hadow Report.

The Inspectorate ignored or even rejected the part
junior technical schools could play in diversifying
post-primary education. C.A. Richardson, for example,
an elementary school inspector dismissed their courses
as "highly specialized preparation for particular
industries."[22] Contrary to the assertion that the
Board sought to include junior technical schools (suitably
disguised) under the Secondary Regulations,[23] the
prospect was accepted with great reluctance.[24] The
prevailing view, however, was that 'Technical High Schools'
should be administered under the Regulations for
Further Education.[25] Fundamentally, technical and
secondary institutions had mutually exclusive purposes.
Technical institutions served industrial needs and
therefore "were in a separate category" to educational
institutions proper.[26]

Many junior technical schools, of course, had not developed along narrowly instrumental lines. Instead they offered an alternative secondary education and their courses were a legitimate expression of dissatisfaction · with the traditional curriculum. In its evidence to the Committee, 'T' Branch argued forcefully for the maintenance of the instrumental functions of junior technical and trade schools."Both types appear to me to be admirably adapted for fulfilling their professed aim," commented Albert Abbott. They stood apart from other schools in "providing vocational instruction" so that it was "wrong" to lower the age of entry to 11. Warming to his theme, Abbott expressed doubts about the value of selecting the most able elementary school pupils for transfer to junior technical schools. He suggested that entrance examinations should be replaced by a "qualifying" test. By the same token, he shrank from the notion of "technisising" the grammar school, insisting on a functional division of institutions by type.

In this scheme, the junior technical schools - for as far ahead as he could see - would be unchanged. He deplored experiments with 'technical' and 'secondary' sides within a single institution as had happened at Workington. The number and types of junior technical schools, Abbott emphasized, should be subject to effective industrial demand. The schools, he reasoned, were in the business of "training pupils who will eventually become foremen." The secondary curriculum, he conceded, could be broadened, but could not be made practical.[27]

W.C. Eaton and Graham Savage emphasized congruent aspects of departmental opinion. They accepted that other post-primary schools were developing practical courses, but insisted that junior technical schools remain industrial institutions. Their anomalous position as institutions providing full-time technical instruction to pupils below the compulsory school age was the price of their relationship with industry.[28] On this evidence, it can hardly be said that the Board led the Consultative Committee to recommend technical high schools. Rather, it sought to restrict entry to secondary schools and encouraged the diversification of the curriculum of re-organized senior schools. After Hadow, another type of secondary school cut across the policy of school organization agreed by the Board and being given effect in the localities.

These views found support in the localities, notably the LCC, where trade schools were most fully developed. Junior technical schools which prepared boys for supervisory posts came in for particular criticism.[29] The instrumental nature of the London schools was ensured by the College principals.[30] Care was taken to send the most able pupils to secondary schools, where the curriculum was framed along 'general' lines in an attempt to discourage links with technical institutions.[31] The Education Officer, Rich specifically rejected the "technical secondary school", contending that equivalent courses were to be found in central schools administered under the Elementary Code.[32]

(iv)   Varieties of 'Secondary' Education.

a.   Local Perspectives.

The local authority associations outlined a progressive programme of educational development before the Consultative Committee. Their suggestions included the acceptance of the junior technical schools as secondary institutions. Their views found wide support among a group of members of the Committee, including Sir Percy Jackson, Brockington, and Lady Simon. Jackson was a particularly influential figure. He dominated local authority dealings with the Board as a result of his control of the County Councils Association (CCA), carrying the Association of Metropolitan Corporations (AMC) and the Association of Education Committees (AEC) with him.[33]

Perhaps more influential still was the Association of Directors and Secretaries of Education[34] which represented professional educational administrators. The AEC's role as intermediary between the central department and the local authorities lay in the future.[35] Even so, it assumed an important place in the process of consultation, though Percival Sharp (its Secretary) never enjoyed the full confidence of the Board.[36]

Both the CCA and the AMC favoured a single post-primary system. The latter also believed that the junior technical schools, using careful methods of selection, could provide "diversified" secondary courses. The AMC gave no encouragement, however, to the technical high school, regarding the 'liberal' junior technical school as one element within the multilateral school.[37]

The AEC was more positive about the junior technical school as a means of diversifying post-primary education than the CCA or AMC had been.[38] This was in keeping with its demand that LEAs : should determine locally the nature of junior technical schools. The ADSE was warmest in its support of the schools, congratulating them for having developed alternative secondary courses, and lending its authority to secondary schools in technical colleges.[39] Dissatisfaction with academicism led the ADSE to declare that,

> "Many administrators now thought that the
> logical outcome of this whole development
> would be a type of Secondary school which
> might be described as the Technical
> Secondary School.."[40]

b. <u>Psychological Research and Technical Aptitude</u>..

The evidence of educational psychologists provided a scientific legitimation for the institutional separation of pupils by 'type'. Psychology promised the allocation of talent to its appropriate sphere. It was objective and value free, offering a neutral 'scientific' classification of pupils according to mental type and ability.

The issue of selection for secondary education attracted the attention of eminent educational psychologists. Cyril Burt and C.W. Valentine addressed the Consultative Committee in person on general aspects of selection. William Alexander, meanwhile, was invited before the Committee as an expert on selection for technical education. In the event, the Committee recommended only a 'general selective' examination. But expressions of confidence about selection for technical education grew. Alexander's was an early representation of the case.

"School organization," Alexander argued, "should

be based on the psychological nature of children." The
type of school appropriate to each pupil could be
determined by the evidence of 'g' (general intelligence)
the most important factor of all, in some combination
with 'v' (verbal facility) and 'f' (practical ability).
A child displaying high 'g' in conjunction with a marked
'v' factor was best suited to a grammar school education.
A pupil (a boy) who evinced high 'g' in conjunction with
'f' should be placed in a technical high school. Examples
of such schools, Alexander noted, could be found in the
U.S.A., and even his native Glasgow. The second order
of schools, for children with an average 'g' factor,
Alexander sub-divided into commercial and junior technical
schools. These had a decidedly instrumental character.
Lastly, children of low 'g' were destined for non-
specialized and undivided senior schools for boys and girls.

When related to existing school organization, the
most pressing need was "to build new Technical
Secondary Schools." Alexander assured the Committee that
techniques were already sufficiently advanced to allocate
pupils in this way. He conceded that 'v' and 'f' were
not as evident at 11 as 13, but argued on grounds of
administrative convenience for selection at 11. He
admitted that technical education for girls was far from
clear and made no attempt to define the curriculum, except
that it would not be academic. The main problem,
Alexander insisted, was to refine tests for 'v' and 'f'.[41]

c. Professional Viewpoints: Teachers and Educationalists.

Professional opinions were well-represented in the evidence to the Consultative Committee.

The most trenchant case against academic secondary education was presented by Cyril Norwood. He argued that it should be made much more general. He took no account of the developing interests of adolescents,[42] regarding the schools as agencies of manpower planning and the maintenance of the social order.[43]

By contrast, the teacher associations argued for a greater variety of secondary courses. Vocational interest, and the increasing demand for school leavers with scientific and technical understanding, were mentioned as objects for curriculum change.

'Secondary Education for All' had been a part of NUT policy since the 1920s.[44] The junior technical schools (in which the Union had members) were warmly regarded as one element within a diversified network of secondary schools.[45] The Assistant Masters (IAAM) suggested they might constitute one 'side' within a multilateral school, reminding the Committee that Jackson himself had put forward this point of view.[46] Attention was drawn to the Central Secondary School at Sheffield as an example of how the school might be organized.[47]

The case for the 'Technical High Schools' was most clearly advanced by the technical associations.[48] It had been a part of their policy for more than a generation.

In view of the evangelical manner in which the technical associations (especially the ATTI) presented their case, the extent to which their recommendations

found a place in the Report is remarkable. The
Committee's members clearly regarded the 'technical'
witnesses as slighly ridiculous. In the event, the
coincidence of other evidence presented to the Committee
meant that the hyperbole of the technical associations
did not prove a setback. Rhetoric about the transforming
power of technical education on society was joined by a
virulent attack on the academicism of most secondary
education, as well as the tactical rejection of
'the Multiple Bias School.'

The Associations proposed that junior technical
schools should admit pupils at 11 for a full five year
secondary course. This would ensure they did not receive
the "second skim". The upper age of 16 was determined
by the age of transfer to senior courses in technical
colleges.[49] The neglect of sixth forms in technical
high schools made it difficult for them to challenge the
pre-eminence of secondary schools. The Committee realised
this but accepted the 11-16 technical high school on the
advice of its 'technical' representative Paley Yorke.[50]

It was argued that the junior technical schools
already offered a "liberal" secondary education.
The process had accelerated since the relaxation of the
Regulations for Further Education in 1926. Damagingly,
however, they had not managed to escape from their
instrumental associations.[51]

The ATI and APTI suggested that 'Junior Technical'
should be replaced by 'Technical Secondary' and that
equality with traditional secondary schools be established.[52]

(v)   Good 'Alternative' Practice: Institutional
       Evidence for Secondary Technical Education.

The Consultative Committee was empirical in outlook
and progressive in inclination. It was receptive to
evidence of good practice in education. Much of its
authority was derived from its careful and methodical
procedures. Evidence was sifted and weighed; opinions
closely scrutinized, and where possible, tested.

The case for 'technical secondary education' was
made in terms of the shortcomings of academic secondary
education, but the Committee demanded evidence for
secondary technical education. Within the interstices
of the school system there were a number of exemplary
institutions from which the model of the 'Technical
High School' was constructed. It was intended to

"provide a liberal education with Science
and its applications as the core and inspiration."[53]

"A particularly effective act was the visit of the
Committee .. to representative junior technical schools..",[54]
including the Poplar School of Engineering, Paley Yorke's
school. The evidence to the Committee, however, was not
'packed.' Submissions approached the problem of junior
and secondary technical education from local needs and
perspectives. It was the sifting and collating of this
evidence which helped produce the blueprint of the
technical high school.

The instrumental justifications for junior technical
education were played down in the Report. The continuation
of links with technical colleges that was recommended
was not entirely supported by the evidence. Gateway
School in Leicester, for example, was converted from a
junior technical to a secondary school as its position

became increasingly "precarious."[55]   Sometimes
junior technical schools were regarded as a "definite
weakness," utilizing specialist teachers and lowering
the prestige of advanced work.[56]

A point of agreement was the need for the technical
school course to be longer. This would allow an extended
treatment of subjects and permit the inclusion of a
foreign language.[57]   It would also enable the schools to
compete for more able pupils with secondary schools.[58]
The success of the schools was attributed to their
'atmosphère', which was derived from contact with industry.

The example of certain schools offered a model for
secondary technical education. These included Loughborough
College School and Gateway School (both Secondary schools)
and the Allen Glen School in Glasgow, formerly an
organized science school, transformed into "a high school
of science."[59]

The secondary curriculum, argued Edward White of
Gateway School, should combine common subjects with others
determined by the 'interest' of pupils. He regarded the
benefits of this association in moral terms, as a means
of infusing education with "honesty of purpose". There
were already signs of this diversity in secondary schools in

> "a greater sympathy towards both mental
> and manual work and a closer link with
> the industries of the area."[60]

At Loughborough, the secondary school sought to
develop practical education within the limits set by
industrial demand for apprentices, and the need for boys
to take the School Certificate. The most distinctive
feature of the curriculum - kept free from examination-
was 'handicraft.' By means of project work, sometimes

over a period of weeks, boys were encouraged to produce

items of commercial standard. Pupils were also

encouraged to collaborate in small groups, using College

facilities and calling on the expertise of staff. "In

our school," submitted the headmaster, A.T. Eggington,

"Handicraft, or as I should prefer to term it Constructive

Work or Craft Science, is given the chief place.."

He admitted, however, that the School Certificate increasingly

compromised practical education. In mathematics and

science, for example, teaching had "tended to become more

definite and academic" to the exclusion of practical

and scientific applications.[61]

The most rigorous challenge to the academic

secondary curriculum was presented by J.H. Steele,

headmaster of Allen Glen's School, Glasgow.

In the Intermediate department (Years 1-3) pupils

were allowed to begin specialization by "a practical

study of heat and internal combustion engines." Their

opportunities to matriculate were maintained by an

intensive German course in the sixth form. Three

specialized post-Intermediate courses were offered,

'Engineering", 'Chemistry' and 'Art', from which pupils

would select one.

Steele went on to describe the approaches used

in the school, emphasizing the educational nature of the

courses. The commitment to science was the starting point

for the development of a curriculum integrated by

vocational purpose. The content of the English course,

for example, was determined by the nature of the

specialization followed. Oral skills were developed by

describing "mechanical operations or scientific

experiments." Essays posed questions like "how to make," or required the preparation of scientific instructions f¬d reports. Passages from scientific writing were employed in readings in class. The claims of technology,, meant that the traditional curriculum of English was foreshortened. Literature was not included in the syllabus. Greatest difficulty was encountered in language teaching which remained both formal and "thoroughly unpopular."

In Mathematics, Science and Technical Subjects great care was taken to stress their inter-relationship, and to emphasize the deduction of mathematical and scientific principles from practical situations.

The scheme of work in physics and chemistry, for example, was intended to "relate .. physical science .. more closely .. to the phenomena of the industrial world which surrounds us." This was accomplished by calling upon 'experts' to give talks to senior boys, and by capitalising on the interests of the pupils themselves. Boys were encouraged to present talks about their own enthusiasms, and to undertake projects with a view to make items connected with their interests. Examples included wireless sets, galvanometers, valve testers and electric motors. School societies also enabled boys to develop their enthusiasms,[62] so that influences from below were also responsible for shaping the curriculum.

The success of schools like Allan Glen's was in stark contrast to the Board of Education's assessment of related activities in England. Practical secondary education had been encouraged by the Board at least up to 1917.[63] Vocational activities, especially if they

were not technical, were encouraged and publicized.[64]
Most notably, one of the Consultative Committee's early
reports was on practical secondary education.[65] The
Board's interest in vocationalism diminished rapidly
after the introduction of School Certificate. Practical
education came to be regarded as a threat to the coherence
of the well-defined academic secondary curriculum. There
was concern that practical courses were a cloak for
directly vocational preparation in secondary schools.
It would devalue the established secondary course, was
at variance with the institutional organization of schools
by type, and interfered with the 'grading' of secondary
schools, by which the Board intended to make secondary
education more selective before 1939.

The most damaging evidence that 'alternative
courses' in secondary schools had degenerated to mere
vocational preparation came from the West Riding. This
evidence was placed before the Consultative Committee in
support of the case against practical secondary education.

The Chief Education Officer for the West Riding,
J.H. Hallam defended the expansion of secondary education
in his authority. He argued that 'alternative courses'
encouraged pupils to remain at school voluntarily beyond
the leaving age, and had educational value in themselves.
Moving to the offensive, Hallam attacked the Board's
attitude as an artificial restriction,

> "of greater variety into the secondary school
> curriculum, lest the Secondary schools should
> encroach upon the domain of technical education."

The West Riding policy was for

> "more children to enjoy the amenities of the
> secondary school.. and a widening of the choice of
> curriculum within the individual school.."[66]

Hallam restated his views before the Consultative

Committee. He argued that the use of technical college

facilities by secondary schools was justified in terms

of the

> "legitimate expansion of (the) school
> curriculum and not as vocational training."

The important point, Hallam declared,

> "is not whether the subject, the teacher,
> the premises or the equipment have been
> traditionally labelled Secondary or Technical,
> but whether proper regard is had to educational
> purpose."[67]

The Board rejected this explanation, which struck at

the heart of its secondary policy. The instrumental

nature of the 'alternative courses' were upheld, and

they were deemed

> "inconsistent with the prevailing conception
> in this country of what the schools should be."[68]

(vi)   Outstanding Problems.

In spite of the meticulous way in which the Consultative

Committee went about its business, its treatment of

secondary technical education was far from complete. The

Committee itself was aware of some of these omissions.

Girls' needs were not squarely faced; commercial subjects

were ignored; the problems of selection, age of entry

and examinations were not properly resolved.

The good intentions about the need for practical

education relevant to girls[69] were not fulfilled. In

the final report, suggestions were limited to training

for commercial and domestic employment,[70] courses that

were manifestly not the equal of the technical high school

course. This reflected existing practice in girls' schools.

At Chatham, for example, the curriculum was consciously

limited by the requirements of trades and the social

origins of pupils.

> "It is my considered opinion," declared
> the Principal, "that a curriculum of
> this type is the best which has been
> developed so far for girls of average
> mental ability of the Wage-earning
> class."[71]

Similarly, junior commercial Schools (in which the pupils were predominantly girls) were consigned to the category of 'other technical schools' on the advice of Paley Yorke. They were regarded as akin to trade schools, offering a course in which "mechanical skill" counted for more than "fundamental educational principles."[72]

The Committee adopted a positive stance on the age of admission to technical high schools. The evidence of witnesses was collated, and the recommendations of the Board's Inspectorate disregarded.[73] Admission of pupils at 11 would enable the technical high schools to share the most able pupils with secondary schools. The Committee avoided, however, the question of positive selection for technical education. The Committee expressed the belief that, in time, educational psychology would provide a more secure basis for allocation. In the meantime, it pinned its faith in

> "the general selective examination by
> which pupils are at present recruited for
> the Grammar Schools."[74]

This was a weakness in the case for 'special technical aptitude' that pursued the technical schools thoughout their existence. It became a stick with which to belabour them, and a headache for their supporters. The claims for special abilities did not long survive the end of the war, and the case for secondary technical education was made in terms of the universal value of practical education for all children.

In certain particulars, the recommendations of the
Consultative Committee were overtaken by the changed
conditions that followed the war. Its attitude towards
external examinations and sixth forms are examples.

The grip of academicism on the secondary curriculum
reflected the hold of the School Certificate. It was a
warning against the extension of external examinations
to technical high schools. Their absence was put forward
to explain the success of junior technical schools. A
fruitful set of arrangements had emerged in which the
curriculum reflected local circumstances. Some schools
did enter pupils for Royal Navy, Admiralty Dockyard and
RAF engineer apprenticeships, but these did not distort
the curriculum. Elsewhere, schools issued their own
leaving certificates which enjoyed currency among local
employers.

But the technical high school would have to demonstrate
its equality with secondary schools. Paley Yorke
conjectured that,

> "some form of school leaving certificate
> might be desirable if such provision be
> possible without the imposition of an
> external examination." He suggested, "a
> form of school leaving certificate which
> could be issued by the school or the
> local authority and endorsed by the
> Board of Education."

In essence, this was applying the National Certificate
principle to full-time secondary day schools with the
Board taking the place of the professional institutions.[75]
This reflected the compromise reached between the Board
of Education and the ATTI in 1935.[76] The Consultative
Committee was re-assured on the point by R.S. Wood.

> "In effect," he informed its members, "the
> Board's proposal is to endorse under stated
> conditions the certificates already awarded by
> Junior Technical Schools."[77]

By neglecting sixth forms, the opportunity to develop advanced courses in technical high schools was arrested. The schools were seen largely in terms of industrial demand for their pupils at 16. Boys were expected to take up . apprenticeships, continuing their education on national certificate and even national diploma courses.[78] The trend was only slowly reversed after 1944.

(vii)   The Making of Chapter VIII: 'Technical High Schools and Other Technical Schools.'

The Consultative Committee divided into sub-groups to discuss issues of sectional interest, and for the purposes of compiling its Report. Spens himself took , an active part in this work. The minutes of the Drafting and Curriculum Sub-Committee are the records of the forum in which the detailed proposals about technical high schools were aired, once the principle was established. It was suggested that Paley Yorke should compile the chapter on 'Technical High Schools' with the assistance of the Committee's Secretary, R.F. Young.[79]

By May 1937, Paley Yorke had prepared the first draft of Chapter VIII. It was closely discussed by the Sub-Committee.[80] His major thesis - the need for a liberal science based practical education - was supported. It was also agreed that the proposed institutions should be associated with the technical colleges.

The future of trade schools proved controversial. The Board made strenuous attempts to ensure their continued existence. The Sub-Committee was divided on the issue so that the Boards demand that they "should be retained" proved decisive.[81]

A Curriculum Sub-Committee was formed in 1935, composed of Spens and Young, together with ten members

of the Consultative Committee, as well as a number
of co-opted members, pre-eminently Sir Percy Nunn.[82]
Its discussions brought to the fore the issue of
'alternative' secondary courses, which had proved so   •
alarming to the Board of Education. Notwithstanding
the evidence from the West Riding, Spens informed Graham
Savage that the Committee was considering the establishment
of engineering 'sides' in large grammar schools, where
Technical High Schools were not feasible. Savage replied
that existing examples of these courses were unduly
technical without being sufficiently scientific. The
Sub-Committee was not deterred, however, from its belief
that liberal technical courses could be established in
secondary schools. Ideally, it was suggested, they
would emphasize practical work and would be taught by
graduate teachers with industrial experience.[83]

Later, the Board refused to concede that a foreign
language, the key to matriculation, should be taught in
technical schools, despite the relaxation in the F.E.
Regulations. The Board protested that technical schools
should be unselective and aim at direct vocational
preparation. It was reasoned that language teaching,
therefore, interfered with the main purposes of the
schools.[84]

The question of technical education for girls was
not approached with the same enthusiasm aroused by
provision for boys. This reflected existing practices
as well as the 'male' atmosphere of the Committee itself.
The subject was treated on the level of details rather
than of fundamental issues. It was limited to a
discussion of Commercial and Domestic Science courses

in secondary schools.[85]

The preparation of Chapter VIII further devolved
on Paley Yorke who produced a number of papers summarising
the evidence the Committee had received about technical.
education. Paley Yorke is overshadowed by the reputation
of his 'technical' colleague Herbert Schofield, but in
truth, a larger share of the detailed work was laid at
his door. He gave voice to the arguments for 'technical
secondary education' put forward by the technical associations,
of which he was a leading member.

The educational justification for a 'technical
secondary course' built around engineering subjects
was first tested on the Consultative Committee in a
paper written jointly by Paley Yorke and Schofield. They
started from the premise the the junior technical tradition
of engineering education

> "connotes a method of approach to a group
> of subjects rather than the teaching of any
> single subject."

Consequently, the curriculum of junior technical schools
was not limited by instrumental tests, but included much
that was common to secondary schools. Specialization was
gradually introduced from the third year onwards.[86] The
best practices of the junior technical schools, it was
inferred, could be more widely developed in the new
institutions.

(viii) <u>The Consideration of the Spens Report by the
Board of Education</u>.

The Consultative Committee's activities obliged the
Board to review its own policies for secondary education.
The outline recommendations of the Report were examined
by an Office Committee led by R.S. Wood (Principal
Assistant Secretary 'T' Branch), in consultation with the

permanently constituted Secondary Advisory Committee,
and the informal LEA Advisory Committee.

The Office Committee believed that employment
opportunities for secondary school leavers had "radically
altered" for the worse. The result was that secondary
places were over-provided. The situation was exacerbated
by the proposed 'Technical High Schools' since the
Board would be forced to re-consider the pre-employment
justifications for junior technical schools. The Office
Committee was adamant, however, that the proposed
institutions should not be granted secondary status,

> "We cannot regard the solution as a
> satisfactory one. Technical High Schools
> will be vocational schools.. we believe it
> will be fatal to the tradition of
> Secondary Education.."

It was admitted, though, that if the technical high
school was rejected

> "there will still remain the problem of
> adapting the Secondary School system
> proper so as to fit more nearly present-
> day conditions.."

Although greater variety could be introduced into
the secondary curriculum by relaxing the grip of the
School Certificate the Board's preferred solution was
restrictive and conservative. The possibility that
existing secondary schools might be 'graded' into
'Modern' and 'Grammar' required exploration. One
possibility was to reduce the number of academic places
by re-designating grammar schools as modern schools.[87]

R.S. Wood interpreted the demand by local authorities
for 'alternative' types of secondary schools as evidence
of over-provision of traditional secondary places. He
saw the administrative organization of post-primary
education in terms of separate modern, secondary and

technical high schools, each under different Codes.[88]

The Board's ideal post-primary system in 1937 may be summarised as follows:

'Genuine'
Secondary Schools

existing places
divided between

traditional   intermediate
18+ schools   17+ schools
preparation   taking pupils
for First   to First School
and second   Certificate
school   only; some
Certificate   1 year
Examination   'special
                     courses'
                     16+.

Modern   Junior
Schools   Technical Schools
                          and Trade Schools

continuing   to be expanded;
the policy   possibly with the
of Hadow   addition of some
(Senior   Technical High
school)   Schools, if the
re-organization   request originated
                          in the localities.

The prospect of 'Technical High Schools' was greeted without enthusiasm by the Office Committee. Their limited appeal to local authorities was predicted, without resolving the problem of the "too exclusively academic lines" of the traditional (18+) secondary schools. Surprisingly, "multilateralism" was favoured by individuals[89] as a means of effecting curriculum reform. This was another means of re-asserting the primacy of "academic" secondary education by limiting 'grammar stream' places in multilateral schools.[90]

The Board's soundings indicated that technical high schools would receive a lukewarm reception by the local authorities. The Secondary Advisory Committee was

"more than doubtful" about their value. The majority
of its members favoured the provision of "special
facilities" in secondary schools or re-organized
senior schools instead.[91] In Wales, they were regarded·
as a threat to re-organization.[92] Their general adoption,
G.G. Williams concluded, would be "unnecessary and unwise".
Intermediate secondary schools could discharge all the
functions of technical high schools, and LEAs should not
be deflected from the task of re-organization.[93]

The Board had previously discouraged LEAs from
developing 'technical secondary schools'. The
"modification" of secondary schools proper was more
pressing.[94] For this reason, the technical high school
would divert attention from the real necessity, the
expansion of intermediate secondary schools.[95] The
opinions of leading Education Officers elicited scepticism
about the hope of re-classifying secondary schools. The
most probable development, said Peter Innes of Birmingham,
was the further growth of junior technical schools.[96]
Only William Brockington, who had drafted Chapter IX
'Administrative Problems' in which a unified Code was
demanded urged

> "three types of Secondary School .. the
> fully developed Grammar School.. a Modern
> Secondary School.. Thirdly, there would
> be Technical High Schools.."[97]

As predicted, the local authorities proved to be
unreceptive to the technical high school. In any case,
it was made abundantly clear to the LEA Advisory Committee
that "present financial circumstances" circumscribed its
discussions.[98] There was little enough warmth for
technical high schools under any circumstances. It
was generally agreed that they would "prejudice" attempts

to widen the traditional secondary curriculum. The
technical high school had its longstanding friends
among LEA representatives, like Percival Sharp,[99] but
in general "there was obviously no enthusiasm for the   .
institution .. on a large scale.."[100]   The Board
accepted this without demur.[101]

The Board's main interest in the Spens Report
was its treatment of the traditional secondary curriculum,
Making the best of 'Technical High Schools,' it was
proposed that the suggestions outlined might be adapted
to avoid "greater confusion of aims and functions than
exists at present." The Board had emphasized the
instrumental nature of junior technical schools in its
rival interpretation to the Consultative Committee in
1937. The technical high school, Wallis and Savage
declared, threatened to disturb this interpretation.
They hinted that fees in technical high schools might
be levelled up to match those of secondary schools, as
a way of making them less attractive to local authorities.[102]

The Secondary Advisory Committee, meanwhile, was
no warmer about the power of technical high schools to
influence curriculum development, because of the
small numbers of pupils likely to be involved, their
limitation to boys, and association with technical
colleges.[103]

The Board was at a loss to know what to do.
Multilateralism was condemned as a "tragic error,"
academicism defended - "one of our most precious
heritages," and vocationalism in secondary schools
censured.[104] Disappointed by the Spens Report, and the
reaction it had provoked, the Board decided to issue its

own Circular on Secondary Schools.[105]

> "The central idea," wrote Duckworth, "..is
> that there seems to be room for two types
> of secondary school, the grammar school
> taking pupils up to 18 and sending some
> on to universities etc. and modern
> secondary schools not normally keeping
> pupils beyond the age of 17, i.e. with a one
> year post-Certificate Course. In
> addition to this there might be technical
> high schools conducted under the RFE."[106]

Much of Chapter VIII then in the Spens Report was

"open to criticism." Certainly there was "no enthusiasm"

to replace junior technical schools by technical high

schools. The exclusivity of secondary schools was

defended. While there was a case for converting some

secondary schools to technical high schools, there was

no justification for engineering "sides" in secondary

schools.[107]

(ix)   Conclusion.

The Spens Report was a point of reference for all

subsequent discussions about secondary technical education.

The 'Technical High School' endorsed by the Committee

came to represent the 'ideal type' of practical education

for selected secondary pupils. At the time, however, the

suggestions embodied in the Report pleased neither the

Board of Education, nor the LEAs, nor educationalists[108]

who demanded the general adoption of practical education.

In the context of post-primary education in the

period, 'Technical High Schools' proved to be something

of a red herring. The course they outlined was expensive

and limited to a small range of specialisms. They opposed

academicism by multiplying the range of post-primary

institutions.

The 'Technical High School' occupied an existing

administrative 'space' and reflected particular interests

and organizational premises, notably association with technical colleges. Technical high schools represented an enlargement of the 'Hadow' scheme. Its symmetry, however, cut across national policies for secondary education. The Board of Education accepted the anomalous, instrumental position of junior technical schools. The advent of technical high schools disturbed this policy and threatened the Board's hidden agenda, the 'grading' of existing secondary schools with a view to limiting access to the full, academic secondary course. The Board had accepted the definition of the secondary curriculum by the School Certificate. The problems this raised were interpreted in terms of the deficiencies of pupils - 'misfits' - rather than the nature of the academic secondary course. The outbreak of war meant that technical high schools were sidelined. They reappeared in a new guise as 'secondary technical schools'. This involved a sea change for the Board's policy, which will be detailed in chapter 5. Briefly, secondary technical schools came to be proposed amidst a confused set of policy influences. Academicism remained of greatest worth, the experiences of wartime seemed to emphasize the intrumental worth of technical schools, political will, however, endorsed secondary education for all. The result was that the technical schools were slotted in to a brittle, compartmentalized scheme for secondary education.

The 'Technical High School' did, however, offer for general discussion the idea of an integrated vocational

curriculum for boys aged between 11 and 16. It
promised the reconciliation of occupational roles with
education, and of vocationalism as a unifying principle
for the selection of subject matter. The Report made
no recommendation on method and was content to rely on
"lines already in existence",[109] but supposed that
pupils would learn science through technology.

CHAPTER 5

Policies for Secondary Technical Education: Central Viewpoints during Wartime, 1939-45.

(1) Introduction.

Wartime circumstances gave rise to an increased consciousness about the need for social reform. In these years the embattled officials of the Board of Education, many of whom had spent a professional lifetime protecting the educational service from economies, were charged with the task of educational reconstruction.

The Board sought to consolidate traditional objectives, chief among which was senior school re-organization. But hostilities were accompanied by great changes of outlook. Political willingness was the signal for universal secondary education. The war brought home the importance of science to industry, and the desirability of manpower planning. The Board was brought into closer discussions about education and training with other departments of state. It sought the views of interested bodies. The mood of industry and the professional associations needed to be gauged. The combination of circumstances appeared, on the surface, favourable to the development of 'technical secondary education.'

(ii) Assumptions about Secondary Technical Education, 1939-45.

The Board of Education responded to the Spens Report with its own reflections on secondary organization in August 1939, days before the outbreak of war. It was evident that technical high schools did not meet the Board's criteria for introducing "greater variety" to the secondary

curriculum. Instead, the Board decided to press ahead

with the 'grading' of secondary schools, a plan which

had been discussed internally while the Consultative

Committee was preparing its Report. Under this scheme,

some secondary schools would continueto provide academic

courses for pupils up to the age of 18. But the needs

of the majority would be met by one year post-certificate

courses that included "general" and "special" subjects.[1]

The future of technical education was discussed in

the early months of the war when the Board was advised

to greatly extend "Trade schools as originally intended",

since existing institutions tended to "train only the

cream."[2] Board officials like H.B. Wallis (recently

promoted to head of 'T' Branch) were inclined to agree.

The more education was seen

> "to have a direct bearing on work in after life
> the more popular and efficient it will be .. we
> should look at the educational provision for the
> years .. prior to leaving in relation to the
> occupational objects of the schools and that
> these objects should be defined with reasonable
> clearness.."[3]

G.G. Williams concurred, suggesting that in consequence,

the number of secondary school places might indeed contract.

The secondary curriculum he warned should not be "modified

in the direction of vocational training .. any drastic

change of this kind would be unnecessary and dangerous."[4]

Rather, junior technical education should be expanded.[5]

Only 'E' Branch under the direction of William Cleary

disagreed, on the grounds that "social merging and full

equality of opportunity" called for "a common school for

all post-primary education."[6]

Nonetheless, the pre-employment functions of

junior technical schools continued to determine the

Board's outlook even after the principle of universal secondary education was agreed. It was particularly embarrassed for example when Percival Sharp, (Secretary of the AEC), wrote up an account of a meeting in which he suggested that the Board regarded technical schools as the equivalent of grammar schools. "..This account is his and is not an agreed account," the Chief Inspector forewarned the Inspectorate. The Board's view of secondary technical schools was that they would continue to admit pupils at 13 in preparation for industrial employment without seeking to rival the advanced work of the grammar schools.[7]

The Board had "unburdened itself"[8] of detailed control over the curriculum in the 1920's. The result was a curriculum 'vacuum'[9] at the centre of national educational policy making. The Board was accused of neglecting the practice of education in favour of questions about provision. "Natural curiosity about the essence of education is curiously lacking," complained one observer, "The definition of it is barely attempted, unless by spheres, as that education is tripartite."[10] So it was with junior technical schools. While issues like age of entry were much discussed it was agreed that "curriculum of the present type" was "quite broad enough to meet S. conditions.."[11]

Accordingly, in their dealings with LEAs , members of the Inspectorate were enjoined to promote full-time junior technical courses as a matter of urgency, preferably as 13+ schools, and never as 11+ schools in technical colleges. Industrial and manpower planning

needs took precedence over curriculum policy under secondary conditions. Circular 1639 issued in 1943 remained the model for building courses.[12] Multilateral schools meanwhile were 'not encouraged."[13]

(iii) Discussions at the Board: the Framing of the Education Act.

The 1944 Education Act was the monument to the efforts of wartime educational reconstruction. The most important change ordered by the Act was a universal system of secondary education for all children between the ages of 11 and 15 in separate schools from those in which they had received their primary education. The forms that secondary education should take,therefore,became a matter of great concern.

Clearly, if all children were to receive a secondary education,the dominant academic model would need to be added to by courses relevantto other pupils. It was a matter which demanded early consideration. Secondary education for all implied equality between the 'types' of secondary education proposed. To translate ideals into practice demanded considerable efforts by the Ministry of Education and LEAs, who were responsible for implementing the Act.

The lines along which organizational discussions proceeded were determined between the wars. The tripartite model - grammar, technical and modern schools - owed much to the educational thought of the previous generation, and in particular to the opinions which found a focus in the reports of the Consultative Committee in 1926 (Hadow) and 1938 (Spens).

The academic secondary schools were greatly respected by the Board of Education and in the localities.

They represented the established route by which able
boys and girls   could rise to secure and rewarding
black-coated occupations, teaching and the universities.

They also had their critics. Educationalists who.
looked abroad were struck by the enlarged conceptions of
secondary education which obtained elsewhere. From Hadow
onwards the ideal of the common secondary school as it
had developed in North America and Scotland proved
attractive.[14] The Spens Report was more guarded in its
approval definitely preferring "separate schools of the
existing types". The Report proposed a tripartite post-
primary organization based on grammar schools, technical
high schools and modern schools (senior departments),
and indicated in broad terms the proportion of children
likely to benefit from each of the three types.[15]

Removal to Bournemouth in October 1940 had a
salutary effect on the permanent officials of the Board
of Education. Freed from the minutiae of day to day
administration, and stung by the charge that they had
failed to "..provide direction and planning..," senior
staff engaged in a most intense period of planning for
reconstruction. The 'Green Book' which grew out of their
reflections

> ".. charted the main features of the policies which
> the Ministry of Education was to follow during the
> twenty years following the Education Act of 1944."16

From the Board's point of view it was essential that
reconstruction must not prolong the sterile relationship with
the localities that had typified the inter-war years.
At the same time, the political mood encouraged the
belief that reform must be poor neither in imagination
nor construction.

One of the most internally divisive issues that the
Office Committee faced was secondary organization.[17]
Inter-departmental interest determined the key issues.
On the age of transfer to secondary education, for
instance, Secondary Branch was inclined to favour 13. The
Elementary Branch and the Welsh Department, however, felt
this would create serious difficulties by reversing
existing practices. Technical branch meanwhile was used
to transfer at 13 pointing out that special interests and
aptitudes were more evident at that age. The convenience
of a three year pre-apprenticeship course pointed to the
retention of 13 as the age of transfer. Fearful, however,
that the technical schools would not receive a proportion
of the most able children, 'T' Branch under Wallis proposed
a cumbersome, administratively complex solution with a
break at 11 for a minority of children in each year group
who would go on to 'preparatory schools' before a
further transfer at 13 to grammar and technical schools.
The issue was decided by the Permanent Secretary, Sir
Maurice Holmes. Anxious to proceed with executive
action he decided that 11 should be the age of transfer,
with opportunities for further transfers at 13 to technical
schools.[18]

. Administrative details - age of transfer, selection
accommodation - absorbed the attention of officials. It
was assumed that three physically separate 'types' of
secondary schools would meet the needs of the great majority
of secondary pupils. The bilateralism of Hadow became
the tripartite structure envisaged by Spens and belatedly
accepted by the Board during the early years of the war.
The only dissenters from this view were William Cleary,
and the Elementary Inspectorate who had come to believe

that the common school "was likely to become politically essential."[19] In view of the intense feelings that have been aroused by the question of secondary organization since then, it is of considerable interest that the greatest dissension during the war-time discussions took place within the Board itself.[20]

The matter was examined from the spring of 1942 onwards. The Deputy Secretary R.S. Wood lent his authority to the tripartite scheme. The acceptance of universal secondary education meant that social considerations which had played a part in framing policies before the war were less in evidence. Discussions proceeded from the fact that existing schools would form the backbone of post-war provision, and that multilateral schools (made up of separate streams within a single institution) would be much larger.[21]

The LCC was not as warm in its support of the multilateral school (the policy objective of the majority Labour group since 1935) as its subsequent 'comprehensive school' Development Plan might indicate. Most vocal in favour of multilateralism were the Joint Four Secondary Associations. Most deputations received at the Board were concerned with "the problems of organizing the tripartite arrangement itself.."[22]

Once it was clear that a religious settlement concerning the 'dual system' was at hand (at least with the Church of England) the educational bill was provisionally drafted.[23] Butler had to thank many politicians for their efforts in support of educational reconstruction. They included Anderson, and the Chancellor of the Exchequer, Wood who promised financial backing, as well as Ramsbotham

and Chuter Ede. It was Wood who proposed that a White

Paper should be published and debated "with leave to

print a bill.."[24]

The White Paper appeared in July 1943. It

"marked the point at which the wartime coalition
government publicly adopted what was probably its
most comprehensive single piece of postwar social
policy."[25]

Contemporaries were aware of its significance, and

Butler was widely congratulated both inside and outside

parliament.

The White Paper was cast in general terms but

indicated very clearly the lines along which secondary

education was intended to develop. It explicitly

accepted there would be "grammar, modern and technical

schools," although it was conceded, ".. It would be wrong

to suppose that they will necessarily remain separate and

apart.."[26]

'Hadow' re-organization was a major pre-war

objective but had been far from realised. Only 50% of

children over the age of 11 had been satisfactorily

housed in senior schools or departments before 1939.

Even so, progress was enough to limit conceptions of

secondary organization after the war. A major priority

announced in the White Paper was the equalization of

conditions ".. in the different types of secondary schools."

Reservations were expressed about the traditional

secondary curriculum:

"An academic training is ill-suited for many of the
pupils who find themselves moving along a narrow
path bounded by the School Certificate and
leading into a limited field of opportunity .. too
many of the nation's abler children are attracted
into a type of education which prepares primarily
for the University and for the administrative
and clerical professions."

The technical school was offered as an alternative.

> "too few find their way into schools from which
> the design and craftsmanship sides of industry
> are recruited."

Education must serve "child and nation", a harmony of

interests achieved by

> "directing ability into the field where it will
> find its best realization."

The emphasis on practical education, and the

presumption that the technical schools would remain

free from external examinations, pointed to the need for

separate schools. The sixth form, meanwhile, was

regarded as the preserve of the grammar schools. The

junior technical schools were recommended as a model,

> "with altered conditions and with a more
> rapid development in the future they hold out
> great opportunities for pupils with a practical
> bent."

This conception was unlikely to increase the

esteem of practical education compared to the grammar

school course. It also under-estimated the effects

that a generation's subordination had had on the junior

technical schools.

The third 'type' of school was to grow out of the

experience of re-organized senior ('modern') schools.

Their ethos and likely development was unclear. Their

advent, nonetheless, was attended by considerable

public optimism.

> "Their future is their own to make, and it
> is a future full of promise. They offer a
> general education for life, closely related
> to the interests and the enviroment of the pupils
> and of a wide range embracing the literary as
> well as the practical.."27

Certainly by the late 1950's developments within

the modern schools meant that the 'best' were rivals of

the technical schools in outlook, as well as offering

examination courses.[28] They grew in esteem by leaving

behind the idea of 'general' education.

The laudable hopes for secondary education raised

in the White Paper must be set alongside the conclusions

of the Norwood Report. Both documents appeared

simultaneously, and were clearly intended to be read

in association with each other. The Norwood Report

H.C. Dent declared, "transformed tripartism from a

proposal into a doctrine."[29]

Within its remit of curriculum and examinations,

the Secondary Examinations Council under Norwood was

entitled to refer to more general aspects of education.

Norwood interpreted this to include secondary organization.

The Report itself was slightly documented but highly

influential.

Detailed accounts of the Council's deliberations

are available.[30] In spite of its small size the Council

was asked to consider aspects of educational change

neglected by the Green Book and the White Paper. Its

Secretary, Barrow was supported in this ambition by

Maurice Holmes the Permanent Secretary of the Board.

In other quarters there was considerable dismay

at the prospect. Spens "expressed great alarm" at

Norwood's activities fearful that the curriculum issues

examined by the Consultative Committee would be subjected

to review.[31] Citrine of the TUC, meanwhile, complained

about the selective way in which information was gathered

and demanded the Council should not deal with "the layout

and organization of secondary education" or attempt to

usurp the powers of the Consultative Committee.[32]

There is much of interest between the slim covers of the Norwood Report. The controversy aroused by the proposal to phase out the School Certificate estranged the Examining Bodies from the SSEC for a decade after 1946. At least as important was the authority the Report lent to 'tripartitism' by providing experiential, and apparently psychological bases for this division.

> "The evolution of education has in fact thrown
> up certain groups," the Norwood Report
> concluded, "each of which can and must be
> treated in a way appropriate to itself .. rough
> groupings, whatever may be their ground, have
> in fact established themselves in general
> educational experience, and the recognition of
> such groupings in educational practice has
> been justified both during the period of education
> and in the after-careers of pupils."

These groups, it was asserted, corresponded broadly to those pupils suited to a grammar or academic education - "interested in learning for its own sake;" the technical school pupils whose "interests and abilities lie markedly in the field of applied science or applied art;" and those best suited to a modern school - "The pupil in this group deals more easily with concrete things than with ideas."[33]

Post-primary schooling already evinced the lines of advance in secondary, junior technical and senior schools. Particular affection was accorded to the work of the secondary schools. But they had been asked "to do too much." It had become necessary to meet the demand for universal secondary education by referring to the needs of the three groups of pupils within three types of school.[34]

Issues like selection were not touched on in the Report. It is true it commented on the characteristics of different groups of children drawing on the evidence of contemporary educational psychology. But essentially

the place of experience in determining school organization
was emphasized. It was a vindication of common sense.

Initially, the Report met with favour but soon
generated heated discussion. Understandably perhaps
the Examining Bodies were perturbed. But the TES -
committed to comprehensive schooling in 1945 - led
a violent counter-reaction against Norwood. Professional
feathers were ruffled too, notably those of educational
psychologists who had played little part in the making
of the Report, and in particular those of Cyril Burt.[35]
He was not opposed to selection as such but to the claim
that technical aptitude could be sufficiently determined
at 11 (or even 13) to serve as the basis of allocation.
There is a hint of pique in this reaction. Certainly
other psychologists like Alexander who had conducted
his own research on the question of technical aptitude
was more friendly to the Report's conclusions.[36]
Privately, Alexander acknowledged that Burt and himself
were separated by a division more imaginary than real.[37]

(iv)   The Board of Education, LEAs and Secondary
        Technical Education in Wartime.

The outbreak of war was accompanied by the
dislocation of schooling in the large towns as children
were evacuated to safer areas. The problems facing
junior technical schools were particularly severe. They
were urban schools and therefore cut off from the
equipment of parent colleges. In November 1940 the
number of enrolled pupils stood at 83% of the last
pre-war figure. This was marked by wide regional
differences. London was worst hit; Manchester and
Sheffield least affected. These problems were

exacerbated by the call up of teachers of science and
engineering subjects.

In other ways the war proved a great fillip to
junior technical schools with a renewed justification
of their educational and industrial worth. Agricultural
and engineering schools were set up in response to
wartime conditions and particular importance was accorded
to setting up schools for the building industry.[38]
De La Warr suggested a threefold increase in the number
of building places in view of the likely needs of the
construction industry. Board officials like Wallis
felt that was over-ambitious. Their contribution to the·
war effort was outlined in 1940.[39]

It was the Ministry of Works which persuaded
the Board that new junior technical schools should be
opened, and that building sides should be grafted on to
existing schools. Accordingly, LEAs were encouraged to
set up building schools in the interests of "national
reconstruction". To make the proposition more attractive
the Board emphasized that conditions of employment were
likely to remain stable in peacetime.[40]

Progress was good. More than 3000 places were
added by June 1943. The 'building schools' initiative
was widely spread, and for the benefit of authorities
contemplating junior technical schools for the first
time the Board issued guidelines.[41] 'Emergency' schools
were set up in Brighton, Carlisle, East Ham, Nottingham
and Warrington. West Sussex opened three building schools
and there was even a boarding school in rural Wales
(Montgomeryshire). Undoubtedly this experience inclined
some authorities to a tripartite secondary organization,

using the wartime schools as the basis for secondary
technical education.

The need for 3 year building courses was emphasized
at the British Association meeting in 1942. The following
year the Building Apprenticeship and Training Council
(BATC) was set up with a sub-committee convened to look
at education issues. The Council included representatives
of the industry - like the Federation of Building Trade
Employers; professions - such as the R.I.B.A.; education -
notably the ATI and the APTI; and government departments -
including the Board of Education and the Ministry of Works.[42]

Staffing difficulties were the most acute problem
facing LEAs. The matter was eased somewhat when the
local authorities were empowered to transfer to teaching
well-qualified employees in building and allied trades.[43]
The categories were enlarged to include professional
engineers and others later in the same year.[44]

Steps were also taken to stimulate applications from
pupils. A training film was produced by the Ministry of
Information in conjunction with the BATC.[45] The annual
intake to building courses rose from a bare 300 in 1942
to 4,400 in 1943 and 6000 in 1944, making a total of some
10,000 pupils in more than 130 centres in England and
Wales.[46] This exacerbated the already difficult
staffing position which LEAs were encouraged to overcome
by using the registers of Government Training Centres
controlled by the Ministry of Labour.[47]

Personnel shortages were a feature of several key
technical specialisms in wartime, radar and wireless
technology for instance. It is a matter of conjecture
how far the drafting powers outlined by the Board were

ever employed. The highly qualified graduates well-represented on the staff of pre-war technical schools were in great demand elsewhere.

(v) Technical Education and the Labour Market:
      Wartime Developments.

By 1939 there were few signs of interest by employers in education or training for their workforce despite the Board's hope that engineering employers might be prepared to frame demands of the education service.[48] Once hostilities commenced a few firms turned their attention to the potential training facilities of the technical colleges. By this time the Board had lost its enthusiasm. College facilities were increasingly being given over to military purposes. For its part, the Board was opposed, in principle, to colleges being used as places of special training rather than of craft instruction.[49] Skilled training schemes were put in hand - the conversion of machinists and fitters into toolmakers for example - but the response from industry was disappointing.[50] Skilled labour could still be recruited from among the unemployed, and firms were prepared to offer high wages and train workers on the job.[51] The global problem remained -

> "neither industry nor commerce are found to
> exist as some corporate entities with which
> the education service can establish relations."[52]

The advice the Board received when it approached industries was often contradictory and confusing. Major sectors of industries like engineering were without national education and training programmes.[53]

In the event, the Board was obliged to work closely with the Ministry of Labour which was anxious to direct

secondary school leavers into the engineering industry,[54] and with the newly created Ministry of Works and Buildings concerned primarily with education for the building industry.[55]

These partnerships were the subject of misunderstandings and clashes of emphases. As late as 1944 Dalton at the Board of Trade noted that he would try to ensure that "industry play its part"[56] in the post-war development of technical education. But the Board of Education failed to negotiate effectively with other government departments or with industry.

Indeed, government departments and representatives of industry were deadlocked over policy. The Engineering Employers Federation (EEF) opposed the scheme advanced by the Ministry of Labour to secure preferential training in engineering for secondary school leavers. The Board meanwhile was also "against" placing pupils. The idea, despite support from the British Electrical Manufacturers Association and the British Engineering Association, was abandoned.[57] The Board's main interest was in promoting junior and senior courses of the traditional kind.[58]

The Board viewed with distaste the intervention of its own officers in the labour market. In particular, the Board was opposed to the compulsory direction of "juvenile labour".[59] Voluntary preparation for employment of the type offered in junior technical schools was the Board's preferred solution. It was admitted that their character was "not generally understood," and there were confusions among employers who understood that the

choice was between vocational and general education in elementary schools.[60] The Ministry of Labour, meanwhile, continued its policy of training for industry to the extent of encouraging local initiatives.[61]

By this time groups of employers in well organized and technological industries had taken up the question of recruitment and training on their own account. The Telecommunication Engineering and Manufacturing Association, for example, was set up with the object of promoting national educational planning for the industry.[62] This was welcomed by the Ministry of Labour where it was seen as an advance on the outlook of the EEF.[63] Furthermore, the Ministry felt that the Education Bill presented a great opportunity to interest both sides of industry in questions of education and training.[64]

The Board, however, remained reluctant to deal so directly with the labour market and preferred to stress the probable expansion of junior technical education after the war. Secondary technical schools it was argued would have better contacts with industry than their predecessors since they would have their own governing bodies.[65] At any rate, replies from the Joint Organizations in selected industries showed an encouraging response by employers to day release.[66] There was some confusion though about the Board's policy on junior technical schools. A strictly instrumental interpretation of their role was not favoured although it was granted that "approved whole time practical and technical instruction" might be set against the period of apprenticeship.[67]

Only in the case of junior technical schools for

the building industry - calculated to play an important

part in post-war reconstruction - was the Board shaken

from its misgivings about direct association with

manpower planning for industry[68] by the policies of the •

Ministry of Works. Undoubtedly this was because the

demand had emanateddirectly from among leading employers

associations within the industry.[69]

The Inspectorate were enthusiastic where the

professional officers were compromised. Not only

was the building industry crucial to the reconstruction

effort, it was important to pre-empt moves by the Ministry

of Labour to impose Government Training Centres on any

scheme of education for the building industry. The

Inspectorate urged the Board to try and ensure the early

demobilization of skilled building workers, and to approach

the Ministry of Works at the earliest opportunity to

attempt to link up reconstruction proposals.

> "Thus .. we ought to be able to draw attention to
> the value of the Junior Technical Schools in this
> field and suggest that, with the proposed increase
> in the number of these schools, some should be
> devoted to Building."[70]

The disagreement continued as the Board opposed

the special training schemes advanced by the Ministry of

Labour.[71] The Board looked to the building industry for

allies with Manson (an HMI) insisting that in matters

of education and training "the industry wishes to look

to us for help rather than to any other department or

body." He conceded, however, that the Board's indirect

contact proved a handicap. Manson called for the

establishment of "small non-statutory advisory bodies in

connection with the major industries" in order to rival

the "direct and intimate" contacts enjoyed by the

Ministry of Labour.[72]

The Board sided with the Minstry of Works to advance the case of junior technical schools for Building above special courses. It worked with the Central Council for Works and Buildings. The Council, directed by Hugh Beaver, included educational issues within its province, and was accountable to Reith's Ministry.[73] The Parliamentary Secretary, George Hicks, was regarded as an ally, and members of the Council's sub-committee on education encouraged the Board to retain its hold on preparatory courses against the Ministry of Labour.[74] Wallis however did not believe it was the Board's place to train "rank and file" workers - proper subjects for the Ministry of Labour's special schemes.[75] This meant that junior technical schools would remain as pre-apprenticeship institutions.[76]

The Board's decision to expand junior full-time building courses arose directly from the encouragement of the Education Sub-Committee of the Central Council for Works and Buildings. It was envisaged that 10,000 boys would be sent into the industry each year.[77] They were planned as pre-apprenticeship schools much like their inter-war predecessors.[78] They were not technical high schools. Their development soon became a major objective, and the Board made some efforts to find and train suitable teachers.[79] Despite its earlier misgivings about involvement with manpower planning steps were taken to interest LEAs in suitable building projects on which boys could exercise their new skills,[80] and to make provision for the building schools in their Development Plans.[81]

In the event both sides of industry began to define educational needs without the assistance of the Board acting under the stimulus of wartime pressures. On occasion both sides were brought together to jointly consider post-war requirements. Leading employers agreed at a Nuffield College invitation conference that they should collectively look at productivity before labour costs, a welcome departure from earlier practice. This type of examination was also carried out within industry and by training bodies which specifically noted the possible contribution of technical and commercial secondary schools to the skilled labour requirements of industry.[82]

The statement on 'Education and Industry' agreed at Nuffield College was "widely signed .. embodying very advanced views."[83] Although industrialists were not well represented in numbers they included leading figures like Sir Harold Hartley. Butler himself was particularly struck by the agreement that "quality labour" was preferable to "cheap labour".[84]

The Nuffield Committee was concerned, inter alia, with the junior technical schools and their place in the post-war scheme of education. Graham Savage commended the "really liberal" work of the engineering schools but was content that as a group they should continue "to produce craftsmen." Paley Yorke protested however that such a view of their functions would alienate parents - "condemn a boy to artisanship" - and unions - "designed to provide cheap labour for employers." Employers themselves he admitted often saw the schools in this light and he criticised them for their view that the schools

were "training all boys to be works managers." G.D.H. Cole put forward the need for junior technical schools to be included within the multilateral school, an early argument for the 'school base'. Hartley interestingly expressed concern at overly vocational education in schools but commended "a general outlook .. on the lines of the junior technical school."[85]

The "liberal - technological" views found expression in the conference statement. It was reasoned that in future overseas competition would oblige employers to consider ways of improving labour productivity. This did not call for "specific vocational preparation" in schools. It could be assisted by the "very great development" of technical schools which offered "a wide instruction in mathematics and basic science" alongside "general and social subjects' without teaching technique of any kind. It was essential to make use of education "to raise the prestige of high manual skill."[86] Thus, the pre-apprenticeship character of the schools would be preserved and extended. As such, the proposals fell short of the recommendations of the Spens Report but were an accurate characterization of how the secondary technical schools came to be seen by employers after 1945. ".. Early specialization" was condemned by individuals on behalf of industry and the professions, a view which sometimes coincided with criticism of the secondary technical schools as an instrument of vocational training.[87]

The FBI sponsored its own discussions in view of the impending Education Bill. The outcome was a great

deal more positive than it had been in 1918.[88]   The

Federation's Education Committee delineated its task as

concerned with "the education of those who would occupy

managerial, administrative and technical positions in

industry," leaving issues of rank and file education to

the British Employers' Federation.[89]   Tradition was

mixed with a desire for reconstruction.   The Committee

was anxious to preserve the public schools and the often

intensely vocational junior art departments.   But concern

was also expressed about the adequacy of the supply of

technical teachers, and a general fear that there was a

"potential shortage of qualified personnel particularly

those of degree standard."[90]

Secondary technical education and the content of

secondary courses were examined in the context of industrial

recruitment.   The difficulty of establishing technical

schools combining a "sound general education" for major

industries other than engineering was placed before the

committee by representatives of education.   Charles

Tennyson, a leading member, regarded the stratification

of secondary schools as closely conforming with the

occupational destiny of pupils, so that boys from a

technical school would "go on to the productive side of

industry" while boys from grammar schools "would tend to

enter a profession."   For production workers he favoured

"a sound grounding in fundamental principles" above

specialised knowledge, insisting that "the power of

expression was of the utmost importance."[91]

The Federation's statement closely reflected these

arguments balancing educational needs with industrial

requirements. It was cast, however, in extremely
general terms. Prejudice against the elementary schools
was mixed with qualified support for grammar and technical
schools. Selection between institutions was to be on
grounds of "natural aptitude". The new secondary schools
above all had to teach pupils to "read, write and speak
clearly."[92] Limited ambitions, yet clearly an advance
on its views on education between the wars.

By far the most enthusiastic wartime discussions
of educational reconstruction from within industry emanated
from the TUC.[93] The Congress endorsed multilateral
secondary schools on both educational and social grounds,
fearful that specialized training might replace "cultural
education."[94] Junior technical schools, however,
so long as they were not restricted to a particular
trade were looked upon favourably as a means of introducing
variety into the secondary curriculum. Locally they were
often regarded as alternatives to secondary schools and
agreements were negotiated whereby attendance was counted
in full towards the period of apprenticeship. These
local views were given general expression by the TUC which
traditionally had been intensely concerned with social
questions, including education. Its influence reached
a peak during the Second World War as union leaders like
Bevin (an ardent supporter of vocational training) were
drawn into government, playing an active part in the
discussions leading up to the Education Bill.[95]

(vi)   The Political Parties and Technical Education.

Renewed political interest in technical
education, first expressed during the 1930's, was extended
during the war, in the light of the scientific contribution

to the war effort, and as it became clear that
educational reform would be a central issue of reconstruction.

In the Commons, old formulations of technical
education as a valuable national investment or the need
to train young workers, were widened by concerns about
the expansion of the secondary curriculum. The exigencies
of wartime, meanwhile, had meant a considerable growth
of interest in the expansion of junior technical education,
notably by R.A. Butler,[96] whose concern was mirrored in
all political parties.

The Conservatives had set up a Sub-Committee on
Educational Reconstruction. Notwithstanding criticism
from the left and within the party,[97] the Sub-Committee
submitted its reports to the Board as a contribution to
the 'Green Book' discussions. There was no disagreement,
however, over the proposal for the "extension of junior
technical education" as an "immediate and urgent need."
This represented an interest in "practical" education for
children about to enter the new secondary schools.[98]
This was in full accord with the hopes of Butler and his
advisors,[99] and was echoed enthusiastically in the party.[100]

Labour views were characterized by the continuing
belief that schools should include 'practical' studies
to meet the variety of interests among children, with
a growing support for some sort of common school.[101]
Vocational training however was totally rejected.

But concerns about Britain's post-war position were
reflected in demands for the improvement of skills among
the workforce to meet the demands of international
competition. This was advanced most influentially by
Ernest Bevin from the Ministry of Labour where he took a

considerable personal interest in educational reconstruction,[102] especially opportunities for training.[103] His preferences for "practical" education along the lines of the junior technical schools were well known to the Board[104] as the first stage in a highly organized programme of manpower planning among young workers.[105]

(vii)   Conclusion

The knowledge that educational reconstruction was to be a central plank in social reform, as well as the renewed interest in scientific applications and manpower planning had important consequences for technical education, including vocational education in schools.

Reconstruction enjoined secondary technical education which represented a change of policy by the Board of Education. It had rejected the 'Technical High Schools' only to find that the principle had to be revived and made relevant (chiefly by removal from the technical colleges) to post-war expectations. In fact, most wartime tendencies had served to emphasize instrumental values in technical education. The Ministry of Education pinned its hopes on the 'common sense' administrative symmetry of the tripartite system.

> "We have in fact taken a considerable plunge
> in the dark," confessed R.S. Wood, "We have
> talked of all children having a secondary
> education - it might have been better to
> call it post-primary - without being at all
> clear what education we could best give them."[106]

By the end of the war, public optimism about education reconstruction concealed the problems of turning central policies around. The junior technical schools had enhanced their standing during the war. They had responded quickly to the demand for skilled entrants to

the construction industry. The secondary technical schools appeared to be set fair to build on the success of their predecessors, with support from industry and political backing. The fact was that the advent of universal secondary education was accompanied by the accretion of problems from the past which were not to be easily disposed.

Conflicting interpretations of vocationalism remained. Acceptance of educational justifications was impeded by the success of instrumental policies. The recommendations of the Spens Report had been in abeyance for most of the war. The Board continued to stress instrumental views of vocationalism. Wartime pressures reinforced this outlook as the Board was drawn in to discussions of manpower planning with other 'training' departments of state.

This mood also found expression within industry. Enlightened employers began to take a greater interest in education for employment, especially scientific and technical education, and day release. Though conditioned by industrial objectives their outlook was scarcely more heartening. Differences of opinion about which pupils should take technical courses was accompanied by the strong suspicion that practical education would mean poorer 'general' education.

The result was that 'education' was hurriedly 'added on' to the junior technical schools, destined to become the third leg of the tripartite system. So it was that at a time of apparent opportunity the educational context of practical secondary education remained ill-developed. Problems of 'esteem', meanwhile, had been

partly submerged with the hope that universal secondary
education would overcome differences in status between
institutions.   The technical schools were not to
recover from these beginnings.

CHAPTER 6

Policies for Secondary Technical Education: Central Viewpoints, 1944-65.

(i) Introduction.

The secondary technical schools were eclipsed before 1965. Paradoxically, the period after 1945 witnessed the growing conviction, publicly expressed, that national regeneration was linked to the application of science and technology. This chapter contains a discussion of some of the influences at the centre which ensured the secondary technical schools would not prosper.

(ii) National Bearings.

'Science' and 'technology' became major political issues after 1945. The result was to draw the issue of trained manpower into the heart of political debate.[1]

The period opened with two influential reports both of which expressed disquiet at the nation's manpower deficiencies. The Percy Report (1945) was the charter for the development of the technical colleges, although its recommendations were not accepted until the White Paper on Technical Education (1956). The Report also singled out the secondary technical schools as an important future source of skilled manpower.[2] The Barlow Report (1946), meanwhile, set the urgent tone of the discussions with the claim that Britain needed "to double the present output" of scientists in the succeeding decade in order to meet changing circumstances.[3]

Political initiatives followed. The National Advisory Council for Education in Industry and Commerce (NACEIC) was set up in June 1948, with the intention of

advising on all aspects of the problem.[4] Its principal

interest was in the development of the technical colleges.[5]

This was in sharp contrast to the prestigious Advisory

Council on Scientific Policy (ACSP) which argued that

technological education should be developed in the

universities.[6] In the event, the government favoured

the ACSP during the first half of the 1950's.[7]

These discussions came to be reflected with growing

interest in the educational world. Educational goals,

it was said, were sensitive to world events and of greatest

moment was the Soviet Union's entry into space technology.

Britain's reply had to start in the educational system

and technical schools were canvassed as potential sources

of skilled manpower,[8] including science teachers. In

many cases, however, they were prevented from responding

to these needs because they had stood apart from external

examinations.[9]

The 1956 White Paper on Technical Education was

of signal importance for the growth of advanced technological

education. It also made reference to the secondary

technical schools and re-iterated the policy announced

by Eccles the previous year in which the principle

of selection was defended but tripartitism was abandoned.

It marked the end of any official solicitation for

the secondary technical schools. Eccles looked forward

to a more general association of secondary schools with

technical colleges. He did not differentiate between

grammar and technical schools and paid special tribute

to the modern schools.[10]

By the early 1960's, there were some grounds for

optimism that the efforts of the preceding decade had

met with a measure of success. The expansion of advanced work in universities and colleges, the growth of science in sixth-forms, and the growing contribution of modern schools had all helped to meet the national demand for scientifically trained personnel. The most important gaps were the continuing difficulty in attracting sufficient numbers of scientists into teaching, and the post-compulsory training of young people through day-release.

These were crucial years for secondary technical education. In what respects had national policies - educational, political, manpower planning - taken account of the schools?

(iii) The Ministry of Education and Secondary Technical Education 1944-65.

(a) Public Pronouncements 1945-51.

The Ministry of Education's policies for secondary organization between 1944-65 were largely determined by the assumptions made in the 1944 Education Act. It was supposed that most authorities would provide for the education of children from the age of 11 in separate schools for which they had been selected. There was the belief that in this way technical education would have a recognized place in the secondary schools.

This raised many issues, including the incorporation of junior technical schools into the system of secondary education, selection for technical education, cost, and technical education for girls.

The Ministry issued official notes and memoranda which mixed detailed and practical advice with guidelines

for development.

'The Nation's Schools', (1945) was released under
the outgoing Conservative government. While it
summarised Ministry and Conservative policies, it was
greeted by a storm of protest at the Labour Party
Conference, and by members of the parliamentary Labour
Party. The situation was considerably exacerbated by
the refusal of the incoming minister Ellen Wilkinson to
denounce its contents. Indeed, some suspected it had
originated with the minister herself.

'The Nation's Schools' argued that organic growth
and administrative response had already given rise to
a system of secondary education which had "developed a
variety of species .. represented by the senior or modern
school, the technical school and the grammar school."
The implication was the these 'types' should form the
basis of future expansion, but that grammar school
places might in fact be reduced "without prejudicing
recruitment to the careers for which it gives the most
suitable preparation," a policy which dated back to the
early 1930s . This·left technical and modern school
places as the priority for expansion. Skirting the
problem of selection, it was maintained that the
technical school would be the equal of its grammar
school counterparts, serving the technical professions
just as the grammar schools served the blackcoated
professions.[11]

Soon after, 'A Guide to the Educational System
of England and Wales', (1945), restated the origins of
secondary types. It was conceded however that the

"three types .. will not necessarily be provided in separate schools."[12] However, immediate needs for modern and technical places, and existing school buildings made separate schools the most favoured solution. This was confirmed by the need for the "proper classification" of pupils. Not least, the putative size of multilateral schools did not "justify a general reversal of present practice."[13]

The educational justification for restricting technical education to only a proportion of the secondary age group was never properly formulated. Selection was a guide which on occasion appealed to intelligence grouping and at other times to special aptitudes. The Ministry insisted on

> "the necessity for clearly defined and adequately developed courses of different kinds .. to meet the special interests and abilities of different groups of pupils."

The confusion surrounding selection for technical education was compounded by the related consideration - for which group of pupils was vocationalism intended? Were the schools to produce future managerial and supervisory workers; development scientists or skilled craftsmen. The advice that secondary technical education should be "based and built around the needs of a particular group of occupations"[14] did not take local authorities far. In practice, general intelligence rather than aptitude was the usual basis of selection for technical education. Except for certain local well-established schools, or where the proportion of selective places was low, technical schools received pupils on the grammar-modern divide. This was compounded by sentiment, which deemed that technical ability was unequally distributed

by gender. Boys possessed a greater measure of technical aptitude as a group, and this was reflected in their greater chances of attending a technical school.

'Tripartitism' was the touchstone of secondary organization at the Ministry of Education in the years immediately after the war. It was held that it was "not possible to deal intelligently with the organization of secondary education without reference to the three broad groups." This was complicated, however, since each group was held to comprise "a range of ability and aptitude which should be catered for by a variety of courses within each group,"[15] a fudge of the notion of a simple three tier system of secondary schooling.

In the light of this ambiguous advice the message, at least, was clear. The Ministry was determined to create a tripartite secondary structure. This pressure was maintained on local authorities until about 1948, "by which time separate .. schools were no longer being pressed quite so strongly."[16]

Technical schools called for special attention by LEAs because they were relatively new, sometimes unknown, and expensive to provide. The cost per place was higher than for grammar or modern schools. The Norfolk LEA estimated that building and equipment in grammar and modern schools cost £275 per place compared to £430 for technical schools.[17] The specialist equipment and staff required, meant that the Ministry looked most closely at proposals for grammar-technical or technical-modern schools. Separation was the preferred solution. Technical streams in grammar schools were particularly suspect, ostensibly on grounds of

accommodation - "the mere addition of one or more practical rooms are not likely to be approved."[18]   But exclusivity and maintaining the purity of the grammar curriculum were as important in the 1940s.

The size of schools was a decisive influence over secondary planning. Experience was contrary to the multilateral principle. The Ministry expressed concern at the prospect of large schools and those authorities that could not comply with the Ministry's interpretation of multilateral schools, or who insisted on comprehensive schools, had the greatest difficulty in obtaining approval for their plans. Another difficulty placed in the path of unitary or bilateral schools was the insistence that two streams of each educational 'type' was a minimum requirement. Even technical sides based around a single industry should be planned in this way. Boys and girls moreover would require separate streams.[19]

George Tomlinson announced that he intended to continue Ellen Wilkinson's policies.[20]   'The New Secondary Education' (1947) was a restatement of the tripartite doctrine, though pains were taken to emphasize the shared features all secondary schools -- a common code, equality of provision and parity of esteem. The contradictions of selection for technical education, however, were unresolved. Practice already pointed to the fact that pupils were drawn very largely from children who had most narrowly failed to reach the grammar schools. This was ignored. The Ministry continued to press for admission at 11 on grounds of technical aptitude, augmented by a system of transfers at 13 for

those wrongly placed. Facing both ways, the Ministry announced that technical school pupils would be "very able boys and girls for whom the grammar school course will not provide the opportunity for full development." It was conceded, however, that the essential condition of entry was not high general intelligence, "though this must count," so much as "the natural bent of their minds and their outlook."[21]

Tomlinson's support for separate schools was brought to a head by his rejection of the Middlesex Development Plan, on the grounds that it was based on the adoption of small comprehensive schools. In a crisp letter to the LEA   Tomlinson read the lessons of secondary planning:

> "there are broad groups of children who can suitably be handled together, and who, as between group and group, would be likely to be suited by different forms and standards of even a general education. The logical and usual expression of this is in the system of separate schools for groups of children who are broadly classifiable as different from each other."[22]

(b)   Internal Doubts.

The tripartite system remained policy at the Ministry of Education until 1955, when it was abandoned in favour of a twofold division between selective and unselective secondary schools. A decade later Circular 10/65 announced the policy of comprehensive re-organization. The distinctive place of the technical schools therefore became increasingly precarious. It was in their interests that the tripartite plan had been conceived.

But the educational basis of separate schools was conceded to be faulty in the face of research into selection, as well as demands from the local authorities for greater flexibility in school organization.

Edward Boyle, the Parliamentary Secretary, dismissed
the 'Christianised Platonism' of the Norwood Report
as "Mysticism."[23.] By 1960 the Ministry admitted that
the "only serious future" for secondary technical
schools was as "an alternative form of grammar school."[24]
In its secondary organization, Scotland had demonstrated
a marked preference for multilateral schools, especially
in rural areas. Wales, though administratively linked
to England, was scarcely more friendly to separate technical
schools. From early times the Central Advisory Council
for Education (Wales) wanted technical education to be
incorporated in multilateral or bilateral schools. It
explicitly rejected the junior technical school traditions[25]
which were regarded as "fundamentally illiberal."[26]

The secondary policy favoured by the Ministry was
optimistic, but frequently unclear and imprecise
regarding both modern, but especially technical schools.
At bottom, secondary policy on school organization was
well-intentioned but confused, instinctive and conservative.

> "We have in fact, "admitted R.S. Wood, "taken
> a considerable plunge a little bit in the dark.
> We have talked of all children having a secondary
> education - it might have been better to call
> it post-primary - without being at all clear
> what education we could best give them."

Wood admitted that technical schools might prove
to be an

> "undistributed middle, that might be distributed
> sometimes as a technological side to the 'Grammar'
> school and sometimes as the advanced top of a
> 'Modern' school,"

a prescient summary of the positions of many local
authorities a decade later. "I suspect," he continued
'that the gap between 'Grammar' and 'Technical' may be
considerably wider than that between 'Technical' and 'Modern'."[27]

Again, he rightly predicted the attitude of a majority of
local authorities in their Development Plans, although
the Ministry and the AHSTS always - for reasons of status
or to improve the national percentage of selective
places -   regarded them as selective schools, on
a par with grammar schools.

At any rate, the meaning of secondary technical
education was unclear. The Ministry itself had "very little
experience" of this type of education, while most
existing courses operated "under extremely difficult
conditions."[28] Even so, the Minstry was obliged to
disburse authoritative views about secondary technical
schools.

A.A. Part, Private Secretary to Ellen Wilkinson
was extremely active in trying to formulate a coherent
picture of the best practices in technical schools, in
order to lend credence to national policy. It was
important, Part maintained, to publicize the fact that
they were not vocational trade schools, and, if possible
to point to the success of former pupils.[29] The
Inspectorate could furnish few examples. R.A.R. Tricker
confessed that his personal knowledge was "extremely
rudimentary", and that schools in his own district
(Loughborough College School and Gateway) were both
atypical of junior technical schools. He added, moreover,
that parents' qualms were not "without foundation" and
not to be allayed by "quotable examples."[30] Other
Inspectors doubted in any case whether the success of
pupils from particular schools could be attributed to their
technical orientation since "all schools have to consider

their pupils' future lives."[31]

The Inspectorate was doubtful, meanwhile, whether the curriculum of many technical schools could yet be distinguished as secondary, though there were numerous examples of pupils who had gone on to academic and professional distinction.[32] As for girls', there were few examples of genuinely secondary technical education.[33] Its future was "much less clear" but at least would apply to a smaller proportion of each year group than boys,[34] so that schools need only be established in the largest towns.[35] Two points at least were agreed. The schools must leave the technical colleges for their own premises under the direction of a headteacher,[36] deficiencies much commented on in the past.[37] But selection remained a problem and was never satisfactorily resolved in favour of technical education,[38] becoming a liability to those who spoke for curriculum development in secondary technical schools.[39]

This unhappy picture inevitably affected the vigour with which the schools were publicized. To some extent, difficulties were concealed behind the facade of tripartitism. There were those who continued to think in terms of the old stereotypes. Sir Griffith Williams, a former Deputy Secretary continued to defend the "well composed" Norwood Report as late as 1955.[40] But the Ministry's public optimism was countenanced by private doubt. Hardman the Parliamentary Secretary informed the Minister of the "generally accepted suggestion" within the parliamentary Labour Party,

> "that we were not sure where we were going in our new conception of secondary education for the majority of our children."[41]

More damning still were the views of professional administrators. The Inspectorate were counselled by 1951 that the serious objections voiced by LEAs to the Ministry's secondary policy would have to be met extemporarily. It was admitted that methods of selection had not shown that "special abilities" could be assessed at 13 any more than at 11. Organization therefore could no longer be rigidly separated by type of school. There were other issues which clouded the development of technical schools including the high cost of places, the uncertain impact of external examinations, the problems of developing sixth forms, and the continuing association of the schools with technical colleges.[42] In short, it was admitted that their position remained as uncomfortable and ambiguous as ever, yet the public direction of Ministerial policy was unaltered.

This review summarised effectively the attempts by the Ministry to pin down the essence of secondary technical education for the guidance of LEAs since the publication of 'The Nation's Schools.' The deliberations had proved inconclusive, except for the determination to maintain the policy of separate secondary schools.[43] Of the issues under discussion, 11 was agreed to be the age for admission to technical schools, but most other questions - courses, technical education for girls, equipment, the place of the junior art departments remained indefinite. The challenge of Barlow still clearly required "a good deal of working out."[44] In the event it was decided that the draft pamphlet on secondary technical schools could not be published.

But the Ministry continued to actively promote
technical schools among the   LEA·s. Its own
confusion was reflected in the range of local options
regarding secondary technical education in the Development
Plans. Observers became critical of the Ministry's
emphasis on secondary technical education demanding an
explanation of the differences between technical and
modern education and of the meaning of "practical bias",
"vocational", "pre-vocational" and "technical secondary"
when applied to the secondary curriculum. The Ministry,
it was said, could not state "what is meant by a
technical secondary school."[45]

(iv)   Political Parties and Secondary Education, 1944-1965.

Secondary school organization became a live
political issue with important consequences for secondary
technical education.Ministerial policies were increasingly
framed with reference to party views. This was partly
because between 1955-65, a succession of Ministers were
closely interested in the details of secondary schooling
working with their advisors, and the local authorities.

Between 1945-50, there was a considerable measure
of parliamentary political agreement over education,
especially the need to make universal secondary education
a reality.[46] It collapsed as divisions over the merits
of selective education and the pace of reform emerged.[47]

Technical education meanwhile was accorded priority
across the political spectrum. It could only be built
upon sound secondary foundations in which technical
education itself was accepted and represented.[48] This
awareness even led some politicians to denounce their own

classical education.[49]

Yet the precise form in which secondary technical education would be established became part of the political battleground. Locally, technical 'streams' in larger institutions drew fire from many directions,[50] including the Ministry. In turn, some members of the Labour Party regarded multilateral schools as a step towards the comprehensive ideal.[51]

It remains to say something about the evolution of party political opinion and its effects at the Ministry of Education in these years.

(a) The Labour Party.

The Labour Party took office in 1945 with an outward commitment to the 'comprehensive' secondary school. It was also committed to the development of science and technology. The comprehensive issue conditioned all party discussions on the form and purposes of secondary education. The other linked Britain's economic competitiveness with the application of science and technology to industry. This was intimately related to the educational system where the "profound reshaping"[52] of manpower requirements would be effected. For these reasons practical secondary education was greeted with enthusiasm, while the secondary technical school generated less support as an element of the tripartite system.

Party opinions about technical schools were divided usually between educationalists with Labour sympathies (who are disproportionately represented in the literature), and those whose outlook was conditioned by secondary organization as they found it. These

tensions determined internal party discussions at least
until 1955 when the Parliamentary party formally
accepted the Conference decisions on comprehensive schools.[53]

As Ministers, both Ellen Wilkinson and George
Tomlinson supported the tripartite system, a stand
which brought them into sharp conflict with party members
both in and out of parliament.[54]   In this policy they
were strongly influenced by the advice of their civil
servants[55] whose policy "was one of caution."[56]   A.A. Part,
in particular, was a considerable influence on Ellen
Wilkinson.[57]   He was committed to separate schools, and
in particular the establishment of technical schools.
Like many self-made Labour politicians both Ministers
were warm supporters of the grammar schools.[58]

The most vocal opposition to Ministerial policy
came from the small but influential National Association
of Labour Teachers (NALT) which complained that "there
was no sign of a socialist policy dictating the course
of action."[59]   This stricture followed a general criticism
of the parliamentary party's lack of enthusiasm for
comprehensive schools, and a bitter personal attack on
Tomlinson's record on the matter.[60]   The cause of this
outburst was Tomlinson's intransigence in the face of
Conference demands, and his curt rejection of the
comprehensive schools proposed by the Middlesex LEA in
its original Development Plan.   Tomlinson's estrangement
from party policy was complete after the publication and
endorsement of 'A Policy for Secondary Education.'   It
had been slipped through the 1950 Conference according
to one critic, "by a small group of enthusiasts."[61]

With a pungent flourish, Tomlinson warned that "the party are kidding themselves if they think that the Comprehensive school idea has any appeal."[62]

Within the parliamentary party, technical education was keenly discussed, and linked to economic performance. The junior technical schools were the subject of praise and solicitation. Their functions were variously regarded. In some quarters the vocational training they had provided was especially commended.[63] The utilitarian conception of technical school education was complemented by reference to its educational justifications. But concerns about early segregation raised doubts about the suitability of even the best junior technical schools as models for the future. 'Double Bias' schools were favoured, and attention drawn to local experiments,[64] and for the need for grammar schools to reflect technical subjects in their curricula.[65]

Once it became clear that technical schools were not popular with local authorities, the parliamentary party shifted its attention to the provision of technical education in grammar, modern and comprehensive schools.[66]

Comprehensive schools were largely unknown before the 1950's. But ideas about what they should - or should not - be were current in the 1940's and influenced conceptions about secondary technical education in the Labour party.

Ellen Wilkinson was convinced that "secondary education for all does not and should not mean grammar school education for all."[67] This was a reaction against those in her party who saw the comprehensive school in those terms. Her own preference was for a bipartite system of secondary education in grammar and technical schools,

while she expressed grave reservations about the vocational interpretations of modern schools she encountered at the Ministry. She acquiesced to "three types" once she was satisfied that opportunities would not be closed to. the modern school pupil.[68] Nonetheless deep confusions are evident as she grappled with her parliamentary aides to come to terms with the concept of a non-academic secondary modern course.[69] They employed the catchwords of progressive educational thought without an understanding of classroom practice.

After her attempt to break free from her advisors, Ellen Wilkinson returned to the safety and order of tripartitism. Equality of opportunity through separate schools became her ambition. She was anxious therefore to promote technical schools as alternatives to grammar schools by emphasizing their educational nature and the success of their pupils.[70]

But party members were among those who were unconvinced by the procedures for selection at 11, and saw in this early segregation a secondary school system which mirrored the occupational destiny of school leavers. Under the tripartite system the grammar school continued to enjoy superiority over other secondary schools. The solution was the establishment of comprehensive schools. This "social equality"[71] view of comprehensive education was increasingly typical of the party as a whole, and was argued most elegantly by Anthony Crosland.

But 'comprehensive' education meant a number of things to party members. If some, like Ralph Morley (sponsored by the NUT) was clear it did not mean grammar /were

school education for all,[72] Gaitskell as late as 1958 rather ambiguously seemed to suggest that it did.[73]

The dominant view among Party 'experts' was that the number of grammar places could be greatly increased.[74] This could be achieved through the comprehensive - grammar school which was "a microcosm of the classless society."[75] It would also promote scientific and technical education. During the war there had been some concern that exigencies might distort secondary technical education into vocational preparation. As this fear subsided technical education was taken up with enthusiasm as a means of bringing reality and diversity to the curriculum, especially with pupils remaining at school to 15. "A great extension of rooms and workshops for technical education is necessary in schools," declared the NALT, so long as this was not confined to technical high schools.[76] The comprehensive school would ensure that the most able would benefit from technical education, as well as guarding against the possibility of the less able being placed in "shop courses" and "vocational training."[77] As such, technical schools were "a doctrinaire anomaly"[78] which stood in the way of an expansion of technical education under a comprehensive system.[79]

Views within the parliamentary party, and local government, and of teachers working outside the comprehensive schools were distinguished by greater empiricism. Modern school teachers argued that tripartitism would not be overturned for many years. The immediate task therefore was to "make the Secondary Modern school

as good as it can be." It was essential to reject "the
old view that there was something dangerous and illiberal
about technical education," because well-planned courses
provided satisfaction through vocational preparation,
making good use of the extra year at school.[80]

The recognition that a fully comprehensive
system of secondary education was some way off meant that
the grammar schools continued to find favour, not least
since they were "the main existing source of supply"
of scientists and technologists. Some grammar schools,
it was argued, could well be converted to technical schools.[81]
The hasty abolition of grammar and technical schools,
warned some party members, would seriously reduce the
nation's supply of scientists, technicians and engineers,
and increase the dominance of independent schools.[82]

These views found greater support as the decade
advanced. The subject of secondary organization came
to be regarded from the realities of existing provision,
especially the need to provide an adequate education for
pupils in modern schools.[83] Difficulties in the way of
the general establishment of comprehensive schools were
squarely faced,[84] so that the party's major policy
statement 'Learning to Live' (1958) toned down the issue,
by pointing out its long term nature and the need to
respond to local circumstances. It committed the party
to the expansion of scientific and technical education
beginning in all schools.[85] In the meantime, experiments
with bilateral technical-modern and grammar-technical
schools were welcomed.[86]

(b) The Conservative Party.

The Conservative Party emerged from the war with

a public commitment to a "considerable expansion in technical and vocational training,"[87] presenting itself as the defender of the national interest.[88]   The urgent need to develop technical education was contrasted with neglect by the Board of Education.   Even the raising of the school leaving age was seen in vocational terms.[89]

Down to about 1950, although the majority in each major parliamentary party believed in an educational meritocracy based on selection, Conservative attitudes had not yet hardened into the rigidly tripartite ideology they assumed in the early 1950's.   In consequence, concern about the growth, facilities and poor prospects of the technical schools,[90] was tempered by a desire to improve "purposive" education in all schools especially modern schools.[91]   For some, the likely hegemony of the grammar, that is, academic curriculum in the common school, was sufficient reason for separate schools.   Butler himself had welcomed experiments with modern-technical schools.[92]

This many sided approach to secondary technical education was shared by local Conservatives who advised the Parliamentary Education Committee.   In Middlesex, for example, the expansion of secondary technical education took place in grammar and modern schools, thereby retaining the principle of selection.[93]   Selection was a cardinal principle of secondary organization among Conservatives, preferably at 11.   It would not preclude modern schools offering specialized courses to pupils of 13+

The breakdown of inter-party consensus on education

after about 1950 had repercussions for secondary technical
education. Conservative reflexes against comprehensive
education came to be seen as an electoral advantage.
However, during the 1950s, the integrity of separate
secondary technical schools was undermined during
successive Conservative administrations. By 1965,
Circular 10/65 confirmed a process already well-advanced.
The optimism of the Crowther Report which saw a future
for the technical schools as specialist experimental
institutions[94] was overtaken by events.

Policy during the first half of the decade favoured
the technical schools, as Florence Horsbrugh the incoming
Conservative Minister, took up the political challenge
of secondary organization. She declared herself
unambiguously in favour of "the tripartite scheme", which
had to include a credible number of technical schools.[95]
The lines of policy had been indicated in opposition
with the condemnation of multilateral schools which were
regarded as destructive of grammar school standards.
Better modern and technical schools were the real need,
with the latter a priority demanding the "first consideration".[96]
These views were stridently echoed in the party as the
cautious mood of the 1940's gave way to a more hostile
and combative tone.

Conservative teachers, formally represented on the
National Executive during the 1950's, expressed opposition
to multilateral schools. They strongly favoured vocational
preparation, however, declaring that many children in
modern schools derived little benefit from the extra
year "and would be better employed in learning the tools
of their trade."[97] Differences in "capacity" meanwhile

pointed to a rigidly tripartite division and a special

plea was entered for the expansion of secondary

technical education.[98]

These opinions lent support to the continuance of

separate technical schools. But the main concerns were

selective grammar and public schools, a popular issue

among party members. Defence of the grammar schools

was the object of Ministerial policy. Mistakes in

selection, Miss Horsbrugh declared, were preferable to

the widespread adoption of comprehensive schools.[99] Her

defence of separate schools was greeted enthusiastically

within the Party. Friendly educational opinion was

sought, notably that of Dr. Eric James.[100] At times,

the need to maintain separate schools seemed almost to

be a sufficient justification for the inequitable

distribution of selective places.[101] The Party

Conference repeated its belief in selective grammar and

technical schools. The Minister, emboldened by this

support, gave succour to parental groups fighting the

extinction of local grammar schools.[102] As late as

1957, Party opinion was resolutely wedded to the concept

of a tripartite system,[103] which had ceased to conform

to the facts of secondary organization.

But Conservatives held fast to selection. By the

mid-1950's doubts about the "three channel division"[104]

had been replaced by the more general belief in the

desirability of separation of children according to

"aptitudes and abilities, regardless of names and labels."[105]

Under the parliamentary leadership of Eccles, Boyle,

Hailsham and Lloyd this came to be interpreted as a

division between grammar, modern and emerging comprehensive

schools. Eccles was aware that his "ideas about education" would not lessen political controversy since the Party remained committed to selection. But he also emphasized the demands of the "scientific revolution" upon the schools and in particular the need for "technicians and skilled workers." This led him to emphasize the place of "secondary moderns as satisfying alternatives to grammar schools."[106] This was far from being the case, so that modern school re-organization became the principal object of policy later in the decade. Thus, the revival of political interest in scientific and technical education in the second half of the decade did not coincide with a revival in the fortunes of technical schools.

Eccles assumed office in propitious circumstances. He was determined to improve technical education, and effect rural secondary re-organization,[107] a traditional Tory concern. It was in these years that the Party "became converted to the importance of education."[108]

Technical education had become a live political issue by the middle 1950's in response to gloomy predictions about Britain's international competitiveness, and the shock occasioned by advances in Soviet technology. Party leaders including grandees like Salisbury, and Churchill as well as Macmillan and Eden vocalized these fears, committing the government to redress the position.

> "This scientific revolution may be world wide," Eden announced, "but the prizes will not go to the countries with the largest populations. Those with the best systems of education will win."[109]

Eccles had already announced his support for efforts to improve scientific education in

schools, notably by the Industrial Fund. As Minister he
had the backing to create "more scientists and technologists..
by raising the standards for all our children."[110]
This shift of emphasis from questions of 'excellence' and
the place of the 'grammar' schools had been put in train
at the Party Conference of 1955. Eccles rejected calls
for more secondary technical places and stressed the
importance of improved modern schools.[111] This was
echoed by Boyle , who stressed the need to develop
manpower skills "all the way along the line."[112]
This policy had important consequences for the position
of secondary technical schools.

It was clear by 1955 that local preferences were
not in favour of the establishment of secondary technical
schools. Ministers of Education, meanwhile, had begun
to include technical school places in the total number
of selective places in an attempt to improve that
figure.

1955-57 were years of uncertainty for the technical
schools. The shift of emphasis to modern schools was
popular within the Party because it did not disturb the
principle of selection, while making secondary education
for all a reality. The position of secondary technical
schools, Angus Maude argued, was therefore anomalous.
They were an impediment to the development of both
modern and grammar schools, and should be abolished.[113]

Eccles announced the end of tripartitism in April
1955 declaring that he was against "too much" vocational
education. He imposed strict conditions for the approval
of new secondary technical schools.[114] Eccles
announced his "working rules" at the N.U.T. Conference.[115]

He expressed ideas that were developed in the White
Paper on Technical Education (1956). The accent on
secondary technical education was welcomed. Issac Pitman,
for example saw it as a means of reviving the junior
technical curriculum in modern schools.[116] Angus Maude
noted with satisfaction that the White Paper edorsed the
policy that the Middlesex LEA had been working towards
for some time.[117]

The White Paper decreed that technical schools should
become like grammar schools. This view - by no means
original - was popularized[118] for a number of reasons,
Firstly, the move towards science in grammar school
sixth forms was still too slow, and compounded by the
issue of early leaving. Grammar and technical schools
together could fill the gap in national demand,[119] with
technical schools acting as pathfinders. At least
as important was the growing acceptance among the more
sophisticated Tories, who found themselves in control of
Government policy, that the 'Christianised Platonism' which
had characterized thinking about secondary education at
the time of the 1944 Act was false. Rigid segregation
was no longer possible.[120] Boyle argued that the hyperbole
of so much popular debate about national survival was
accompanied by the demand for improved technical education,
neglecting the fact that successful training must build
on thorough primary and secondary education.[121] This
meant an enlargement of the scope of all secondary
education, allowing vocational studies their fullest
expression in further education.[122] This was proposed
in 1956 and again in the 1961 White Paper 'Better Opportunities
in Technical Education.'

The 1956 White Paper was intended to be a "charter"

for the remaining secondary technical schools to develop
as real alternatives to the grammar schools.[123] The
change to secondary policy was made in pro-scientific
terms. But it was also made in terms of modern school
successes, especially the numbers proceeding to H.N.C.
courses in technical colleges,[124] evidence of the ability,
as yet untapped, in unselective schools. This was further
demonstrated by modern school entries for 'O' levels.
The recognition of these facts meant that modern schools
could equally well provide the sort of links technical
schools had developed with further education. The
technical schools, meanwhile, by developing as variants
of grammar schools would strengthen their links with
universities and colleges of advanced technology.[125]

The modern schools were particularly noticed in
the Party. Their success was linked to improvements in
living standards and appeared to vindicate the belief of
leading figures like Butler in experimentation. It was
left to Vosper the Parliamentary Secretary to declare that
the modern school was 'the most   outstanding post-war
development in education."[126]

Although the old formula of tripartitism was
repeated within the party it had been replaced by a
belief in selection, and the promotion of modern schools
in terms of their examination success, and the need for
rural re-organization. Hailsham most definitely expressed
the similarities between technical and grammar schools.[127]
These sentiments were echoed by Lloyd, and given
considerable force in the important policy document
'Secondary Education - A New Drive,' (1959).

In the second half of the decade the Party adopted
a less rigid and less defensive stance on secondary
organization. Selection remained a cornerstone of policy,
but the health of the grammar schools and a recognition.
of the worth of local experiment such as the Leicestershire
scheme, allowed the Party to take a more relaxed
attitude. The influence of personalities such as
Eccles, Boyle, Butler and Hailsham was also important
in educating Party opinions. They accepted the existence
of a considerably wider pool of talent than was formerly
supposed, thereby accepting the need to improve the
m.odern schools, in the light of their curriculum successes.
This realisation, compounded by the problems of selection
for technical education, also marked the effective
abandonment of a class of secondary technical schools.

(v)   <u>Secondary Technical Education and the Labour Market</u>.

(a) <u>The Professional Institutions</u>.

After the war, the gradual disengagement of the
technical schools *from their* parent colleges meant
the professional institutions lost direct contact with
secondary education. In any case, their outlook was
marked by a greater 'purity' which stressed the need for
preparation in 'fundamental' subjects before embarking
on National Diploma courses. The grammar schools became
the focus of interest for the recruitment of future members
of the professions.[128]

The Electrical Engineers, meanwhile, had rejected
specialization in their professional examinations. They
called for a "new conception" incorporating more "common
material" in "basic scientific subjects". It required
a "drastic pruning of applications and techniques" from

the syllabus.[129] The move towards basic subjects found
clearest expression in the Common Preliminary Examination
of the Institutions.

Occasionally, local schemes were negotiated
taking grammar school boys direct from their sixth form
courses to H.N.D. courses in technical colleges.[130]
In general, the growing links between grammar and modern schools
and   the colleges was an important development
in the 1950 s.

The success of grammar school technology course
and the inception of the Diploma in Technology meant in
any case that few boys wished to continue their technical
education part-time,[131] which had been the traditional
technical school route. Not least, the suspicion
remained to cloud all school attempts to develop practical
education that "technology will simply mean less
mathematics, physics and chemistry."[132]

Secondary technical schools, meanwhile, still
preponderantly without sixth forms, could not follow
this lead. They still managed in some cases to secure
exemptions from the first part of O.N.C. courses. This
was marked in schools still housed in technical colleges
and proved attractive to employers of skilled labour.[133]
The Engineering Institutions though, sought future members
in the "grammar and public schools;"[134] craftsmen
would be drawn from modern and technical schools.[135]

(b)   Employers and Trade Unions.

The co-operation of employers with the education
service took off after the war, with the growth of day
release[136] for technical and technological staff. This

was welcomed by the trade unions and Ministry of Education, who sought to extend the principle to unskilled workers. It was achieved through the efforts of the local authorities and technical colleges, although it was recognized that day release must build on a "sound foundation" laid in the schools.[137]

Leaders of industry warmed to the theme, proclaiming a vigorous role for the employers in helping determine the work of the schools. The need to create a graded technocracy, declared Sir George Schuster, meant that schools must rid themselves of their prejudices against manual work.[138] Sir Harry Pilkington applauded the move towards science in grammar school sixth forms.[139] "I am the user," declared Sir Hugh Beaver, President of the FBI, complaining the schools encouraged "too much of escapism - disguised .. as freedom for individual development."[140]

Admitting industry's "legitimate claim"[141] on the schools, what was demanded of them and how far was it met by the variety of secondary schools?

The FBI's membership increasingly recruited science graduates. They looked for the "good 'all rounder'".[142] The demand was for schools to equip pupils with "a firm grounding in written and spoken English, and .. a realistic and attractive approach .. to mathematics."[143] The British Employers' Federation (B.E.F.), meanwhile, claimed that "basic subjects" were neglected by modern schools in favour of vocational subjects which was best left to part-time education within industry.[144] Technical education, in short, was concerned only with vocational preparation and the "advancement of British Industry."[145]

Secondary schools could include "practical work" within
a "well balanced curriculum" as the technical schools did,[146]
proof of which was the high proportion of leavers who
proceeded to technical colleges. This acted as a stimulus to
advanced courses in technical colleges.[147] The inclusion
of technology in secondary education, and the need to
ensure that a proportion of the "grammar school" stream
entered industry, were pressing issues in the 1950s.
Solutions often had much in common with the approaches
being developed in the most selective technical schools.[148]

Teachers and employers expressed incompatible objectives.
Teachers looked at the liberal possibilities of practical
education, while employers (although they seldom demanded
vocational skills) were frequently suspicious that technical
education meant a reduction in the time given to 'basic'
subjects. Employers feared that technical education might
reduce the potential for training in school leavers - "the
capacity for future development" - which was widely interpreted
in terms of "character rather than attainment."[149]

Teachers in technical schools remarked bitterly
that courses like engineering, engineering drawing, and
metalwork were dismissed as "of no value to industry,"
in favour of English and Mathematics, followed by works
training.[150] One critic warned of the dangers in speaking
for industry as a whole. The variety of courses offered
by technical schools were aimed at different levels of
industrial employment, from future professional engineers
to skilled craftsmen. The former demanded mathematics
and English; the latter often included vocational instruction.

Teachers were growing in confidence about the educational

worth of their courses, rejecting "dictation from

industry."[151]

Nonetheless, employers did comment on the poor

preparation offered in many secondary schools. There

was a measure of support for this point of view. The

concern was that practical education neglected, "Basic

subjects." It was the duty of teachers "to impose by

discipline what inclination turns away from .. industrial

firms regard the responsibilityfor teaching technical

subjects as theirs."[152]

Secondary school leavers, complained the education

officer for Vickers-Armstrong,.. were frequently unable

to express themselves in speech and writing."

> "We are adequately equipped and staffed to train
> apprentices in workshop practice," he declared,
> "but not to attempt to make good deficiencies in
> their general education .. We too, deplore time
> sacrificed in the schools to vocational training."

The Education Officer of the Dowty Group concurred,

writing that

> "there was no marked difference in ability,
> after the first few months, which could be
> attributed to the existence or absence of previous
> workshop experience."

It was far more important, he maintained,

> "to have had a sound education in English,
> mathematics or science," than "to have done
> metalwork or even engineering drawing."

Employers, a Youth Employment Officer concluded preferred

school leavers

> "to be equipped with more mathematics and less
> benchwork .. Educationally this may be unsound,
> but .. it is a view which deserves consideration."[153]

There was a chasm between teachers and employers.

One technical school headmaster was constrained to write

that no less English or mathematics was taught in technical
schools; their aim was "to turn out well educated
youngsters through an appeal to their vocational interests."
Craft subjects and drawing were not simply instrumental,
wrote a teacher from Yorkshire - "to omit craftwork from
any child's schooling is to leave a gap that he will feel
for the rest of his life."[154]

> "We do not aim to give vocational training,"
> declared a craft teacher from Wigan in exasperation,
> "industrialists should make the effort to discern
> what schools of this type are trying to do and
> should recognize and value their aims and methods."[155]

He was disappointed. Employers continued to
complain that the content of secondary courses penalized
them, demanding "wider teaching of elementary science
and mathematics" and a reduction in "the amount of
specialized science instruction."[156] Teachers responded
in kind. Bitterness was expressed by teachers in technical
high schools, because of the neglect of their advanced
courses and use of workshop facilities, which "inflexible"
training officers could not build on in their training
schemes.[157]

Practical education attracted criticism in the
light of allegations about falling standards. Full
employment and progressive methods penalized industry
in its search for employees.[158] The Under Secretary
at the F.E. Branch, within the Ministry of Education,
had moderated his enthusiasm for technical schools and
realistic studies. "A good general education," he assured
the F.B.I. Southern Region, was a necessary precondition
of successful technical education, "the schools were
thoroughly aware of the importance of science .. they
quite rightly taught little or no technology."[159]

Hostility or lack of understanding towards the aims of secondary technical schools was typical of employers after 1945. The close links with industry developed in the localities between the wars were lost except for those schools which remained like trade schools. The interest in technical education by employers was in day release, as well as training at work. Special schemes such as the building schools also attracted favourable comment for their efforts to increase numbers entering apprenticeships in the industry. As late as 1957, technical schools were praised for characteristics which educationally and physically had become a limitation - "their close association with technical colleges .. an advantage in securing apprenticeships."[160] In some quarters, the passing of the Trade schools was a matter of regret.[161] Educationalists had decisively rejected trade schools by the early 1950s, [162] though several survived within the L.C.C.

The 1950s were marked by the widespread growth of practical courses in all secondary schools.[163] But employers, particularly large employers in scientific or technical industries, were not moved from their suspicion that the educational grounding of recruits was thereby harmed.

The result was that grammar school headteachers were defensive about technology, stressing the attention to "the inculcation .. of principles"[164] The I.A.H.M. Chairman, meanwhile, reassured employers that specialization was delayed "until late in the school career," and built on "a grounding in the humanities."[165] The B.E.F. for its part cautioned the C.A.C.E. (England)

that pupils from modern schools entering industry:

>"should have a sound knowledge of the
>basic subjects, rather than technical skills..
>Given the right teaching, a larger proportion
>of these young persons could attain the
>educational level considered desirable by
>industry."[166]

Technical school headmasters, frustrated by the lack of acceptance of their courses by employers, stressed the increasingly selective intake of their schools, and the "realistic preparation for careers in industry" they offered, in distinction to the grammar schools.[167]

Many employers in any case were still distant from research, technical change and improvements in productivity, including a number of the largest concerns.[168] Works training continued to receive preference to graduate entry among some engineering firms,[169] symptomatic of the suspicion about education as a whole, and was particularly marked in the motor-car and aircraft industries.[170] Industry, said one headmaster, was wasting the skills of scientists it already had.[171]

After 1945, the trade unions, working through the T.U.C., continued to press for policies developed before the war.[172] The T.U.C. collected information through a system of regional advisory councils which included education within their purview.[173] Although loosely committed to comprehensive education, the General Council was prepared to work in the meantime through existing institutions, an attitude which in the late 1950s drew the fire of members.[174]

With regard to the curriculum, the TUC supported practical education in a core of "general" subjects:

"In pleading for a very liberal provision of
general education .. in many cases this end will
be best served by exploiting the immediate
environment and the close interests of the
young person .. much of the teaching will
be related to and revolve around his industrial
interests."[175]

The C.A.C.E. (England) was told that:

"a good general education should be significantly
related to the world outside school .. and must
take account of the growing vocational interests
of .. young people."[176]

A balance of practical and general subjects would

prepare adolescents for industrial employment better than

"specialized" education, whether academic or .. vocational.[177]

For this reason, the Newsom Report was welcomed because

of its recognition that "education should be clearly

relevant to the needs of young people in the world

outside school" with the proviso that "all courses

with a vocational reference must be vehicles of general

education."[178]

Concern for the development of technical education

was deeply felt within the T.U.C. The greatest possible

circulation for the Congress' "Statement on Higher

Education" was sought among the local authorities.[179]

It was a response to Britain's apparent shortage of

scientific and technological manpower. Topically,

technical education was discussed at the 1956 Congress

when it was linked to a "complete overhaul" of secondary

education in favour of comprehensive schools "in order

that the supply of students for technical education may be

considerably extended."[180]

In the meantime, the T.U.C. argued, the shortage of

technical school places should be rectified by allowing

"modern technical secondary schools"[181] to compete

with grammar schools on equal terms.

(vi) Conclusion.

The importance of 'science' and 'technology' as a means of national regeneration coloured discussions of public affairs in these years. Education was no exception. Yet the technical schools remained on the margins of secondary education.

The schools were not able to surmount the confusions which were present at their origins. Although it was no longer acceptable to think of school organization in terms of instrumental functions (associations which nonetheless were slow to dispel) their educational justifications were unclear, and in the context of 'tripartitism' remained obscure. The issue of positive selection for technical education had been avoided until 1944. Privately it was widely admitted that research on the subject was inconclusive. The clinical division of secondary schools proposed by the Ministry of Education was questioned by local authorities at an early stage, and became steadily less convincing until it was formally abandoned in 1955.

The decade between 1945 and 1955 saw technical schools passed by. Buried under administrative problems (cost, selection) they suffered from a lack of projection. They were fatally caught up by changes of policy as the organization of secondary education became a major political issue from the early 1950s onwards. The ideal of selective technical school, re-stated as late as the White Paper on Technical Education (1956), proved to be a fragile construct with which to oppose trends in secondary education. Practical secondary education was

becoming well-established in other secondary schools.
The technical schools, moreover, were drawn into the
controversy about common schools. If technical 'aptitude'
was impossible to estimate with precision, there could
be no justification for limiting practical education to
pupils of a certain band of ability.

In one other important respect the schools proved
to be handicapped by the associations of the past.
Employers continued to misinterpret the nature of
technical education. It was regarded as a substitute for
preparation in 'fundamental subjects'. The professional
institutions, meanwhile, once friendly towards
vocationalism, were increasing 'pure' in outlook,
distancing themselves from practical education in schools.

Thus, in a period when science impressed itself on
national life and when the labour market justifications
of education had never entirely gone away, the secondary
technical schools were unsuccessful in establishing their
presence.

CHAPTER 7

The Evidence of the Development Plans: Local Authorities
and Secondary Technical Education 1944-51.

> "every local authority.. submit to the Minister a
> plan.. showing the action which.. should be
> taken for securing that there shall be sufficient
> primary and secondary schools available for
> their area and the successive measures by which
> it is proposed to accomplish that purpose."
> (Education Act 1944, 7 and 8 Geo. 6 CH31, 6-7)

(i)   Problems, Percnetages and Preparation.

The Development Plans were conceived in a spirit of

reform - the belief that the extension of educational

opportunity was a political priority, and that the

local authorities should all provide a similar standard

of secondary education. Following the publication of

the White Paper outlining the Government's intentions

for reconstruction, A.L. Binns wrote personally to the

Permanent Secretary Sir Maurice Holmes to say that

coercion must be a weapon in the Board's armory if

reforming hopes were not to disintegrate. Holmes replied

that to some extent this undoubted need would be met

by the Development Plans.[1]

But the Development Plans also owe something to

a static view of society. They were predicated on low

rates of demographic change and very long term planning

including estimates for capital expenditure. It was

soon realised that the programmes they outlined could

only be notional.

However, if the Development Plans are not a guide

to the evolution of post-war policy they illustrate
very clearly the conceptions of secondary education held
in the localities. They also reveal the influences on
their authors. Combining the merits of the census and ·
the opinion poll they are a guide to the local educational
intentions of the post-war years. Yet it is as well to
realise first some of the limitations which attach to
their use.

Statistically, the plans do not provide an accurate
assessment of school population trends. Furthermore, a
complete set of plans probablydoesnot exist outside the
PRO where a number remain embargoed despite the thirty
year rule. Great reliance has been placed on Joan
Thompson's monograph, Secondary Education Survey,
(Fabian Research Series 148, 1951). This slim work
contains a number of errors and omissions arising from
the use of provisional plans which have diminished its
usefulness.

The present survey is based on a study of 134
plans out of a total of 146 . 115 of these were
inspected personally; Joan Thompson's survey was
consulted for 19 authorities. The remaining 12 were
untraceable but not for major authorities, except in
Wales.[2]

A shortcoming of educational records of this
type is that they reveal little about the nature of the
decision making process which shaped local policies. It
would be rash to generalize too firmly about the creation
of post-war educational policy. But localism has
been a stronginfluence, and it is unlikely that local

studies will result in the 'same tale many times told'. This is confirmed by the growing literature on the subject.[3]

Moreover, the questions asked in the plans are not always those which interest the researcher. Details about the school curriculum are incidental; junior technical schools are usually excluded; the prolix form of presentation was intended to meet the needs of Divisional Executives.

Used with caution however the Development Plans are still a useful archive. From the great mass of detail they contain certain statistical expressions may be extracted. Of great interest concerning secondary organization are the relative proportions of children allocated to the various types of school. Ministry guidelines suggested about 70-75% of modern school places and 25-30% grammar and technical school places in each year.[4] The Spens Report had earlier found that roughly 15% of elementary School leavers were able to profit from a secondary school education and recommended that there should be a considerable development of technical high schools.[5]

Yet tripartitism was never really established.
As the Central Advisory Council for Education (England)
reflected:

> "To justify us talking of a tripartite system, we
> should need as many technical schools as grammar
> schools. In fact, we have four grammar schools
> to every technical school and six grammar school
> pupils to every technical school pupil. Over
> 40% of the local education authorities do not
> provide technical schools.."[6]

Statistically the tripartite ideal never approached
the suggested proportions even in the Development Plans.[7]
Local preferences however reveal wide differences in
planning for secondary technical education. (see appendix I)

The tables (in Appendix I) demonstrate that as
with Junior Technical Schools, the County Boroughs in
England showed a more marked preference for technical
schools than the Counties. Almost half the County
Boroughs planned for 10% of places in technical schools,
and a number - Doncaster, Hull, Stoke-on-Trent - made
allowance for more than 15% of places. Exceptionally
20% technical school places were anticipated at Canterbury,
Gateshead, Liverpool and Tynemouth. Of the remaining
English County Boroughs, a fifth planned for less than
10% of technical school places. The rest made no
provision for separate technical schools but intended
to develop technical streams, usually in conjunction
with modern streams, though grammar-technical schools
were not uncommon. It was rare for authorities to
reject wholly the technical stream as Bradford and
Coventry did in favour of multilateral schools.

The English counties on the other hand made
allowance for lower proportions of technical school
places, though large overall numbers were sometimes

anticipated in authorities like Lancashire, Kent and Essex. These LEAs built on earlier traditions, but elswhere, the wartime expansion of junior technical schools had been a basis for experiment, as in West Sussex. But the most significant feature of the County plans was the great fund of experience of separate technical schools abandoned by the largest authorities, London and Middlesex, and the rejection of separate technical schools by the West Riding.

The position in Wales is less clear since principal Development Plans are not available. The Swansea LEA meanwhile had still not obtained approval for its proposals by the late 1950s, Rural Wales made no significant moves to provide technical schools. Indeed the form of secondary organization was not a major issue.[8] The County Boroughs were hardly warmer in their support. Cardiff alone made plans for separate technical schools, while Newport, where the first Welsh J.T.S. had been set up took the opportunity afforded by the plan to abrogate the experience of the past, preferring technical streams in grammar and modern schools.

The preparation of the plans was left to professional officers, working in co-operation with other departments, especially the Borough Surveyor. The local Reconstruction Committees that had been constituted to implement the Education Act[9] found themselves looking to the Chief Education Officer (CEO) as the 'expert' for guidance about the form secondary organization should take.[10]

Elsewhere, there was an interplay of forces.

Alec Clegg, while he was not unsympathetic to the case for multilateral schools advanced by the forceful Walter Hyman, (Chairman of the West Riding Education Committee), was obliged to emphasise separate parts of the Development Plan to interested groups in the hope of diffusing a potential split in the Education Committee along party political lines.[11] In Staffordshire, the Education Committee and the CEO, Oxspring, were in agreement that multilateral schools should provide the bulk of secondary places.[12] Their view was not always mirrored at divisional level.[13]

In West Ham, strongly Labour in its allegiance the entire Reconstruction Sub-Committee was closely involved in the decision to adopt a tripartite secondary system. They were led to this conclusion by a small number of 'experts' and political spokesmen. The CEO and the chairman of the Education Committee were most in evidence, joined by a small group of councillors, and co-opted members, especially teachers.[14] A similar balance was evident in Middlesex, thinly disguised as 'Townley' in Saran's study.

Party politics did not play a significant part in determining the organization of secondary education. Undoubtedly from the late 1940s it became a live political issue. But in the local context a corrective is needed to the view that Labour controlled authorities favoured the common school while Conservatives and Liberals were inclined towards selection.[16] That alignment was embryonic (and sometimes inaccurate) and does not find expression in these documents. In 1946, when Labour controlled 10 Counties apart from London and 52

County Boroughs (43% of LEAs) only "a mere handful of local education authorities proposed organizing their secondary education on the basis of the common school."[17]

The grammar school held the respect of all shades . of political opinion, inside and outside parliament. The Labour outlook in the 1940s was not primarily conditioned by a view of education which related secondary organization (and in particular tripartitism) to social structure. The common school lobby was a teachers' lobby and in the constituences it was an education committee lobby. As . such, while influenced by social and political configurations it was "the educational disadvantages of the modern school and the unsatisfied demand for grammar school education, not the inequitable social structure of Britain, which provided both the force and the context of the campaign for reform."[18]

Nor can practical considerations be divorced from political positions. Expressions of principle were bound by everyday considerations. The plans afforded the chance to restructure schooling but could not assume a clean slate on which to mark out the future. Central priorities and resources were fixed - too low so far as school building and the provision of extra places was concerned. Education itself was not a major preoccupation of a government beset by economic difficulties and pre-occupied by the issue of nationalization.[19]

Locally, anterior forces proved influential in shaping policy. The existing stock of school buildings limited conceptions of advance to such an extent that the hopes of politicians, planners and

interest groups were sometimes seriously affected. In
Bolton for example these difficulties meant that
principle was limited by expediency. While the
comprehensive school was preferred it was "realized   .
that for some years ahead secondary education will continue
to be provided in existing secondary schools, each
devoted to a particular type of secondary education."[20]
In these circumstances, educational principles sometimes
collided with established practices. Teachers in West
Ham for instance initially opposed comprehensive schools,
not on principle, but fearing the disruption '
implementation of the policy would cause.[21]

Mention must be made of the bodies which sought
to influence secondary organization - and of one which
did not. Educational planners were obliged to consider
the claims of many interest groups. There is an extensive
literature on reconstruction to be set alongside the advice
from the Board and the Ministry of Education. The
support for Comprehensive schooling has been well surveyed.
Printed and published material was supplemented by
conference resolutions and even by direct approaches to
LEAs .[22]

Importantly, the AEC, which might have been
calculated to influence secondary organization in the
Development Plans did not do so. The Association
resolved that while experiment in secondary organization
was to be welcomed each local authority should "be
left full automony in the determination of schemes.. in
its area, "[23] defeating the proposal that it should
collectively support the multilateral principle.[24]
Accordingly the Association's influential Secretary

William Alexander was obliged to keep silent on matters
where he had a considerable interest although he found
it hard to conceal his dislike of multilateralism.[25]

Consideration of the plans by the Ministry extended
over a number of years. It was soon realised that the
original date for their submission was unrealistic[26]
and authorities were obliged to seek six monthly
extensions. Only a handful had completed their plans by
1st April, 1946 the appointed day, and steadily over the
next two and a half years the remaining plans were
submitted. The process of consultation and approval was
a lengthy business. Though most plans had been examined
by the end of 1948, with 25 authorities still awaiting
comments, only 30 plans had been approved, about a
fifth of the total.[27] Progress was rather swifter in
England than in Wales; whereas a third of English plans
had been accepted by the end of 1949, in Wales,
"progress .. was slower than had been hoped."[28] By the
end of 1952 two major authorities, Monmouthshire and
Swansea were wholly recasting their plans.[29]

TABLE 10
Development Plans submitted under the 1944 Education Act,
England and Wales.

Date	Plans Submitted (complete)	Plans Approved by Ministry	Plans Outstanding England - Wales	
1 Apr 46	16			
30 Sept 46	66			
31 Mar 47	92			
31 Dec 47	126	6		
31 Dec 48	146	30		
31 Dec 49		48		
31 Dec 50		70		
31 Dec 51		101		
31 Dec 52		120	21	5

Date	Plans Submitted (complete)	Plans Approved by Ministry	Plans Outstanding England	Wales
31 Dec 53		130	11	5
31 Dec 54		134	7	5
31 Dec 55		140	4	2
31 Dec 56		142	3	1
31 Dec 57		145		1

Source: Ministry of Education, Annual Reports.

(ii) Influences on Secondary Organization

> "It is perhaps not an exaggeratedclaim to make for
> the new Education Act," declared the Portsmouth LEA,
> "that the measure of its success will depend to a
> large extent on the conception which Education
> Authorities have of the aims and functions of
> the schools which will in future be included in
> the field of secondary or post-primary education.."[30]

While the Development Plans constituted an inquiry

into every stage of school life, and were intended to be

read in conjunction with the parallel 'Schemes for

Further Education' which authorities were obliged to

submit, their most controversial aspect were the

proposals relating to secondary organization. This

was the main reason for delays in approval by the

Ministry of Education.

Some plans are handsome, well presented forward

looking - full of detail, discussion and memoranda.

The plans of the L.C.C., Middlesex and Lancashire come

to mind. Others are poorly conceived. Compare for

example the brave hopes of the L.C.C. - "to create

a much wider aristocracy"[31] - with Burton-on-Trent

where the original plan was returned because of its

inadequate proposals for a building programme.[32]

Their production was an enormous task undertaken

in haste and in difficult circumstances. While

they could not therefore be regarded as "a final and

inspired vision of the future"[33] the principles
outlined in the plans are a most useful guide to
local opinion.

The immediate difficulty in surveying school
accommodation was the effect of wartime damage
and dislocation. County boroughs, because of their
physical unity, were most badly bit by structural damage
to schools. Portsmouth had special difficulties. Air
attack had been heavy and the first priority was
housebuilding; 17 schools were also destroyed
including a large secondary grammar school. Total
loss of school accommodation was in excess of 4,700
places.[34] West Ham too had been extensively damaged.
The evacuation of school children, and the need to
consider educational provision in the light of new
housing developments and rapidly changing local
population trends made planning especially difficult.[35]

Industry too, and therefore employment prospects
also suffered upheaval. In Northamptonshire this meant
that specific trade skills such as those offered in the
Boot and Shoe courses in the junior technical schools
were no longer viable. It was this, at least as much as
problems of selection which persuaded the authority
against technical high schools. Instead, "pre-technical
education" of a general kind was left to "Modern Schools
duly equipped with practical rooms."[36]

Pre-war differences between authorities also shaped
the forms of secondary organization adopted. In
particular, the wide variations in senior school
reorganization left some authorities with much to do
in providing modern school places.

Reading for instance had proceeded rather slowly,[37]
as had the East Riding of Yorkshire.[38] Rural counties
had made least progress. Apart from its grammar
schools, secondary education in Cambridgeshire was
poorly developed.[39] Norfolk estimated that a fourfold
increase in modern school places was required to
complete reorganization.[40]

Other authorities had more cause to be pleased with
their efforts. Middlesex had made great strides with
reorganization. Among the most completely reorganized
authorities was Surrey, which had made a start before the
Hadow Report was published. By 1939 over two thirds of pupils
of 11+ were educated in reorganized senior schools.[41]
Leicestershire, under its CEO Brockington, had an even
more successful record.[42]

The less successful authorities had to bear the
cost of separate senior school provision after 1944.
But as a corollary, reorganized authorities were limited
in their conceptions of future planning by the success
of the past. Multilateral schemes, for instance, were
hard to implement given the accepted size for schools
of that type, of about 1500 pupils. For all authorities,
especially the tardy, the provision of modern school places
were in the main adequate. But since the majority
of authorities were of the opinion that a tripartite
structure suited their needs, modern school places took
precedence over the smaller proportion of technical school
places.

Another logistic problem was the increase in school
rolls as the leaving age was raised to 15. It made the

provision of separate senior schools imperative.[43]
Furthermore, the increase in birth rate added an
unexpected strain, and was felt especially hard
in certain localities.[44]

Two further issues sometimes gave rise to local
difficulties. The relationships between the county
education authorities and the divisional executives
presented several "opportunities for discord.[45] The
Development Plans were the focus of contention,
building in many cases on already strained relationships.
The Middlesex plan, for instance, not only had its
critics at the Ministry but among a number of divisional
executives which "refused to alter" their proposals for
comprehensive schools.[46] Elsewhere, the dispute between
the West Riding and the Keighley excepted district was
also a bitter contest.[47]

In other areas a happier situation prevailed.
Derbyshire did not adopt a uniform plan for the county,
but based its proposals for secondary schools on the
recommendations of the Divisional Executives.[48] In
Carmarthenshire meanwhile a wide variety of bilateral and
multilateral schools were proposed at divisional
level to meet the needs of a small and scattered
population.[49]

The second issue reflected national difficulties -
the religious settlement and the end of the dual system.
Authorities with a large Catholic population faced the
most sensitive task. In Nottingham, while secondary
organization was conceived along grammar and technical -
modern lines, variations in the plan such as grammar-

technical schools were in deference to Catholic
interests,[50] a frequent explanation for apparent departures
from principle. There were other signs. Newcastle and
Liverpool were both strongly committed to secondary
technical schools and provide some of the few examples
of voluntary (R.C.) secondary technical proposals.[51]

In Lancashire the religious issue was most widely
represented.[52] Salford, while planning a secondary
system along tripartite lines divided its proportions
into Catholic and non-Catholic places.[53] The vigorous
competition between denominations is nowhere better
revealed than in St. Helens where almost two-thirds of school
places were subscribed by voluntary effort in 1945.[54]

The counterpoint between local preference and
national policy becomes clearer still when the declared
principles of secondary organization are examined.
Central suggestions and local interpretation come
together in the Development Plans. Many are silent on
the precise relationship but there is enough evidence
to build up a composite picture to set alongside the
statistical summary.

The tripartite form of organization was most popular
with authorities. Burnley spoke for the majority of
LEAs   whose plans conformed "to the requirements of
the Ministry's latest pronouncements ."[55]

Some authorities looked further back to the
Consultative Committee for inspiration.[56] But the
typology established by the Norwood Report and the White
Paper and given force in the Ministry's first pamphlet
'The Nations Schools' was more frequently invoked.[57]

In some cases authorities all but repeated the Norwood classification of 'types' of pupils.[58] These divisions were sometimes emphasized in terms of curriculum policies determined by the "great differences in the needs of individual children." Woodwork and metalwork, needlework and cookery, handicraft and gardening were best suited for children destined to "work with their hands." The technically minded would require "practical instruction along these lines .. coupled with training in science and theoretical technique." The academic child's needs meanwhile was for "tuition of a scholarly kind."[59]

The Ministry's circulars were another influence on LEAs especially when planning for modern and technical school places.[60] This advice did not preclude the amalgamation of schools into 'sides' but on balance schemes that 'did not depart in too radical a fashion from the well tried foundations of existing types of school"[61] prevailed.

At least as important as Ministerial guidelines was the force of tradition and experience in favour of separate schools. This weighed very strongly with Kent and Lancashire where the authority declared: "The tripartite system is the only one of which the Committee have had experience so far and their proposals are, therefore, in the main, confined to Grammar Schools. Technical Schools and Secondary Modern Schools."[62] Sheffield too, an important Labour controlled authority made much the same point.[63] It was uncommon for an authority to reject its traditions as Middlesbrough did on the grounds of the difficulty of selecting children

for non-academic education.[64]

But even the most optimistic authorities could not claim that the modern schools had established themselves in public esteem or developed coherent practices. "The . secondary modern school has no ancestry in the secondary system" maintained the Stockport Education Committee while conceding that "important educational and social work could be done among children who had not demonstrated high ability in either the academic or practical forms of education."[65] They were regarded, perforce, under a tripartite system, as "a development of the senior elementary school."[66] Their advent also met with considerable uncertainty as to their functions. Oxfordshire saw the modern schools as "the main pillars of the secondary system" but accorded them a residual place in curriculum development offering both academic and technical courses "but of a less specialized kind."[67] The Nottingham authority meanwhile trenchantly exclaimed that the term 'modern' did not convey "any meaning or purpose to the public mind."[68]

However, as the secondary modern curriculum was considered it is clear there was a considerable overlap in the way many authorities regarded modern and technical courses. This was to be observed in practice in the 1950's.

Some LEAs felt it was too early to speculate about the content of either modern or technical education, insisting the schools must be free to develop "on individual lines and to determine how best they can make their proper contribution."[69] But those authorities which planned along tripartite lines were obliged to make a

case for the separate and distinct 'types' of education

each school would offer. The Berkshire authority was

clear that a secondary technical education could not be

"met by essentially practical work of the kind which will

continue to be done in modem schools, or by absorption

into the scientific courses at the proposed grammar-

technical schools."[70] Although modern schools would

not be of a uniform type, the practical aspects of their

work were usually emphasized but distinguished "from

technical training."[71]

But among those authorities which did not plan along

tripartite lines, or which did not differentiate

between modern and technical courses the similarities

between them were often pointed out. It was sometimes

held that because secondary technical education was

different in kind from that formerly provided in many

junior technical schools then links with specific

industrial employment were not necessary. Not only were

industrial needs less easy to assess, but it was wrong

to set children on the path to employment as soon as they

entered secondary education. What was needed was an

opportunity for the modern schools to "offer a choice of

courses." Exploratory work suggested that pre-technical

courses might be concentrated in modern schools. This

would have the further merit of avoiding selection at

11 or 13, since pupils would be re-classified after a

general preparation over 2 years, as interests developed,

within the same institution.[72]

This view was widely held although the precise means

to accomplish it were different. Reading too proposed

a series of alternative courses, but within a network
of small (600-750 pupil) comprehensive schools while
preserving the old established grammar schools in the
town. Schools would develop areas of expertise -
engineering, building, design, commerce, nursing and
'grammar' course were mentioned, and a system of
transfers at 13 would enable children, after
consultation, to follow the course of their choice.[73]

The notion of pre-technical courses in modern schools
proved attractive in rural counties. The demand for
separate technical schools associated with industry was
limited, although practical courses were needed in the
later years of secondary education.[74] Even where separate
technical schools were proposed as in West Sussex the
potential of the modern school to "develop in special
directions and so supplement the more specialized
technical provision" was noted.[75] Other rural authorities
saw the modern school contributing to agricultural
education.[76]

The need to examine the modern school curriculum was
frequently linked to the need to establish the schools
in public esteem. In this process, the Ministry's
guidelines were sometimes attacked. The form of
secondary organization suggested by 'The Nation's Schools'
appeared to one authority as a "facile assumption that
secondary schools can be readily placed in one of three
categories" and would, "inevitably result in the 'modern'
school being relegated to an inferior position and
regarded as catering for children of a lower mental
calibre."[77]

Brighton too. while acknowledging the work of

its junior technical school felt its success could not be
transplanted to the new educational order, instancing the
close relationship with industry that had characterized
the school, and rejected the tripartite system because   •
of the need to ensure optimum conditions for the
development of unselective schools. Modern courses had
been enriched and would continue to be improved with the
raising of the school age. Therefore, to remove their
most able pupils at 13 would have "a discouraging effect"
particularly since they were "engaged in widening their
own courses of work to include not only craft work but
theoretical work based on it."[78]

Modern school courses then although still in
the process of definition were clearly the potential rivals
of most secondary technical courses.   This was most
apparent in the plans put forward by authorities who
rejected separate technical schools - indeed, it was a
principal reason for their rejection. The need to provide
Modern school places as a matter of first priority
accelerated the tendency to experiment with their
curriculum, while the high cost of technical schools and
places ensured   that even the limited development
anticipated in the plans would be carefully scrutinised.

Not least, questions of status and parity cannot be
separated from 'types' of secondary education. In this
respect the technical school fell between two stools -
one represented by the established grammar schools, the
other by the emerging modern schools. A minority of
authorities saw them leading to grammar status and the
majority as a variant on modern courses. Both types of

course were to develop in the life of the schools, and
it proved to be in reality, as it was in the plans an
uncertain and ambivalent educational territory.
Increasingly, the 'ethos' of technical education was
stressed by its advocates. But the most pressing educational
debate was established on other grounds. The issue of
secondary technical schools was eclipsed by the concern
for the future of the grammar schools and selective
secondary education against the merits of common institutions.

Equally worrying was the way in which the grammar
schools were presented. "The only type of secondary
school which has proved itself in actual experience", was
the estimate of one authority.[79]

There was a widespread feeling that they should not
remain as they were popularly supposed to be - the
repositories of an academic tradition within the
maintained system, but their continued existence was
rarely threatened, even in localities where comprehensive
schools were proposed, such as Reading. Authorities
stressed the extent to which they had already adapted their
curricula to meet the needs of industry.[80] Traditional
links with higher education including technological
education were also stressed. The grammar school at
St. Helens for example had developed close associations
with neighbouring universities but also with the local
technical college.[81] These conceptions of the scope of
grammar school education challenged the administrative
notion of secondary technical education already
threatened by some proposals for modern school curricula.

Conservative estimates of the place of grammar schools

were scarcely more heartening. While the role of technical
schools were not thereby questioned, it was clear that
differences in status, value and esteem made the grammar
school the pride of secondary education. Their
traditions were remarked upon - "essentially academic..
related closely to university standards and the require-
ments of the professions."[82] In York, the high
proportion of pupils staying on in the sixth-form - the
customary test of success - was invoked as a major reason
for the high proportion of grammar school places in the
plan.[83] The Reconstruction Committee in Sheffield
proposed separate schools so that technical and modern
types could develop "free from the influence of the grammar
school atmosphere", but the first thought was "that the
dispersal of pupils and staff of the existing grammar
schools would lead to a serious decline in the standard
of scholarship in the academic course for a number of
years."[84]

Even where grammar school provision was reduced
in the plans exclusivity played a greater part than
discrimination in favour of other types of secondary
school. Huddersfield argued this course of action
because pre-war provision of grammar school places was
more generous than the national average, concluding that
"the present attainment and intelligence standards are
too low."[85]

Much less common was solicitation for the junior
technical schools.[86] Usually they were ignored or
mentioned perfunctorily. Occasionally their work was
applauded, but interestingly, there were difficulties in

knowing in what ways secondary technical schools should
draw on this experience. The Gateshead LEA bluntly
"doubted .. whether technical education of the type now
proposed has been practicable to any real extent."[87] .
Others pointed to a clear division between the secondary
technical and junior technical schools. "It would
be a mistake to regard secondary technical provision as
a development of the Junior Technical schools", counselled
one LEA .[88] "The secondary technical school is largely
untried", wrote another, "for it would be unwise to think
of this type of secondary school entirely in terms of
the known 'junior technical school', which has rarely
enjoyed separate existence."[89]

(iii) Alternatives to 'Tripartitism.'

The Ministry of Education preferred separate
schools according to 'type' and the majority of LEAs
agreed. However, the Ministry conceded that strict
separation was not appropriate in every case.

'Alternative' forms of secondary organization were
adopted by a very substantial minority of LEAs and
their reasons for doing so represent an important critique
of central policy, and indeed of the selective conception
of secondary technical education. Bilateral schools
made up of 2 'streams' were preferred in many areas.
The other combination of 'types' could be found in the
multilateral school, composed of all 3 streams.
Comprehensive schools were also mentioned - unselective
and undifferentiated schools about which a degree of
confusion existed in administrative and political quarters
alike, regarding their precise balance of courses.

It is a misconception to infer that the Development Plans of authorities which did not plan for separate technical schools evince hostility to secondary technical education. It was rare for an LEA to exclude technical streams from their secondary arrangements as Brighton and Preston did. Even so, neither authority excluded technical education, assuming it would form an integrated part of each school course.[90]

The most common argument put forward by authorities against the tripartite scheme was the difficulty in positive selection for technical education. While intelligence testing might reveal individual differences in ability on which allocation could be made to Grammar schools there was

> "no body of experience reliable enough to show how
> such a selection can be made for technical
> education. It may be possible to find, even
> at 11, children with practical aptitudes but not
> to distinguish firmly children who will be
> successful in a modern school rather than a
> technical school."[91]

In particular, the Norwood Report and the White Paper were attacked as an inadequate and unreliable basis on which to set up separate technical schools. The Ministry was, on occasion, clearly stung by these rejections. The Darlington Education Committee had its plan returned with the caution that "the provision to be made for education of the Secondary Technical type will be kept under review", a concern which stemmed from the decision to establish grammar-technical and technical-modern schools.[92] The authority had earlier condemned the tripartite scheme as an attempt to

> "perpetuate the existing hierarchical structure
> and with it, those differences of status, prestige,
> staffing and amenities which spring from a complex
> of causes as largely social as educational in origin".

The authority saw its own solution promoting the forms of technical education appropriate to intelligence groups, (which could be readily ascertained), and thereby helping to eliminate the 'harmful distinction between liberal and vocational education.'[93]

The West Riding LEA too was chary of Ministerial advice. It freely quoted Scottish criticisms about policy in England. The three types of school were challenged on educational and psychological grounds, and scepticism was expressed that parity between schools could grow out of a tripartite arrangement.[94] Selection for technical education was an insuperable problem and the proportions suggested were arbitrary[95], concerns that remained unallayed in 1952.[96]

A number of administrative devices were proposed to overcome the problems associated with selection. Most commonly, a system of transfers between schools at 13+ was mooted, by which time aptitudes would be more apparent. This could take many forms.[97]

The "school base" - grouping together several schools on one site was another proposal for limiting the effects of selection at 11+. Some were planned with a view to amalgamation into comprehensive schools as the experience of universal secondary education grew.[98]

Bilateral secondary organization was most generally evident in Wales where there had traditionally been a higher proportion of grammar school places than elsewhere. In rural Wales particularly, Intermediate school antecedents impelled authorities to organize along grammar and modern lines with technical variants on

each. There were urban parallels also.[99]

The small number of authorities that proposed to set up multilateral or comprehensive schools are interesting early examples of a movement that came to dominate secondary organization. Furthermore, the opposition to selection or sometimes even to streaming were of a different kind to those made by authorities planning on bilateral lines.

A great many authorities made reference to the multilateral school as a possible form of secondary organization but concluded that experience of them was too limited. Nonetheless, a few LEAs were sufficiently persuaded by the advantages of multilateral secondary education to plan mainly along those lines. No single type of authority was representative of this group which included Westmorland and Cardiganshire, the L.C.C., Bradford and Coventry, the industrial county of Staffordshire, and a resort, Southend where the Conservative group held power on the Council.

Multilateral rather than comprehensive schools were envisaged. Selection, transfers and biases were all present in the scheme outlined by the L.C.C. except that they would occur within a single large school, rather than separate institutions.

In much the most radical departure from type the L.C.C. advocated the education of all children in multilateral secondary schools. It justified its proposals by a root and branch critique of the social basis on which English secondary education had been constructed and administered.

The tradition of secondary education in England
and Wales, the L.C.C. argued, elevated the academic
'grammar' curriculum above all others. In spite of
alternatives, of which the junior technical school was
the principal example, it remained pre-eminent. This
was unecessarily selective and biased towards
preparation for the black coated professions and
administration rather than industry and commerce.[100]
The Norwood Report was summarily dismissed as "a piece
of rationalization", though Spens was better treated
because of its acceptance that technical education was
capable of liberal interpretation. The permissive
aspects of the White Paper were particularly stressed,
in that while three main types of secondary education
had been posited, it had not demanded they should take
place in separate schools.[101]

The early discussion about the merits of comprehensive
education was closely linked to the place of technical
education in schools. The L.C.C. in particular laid
great stress on technical education in its institutions.
The vocational dimension formerly the preserve of the
junior technical school must be kept alive in the new
schools because of its intrinsic educational value
and as an aid to national well being. In typically
expressive language the London School Plan declared:

> "The world must come into the school and the school
> must go out into the world .. The vocational
> aspect of education in the schools has also a
> bearing on the future of this country .."[102]

It was proposed that the work of the existing junior
technical schools should be incorporated into the new
secondary schools. Appendix III of the Plan set out in

great detail how secondary technical education would
take its place under the new system, as each
Multilateral school would offer at least one technical
course.[103]   In practice, it proved to be difficult to
incorporate the former trade and junior technical schools
into the new system because in many cases their
courses had been unduly work-related and the skills
taught non-transferable. Most difficulty was
experienced in girls' trade schools. "It is impossible
to know whether secondary technical education will
flourish in this alien soil", declared one headmistress
with misgiving at the prospect of incorporation within
a multilateral school.[104]

(iv) Conceptions of Secondary Technical Education in
      the Development Plans.

Secondary technical education was regarded in a
variety of ways in the light of local circumstances and
traditions. It involved a good deal of fresh thought
about administrative details and educational functions.
Of the three 'types' of secondary education it had least
to build on as key aspects of the junior technical tradition
were rejected. The task was to develop a curriculum at
once both liberal and exact for pupils up to the school
leaving age and beyond.

Industrial need was an important stimulus in
planning technical schools even though the transmission
of particular techniques was no longer encouraged. At
West Ham for instance local industry created "a demand
for scientists and technicians, the supply of which it
is the duty of the educational system of the Authority
to undertake."[105]   It was unusual for an LEA to establish

industrial requirements and then reject technical schools, as York did, on the grounds that demand was for generally educated school leavers.[106]

Perhaps surprising is the support for technical education in rural areas. The Herefordshire E.C. was especially concerned to meet the needs of agriculture which was typified by a large number of small holdings as well as a work force in which women figured prominently. The Plan was considerably modified as the Ministry considered the proposed technical provision "much too ambitious."[107] Usually though technical education in rural areas was left to the modern schools even when technical schools were planned for industrial pockets of a County as in Dorset and Wiltshire. In wholly agricultural areas technical education was left to the Modern schools.[108]

In Wales, there was evidence of limited experiment with rural education in technical schools. Flintshire planned that advanced secondary agricultural education should be concentrated in a small 'Junior Agricultural School' at Celyn, and a strong 'bias' was anticipated in new schools at St. Asaph and Penley.[109] The Montgomeryshire authority made a point of developing rural secondary education in a school that was to be partly residential and providing agricultural and industrial courses, as well as training for girls'.[110]

Residential places were not uncommon. They were suggested by several rural authorities, at Grantham in Kesteven and Cornwall for example, as a means of concentrating resources. Somerset aimed to provide all

its technical education in six mainly boarding schools.[111]
At least two residential schools were established.[112]

Two central issues however already dominated local
authority thinking about secondary technical education. .
The first was the problem of selection. Indeed this proved
to be an insuperable stumbling block for some authorities.
The second (related) issue was the type of curriculum
technical schools should offer. In this, questions,
about intelligence grouping, aptitude and industrial
demand were all raised.

While opposition to existing selection procedures
concerned the difficulty of positively locating technical
aptitude in children, nonetheless, many local authorities,
for whatever reasons - persuasion, administrative,
convenience, caution or ignorance - were agreed that a
proportion of secondary school pupils could profit from
a 'technical' education. The sample of authorities
who proposed technical schools and who also expressed
confidence in selection procedures is small. The
arguments put forward were either based on experience or
adventitious.

The Barrow LEA   remarked on the:

> "generous symmetry about nature which would lead
> to the belief that there are as many children
> who would profit by an education of the technical
> school type as would profit by that provided by the
> grammar school. In the absence of proof to the
> contrary, the Authority have adopted that
> assumption as a working basis for the provision
> made in the Development Plan."[113]

The Huddersfield LEA admitted that methods for
selecting pupils for the technical high school were
"much less developed" than for academic education but
that "as an immediate practical working basis, it is

suggested that the provision .. might be about one half of that for grammar schools."[114] Stressing the educational justification for secondary technical education the Huntingdonshire authority concluded that selection should be based on a similar level of intelligence and attainment to that for the grammar school "if industry is to obtain recruits of the type needed to enable us to compete with other countries." Yet this did not solve the problem of specifically technical aptitude which remained "notoriously difficult" to establish and still largely rested on "empirical foundations".[115]

Most commonly technical schools anticipated providing courses which grew out of the engineering tradition of the junior technical schools. But some interesting additions were mentioned. Building figured prominently in the light of labour demands to meet the needs of post-war reconstruction. Birmingham proposed establishing a number of commercial and art schools.[116]

Curriculum expectations also conditioned the forms of local provision. This must be considered with reference to the local industrial background and occupational structure which exercised an indirect but powerful influence on the varieties of secondary technical education. The balance of provision favoured a type of school related to determinate needs. At Bath, the small number of students were split equally between engineering and building courses.[117] The Nottingham authority, which organized non-grammar places along technical-modern lines, made an exception in maintaining

the small vocational schools which prepared pupils for entry into the building and textile industries.[118] Similar considerations were put forward in Noroflk where the small number of technical places were intended to meet the needs of the limited engineering and building industries of the county.[119] When the Stoke-on-Trent authority came to set up its technical schools, the claims of local industry saw the amalgamation of the junior commercial school, with the junior school of art in 1951 to form Burslem Portland House County Technical School, an institution well-regarded in its locality by employers, though always hampered by poor facilities.[120].

Elsewhere, local demand was not deemed to be sufficiently large nor specifically technical to warrant separate technical schools, so that biases in modern and grammar schools were preferred. It was less usual to find support for the view that technical education would be limited in this way, though Liverpool based its policy on the need to provide places for 'more able pupils whose special interests and aptitudes do not receive adequate development in the Grammar Schools'[121] The Huntingdonshire LEA stressed that technical education in a rural county should in fact reject strictly local conceptionsof industrial need. In these circumstances, secondary technical education was regarded as similar to grammar school education, but would prepare pupils for higher courses in technical institutes through a course of practical but not narrowly instrumental technical education.[122]

The importance of local need shaped policies on matters like the gender balance of pupils, the leaving

age, and the allocation of places between the various
secondary schools.

Boys were held to be more likely to benefit from
technical education than girls and also more likely to
need separate technical schools. At Barrow, where boys
were catered for in their own school, it was argued
that the demand for female labour in the locality
precluded provision for girls whose needs for technical
education could be met by biased modern school courses.[123]
Limited opportunities for girls was also given as a
reason by Newcastle-upon-Tyne in allocating technical
places in the ratio 2:1 in favour of boys.[124] At
East Ham, the ratio between boys and girls was more even
on account of the large number of girls "who enter the
service of commercial undertakings."[125]

The leaving age was in turn influenced by the
demand of employers in an industry. In this respect
the junior technical school inheritance proved
strongest in that the age of apprenticeship was usually
preferred.[126] The demand for equality with the grammar
school or the grammar stream by the creation of technical
sixth forms was less evident but may be seen in a
handful of authorities including Wigan (where an important
technical high school was indeed established),
Oxfordshire, and Gateshead. The Oxfordshire plan
stressed:

> "the inadequacy of appropriate educational
> training for the higher walks of Civil, Electrical
> and Mechanical engineering, and those industries
> which call for advanced technical knowledge in
> Applied Science and Engineering in their leaders."[127]

Gateshead LEA meanwhile, specifically rejected the

old style of technical training that had existed in the

borough. While technical education would be comparable

to grammar school education in "aim, scope and character"

it would be distinguished by:

> "A more concrete and practical approach .. with
> a bias towards any considerable technical,
> industrial or commercial interests in the lives
> of pupils .. it is envisaged that many pupils will
> wish to qualify themselves by examination and the
> extension of school life to the age of 16 or 17 ..
> is to be encouraged."[128]

Again, it is noteworthy that a similar outlook was

shared by authorities which did not plan for separate

technical schools. The L.C.C. remained proud of its tradition

of technical education, affirming its determination

that advanced facilities would be provided in

every comprehensive' school for sixth-form work leading

up to university or senior technical college.[129] That

is,educational and preparatory functions would replace

the former emphasis on the acquisition of trade and

craft skills which had characterized the authority's

junior technical and trade schools.

The age of entry was unaffected by industrial needs

confirming the shift from employer's demands to the

educational benefits of a longer course (11 - 15/16).

In fact, it remained unusual for the schools to admit

pupils before 13. Certain authorities accepted the

old procedure and continued to plan along these lines,[130]

but in the main it was envisaged that entry at 11+ would

be followed by a two year general course prior to the

introduction by stages of vocational education.[131]

As for places, where technical schools were

planned the proportion of selective places generally

favoured the grammar schools. Exceptionally, as at
Gateshead, Sunderland, Liverpool and Stoke-on-Trent, the
reverse was the case. The reason given in each instance
was the occupational structure of the town which
favoured technical trades and professions over clerical
and blackcoated occupations.[132] The case of
Stoke-on-Trent must be one of the few in which an LEA was
asked to reduce the proportion of secondary technical
places outlined in a draft Development Plan.[133]

Curriculum policies have not been fully revealed
by this examination of secondary technical education as
conceived in the Development Plans. Even so, much of
interest may be ascertained from the conceptions of
technical education (organization, problems) and its
disposition to industrial need. On balance, there was
a desire to widen the scope of the preparation technical
schools offered. However, planning for universal secondary
education made it difficult to see precisely what the
technical schools could do that would be different from
their modern and grammar school counterparts, now that
ideas about work-related preparation were abandoned in
favour of the educational benefits of practical
education for industrial society. As it happened craft
skills which had been a feature of most trade and
pre-apprenticeship schools were played down because of
these associations. Handwork became more common in
modern schools, leaving technical schools to emphasize
the scientific and technological aspects of their
earlier work. Thus, they became more limited in the
range of preparation they offered seeing themselves as
selective institutions even though most LEAs regarded

them as intermediate institutions, probably having more in common with modern schools.

Predictably, Lord Alexander has argued that "progress in education comes, not from the centre, but from the periphery."[134] Indeed, the most progressive aspects of the secondary technical school owed a great deal to variants on the junior technical school traditions as they had evolved in the localities in response to particular pressures. These interpretations it has been shown were in opposition to prevailing opinion and policy at the Board from whom concessions were wrung. These local opinions found a sort of recognition in the liberal conception of secondary technical education outlined in the Spens Report. Not least, there were many who were anxious to translate these hopes, alongside universal secondary education, into the technical school curriculum. It would be the equivalent of the classical grammar school curriculum but inspired by different traditions. "There is an urgent need," wrote Edward Semper, "to define the function of the Technical Schools so that they may be lifted from the categories of the trade school at the one extreme and rather poor imitations of the grammar schools at the other."[135] This was the task for teachers and administrators in the 1950s.

(v)   Conclusion.

The Development Plans are a little used source
for the study of policy making in secondary education.
They provide, however, a detailed insight into local
conceptions of educational reconstruction over a short
but crucial period after 1944.

The permanent officials at the Ministry of Education
privately admitted that the grounds on which its
policies for secondary organization were constructed were
less than secure. The local authorities mirrored the
evident lack of coherence from the centre. The plans
revealed a multiplicity of views about the place of
technical education within a system of universal
secondary education.

The 'tripartite' system was designed with technical
schools in mind. Its adoption mattered if they were
to establish themselves. The Ministry of Education
conceived of secondary education in terms of the provision
of school places. The central department had disengaged
itself from detailed interest in the curriculum. This
meant that the brittle administrative structure and
the mechanistic educational justifications suggested
for secondary organization were unconvincing to many
local authorities . They used the Ministry's framework
to try and make sense of local priorities, much as they
had done between the wars.

The plans show that technical schools were not
favoured among a significant minority of local authorities
at the early planning stage for reconstruction. They
were rejected on grounds of cost, the more pressing
claims of modern schools, and critically, because their
administrative justification - selection by aptitude -

was simply not convincing.

The plans indicate that practical education found a place in the conceptions of all local authorities. The technical schools were confirmed as educational and not industrial institutions. But their future was not made secure. Instrumental formulations of vocationalism remained to obscure the paths of educational change. The evolving curriculum in other secondary schools provided little comfort to the new technical schools. As an administrative priority they could not claim first attention. The imperfect foundations of secondary organization meant that the change from junior to secondary technical school was not accompanied by an account of how practical education would fit with the symmetry of 'tripartitism'.

CHAPTER 8

The Evidence on the Ground: Local Developments 1944-65.

(i)   Introduction.

The local authorities interpreted the Education Act of 1944 independently, although the Ministry of Education had greater powers to promote national policies than the Board had enjoyed. The Ministry favoured, with diminishing conviction, a tripartite system of secondary organization composed of grammar, technical and modern schools. The policy was less firmly commended to LEAs by the late 1940s.   Under Florence Horsbrugh, however, it was re-asserted publicly. The notion of 'special aptitude' was used to lend credence to the principle of selective secondary education.

For the local authorities, the providers of technical schools, the convenience of such a division failed to answer a number of fundamental questions about secondary technical education. Chief among these were positive selection for technical education. Moreover, in spite of the advice that they should be selective schools, there was some doubt about the occupational groups for which the schools should prepare pupils. The result was that there was a variety of conceptions of secondary technical education. Practical education, moreover, was being developed in other secondary schools. It became more difficult to insist on educational grounds on the maintenance of separate schools. The number of technical schools began to contract.

(ii) 'Special' Aptitudes or 'General' Intelligence:
      the LEA's and Selection for Secondary Technical
      Education.

The scholarly attention which intelligence testing
had received since the 1930s,[1] had not been widely
taken up by local authorities before 1944. The main
evidence for its use was by the armed forces where
selection techniques had been applied to military personnel.
Local authorities were obliged to take notice of the
evidence for the measurement of ability and aptitude when
planning the organization of secondary education. It
would appear, however, that administrative convenience
played a larger part in determining the system of
secondary organization. Indeed, the interpretation of
psychological research gave rise to much confusion among
local educational administrators.[2]

Selection for secondary education proved a difficult
issue. Selection for technical education was more
problematic still. Areas of dispute included the age
of selection, the importance of general education, the
identification of specific technical aptitude, the
proportion of pupils likely to benefit from technical
education, and gender differences. The particular balance
in which these issues were represented are to be seen in
local conceptions of technical education.

The local authorities had little practical
evidence for selection. The one detailed model of the
'Technical High School' outlined in the Spens Report
made no mention of special aptitudes. The Consultative
Committee had received early evidence for the identification
of technical education. Caution, however, meant that the
Committee recommended that

> "the method of recruitment should be through
> the general selective examination by which
> children are recruited for the Grammar Schools."3

The Norwood Report, meanwhile, offered an

experiential division of school 'types.' Technical

education, moreover, was still primarily justified on

instrumental grounds. The junior technical school

> "owed its success to its very close
> association with local industry. Nothing
> should interfere with that relationship."4

Universal secondary education demanded 'parity

of esteem' between all secondary schools. This was

accompanied after Norwood by the common sense assertion

that fitness for technical education was equated with

'special aptitude'. The tensions implicit in these

views were never successfully reconciled. Educationalists

had emphasized the importance of vocationalism for all

pupils. The requirement after 1944 was that technical

education should be devised for pupils with a particular

'type' of intellect as well as a certain level of

intelligence.

Middlesex, one of the largest LEAs in the country

had particular difficulty in obtaining approval for its

Development Plan. This was because the authority

favoured a system of comprehensive schools. The Plan

was abandoned under protest. Even in the approved version

(1951) the authority felt it was impossible to plan along

tripartite lines, because of the contradictions

regarding selection for technical education. Middlesex

had been among the most active authorities in re-organizing

its senior schools. It was agreed

> "that there were two main types of secondary
> education, that of the grammar school and that
> of the modern school."5

The authority maintained that Spens and Norwood did not overturn this view in favour of tripartitism. Norwood in particular, it was argued, was constructed on inadequate psychological foundations.

English practice had shown that secondary schools exhibited far more diversity within institutions than the tripartite system allowed. The grammar schools, for example, in adapting to their growth in numbers had come to meet the needs of pupils

> "whose subsequent careers would be in industry and commerce rather than in the professions... Engineering and other sides have been developed .. The Grammar schools have developed scientific and practical sides in some cases to such an extent that they can offer a technical education comparable with that provided in the junior technical schools."

This tendency was even more marked in the former elementary schools where a great variety of practical activities had been included in the curriculum,

> ".. the raising of the school leaving age to fifteen opens up great possibilities which these schools should be given the opportunity to pursue... under approximately equal conditions.. there is little that can be done in the existing junior technical schools that will not be found readily reflected in the good modern schools.. it would be fatal from the point of view of providing diversity of educational opportunity for the pupils attending modern schools - and these represent something like 75 per cent. of the whole - to be educated on largely uniform lines."[6]

Most importantly, the contradictions of selection for technical education - between special abilities and general intelligence - were exposed. Noting the difficulties, the Middlesex LEA proposed to allocate pupils at 11 to grammar and modern schools in the ratio 1:4 with opportunities for transfers at 13. In the clearest early rejection of selection for technical education authority, the inconsistency between attempting

to fit an approach to education by the recognition of
individual orientation (Norwood) and the parameters
set by straightforward intelligence grouping (Burt et al)
was stated. If it were agreed that

> "technical education may be defined as
> an approach to education through practical
> activities which are allied to one of the
> adult skills"

then intelligence grouping alone was not an accurate
guide to personality because it did not take account
of individual abilities and aptitudes which were
described as,

> "innate technical ability."[7]

Therefore, to restrict technical education to pupils
of a single intelligence grouping, would distort the
growth of practical secondary education, which
experience had shown could be fostered in both senior
and secondary schools.

Technical aptitude and intellectual ability, the
Middlesex LEA reasoned, were related in unknowable
proportions. The level of intellectual endowment,
however, conditioned the nature of technical skill.

> "the degree to which technical skill can
> be developed is normally limited by the intellectual
> ability of the pupils... Thus, the
> question of technical provision is a matter with
> which both the grammar schools and the
> modern schools are closely associated although it
> takes rather different forms in the two
> types of school, it cannot reasonably be
> divorced from either.."[8]

The controversies about selection for secondary
technical education accompanied local planning for
secondary education. In practice, pupils allocated to
technical schools were selected on intelligence grounds
alone, just as those in junior technical schools had

been.[9] Technical 'aptitude' was never established to
the satisfaction of local authorities. By the mid-1950s
it was admitted that the Norwood typology was "now
generally discredited."[10]

(iii)   Institutional Conceptions of Secondary Technical
         Education.

     The underlying confusions beneath the confident
public pronouncements of the Ministry of Education's
policy for secondary organization were soon noticed in
the localities. The Ministry was not able to dispose
of functional views of secondary technical education.
This conception had deep roots and had been a part of
official policy since 1913. Its belief in secondary
education for all was no doubt sincere. The presentation
of secondary technical education proved difficult.

     In the absence of coherent guidance, local
authorities interpreted technical education autonomously
with reference to local needs and usages. The range of
local opinions is hinted at in the Development Plans.[11]
These interpretations were the earliest signs of the
polarity which became more apparent in the 1950s
between those authorities in favour of separate technical
schools and those who envisaged the development of
practical education in all secondary schools.

     A number of authorities assumed that universal
secondary education would mean the end of technical schools,
as instrumental views of their purposes became untenable.[12]
The technical associations had argued that the schools
should remain within the colleges.[13] The disengagement
of the schools from the colleges meant that thereafter,
the technical associations only took an intermittent
interest in them.[14] This was enough to alienate them from the

Association of Heads of Secondary Technical Schools
(AHSTS).[15]

For the greater part of its existence, the AHSTS was
dominated by particularist elements, who saw the technical
schools as the only genuine vehicle of practical education.
More defensively, the Association regarded the schools
as selective institutions whose justification was to
pioneer the vocational curriculum, in order to fertilize
secondary practices more widely.[16] This view was
endorsed in the Crowther Report which continued to support
a tripartite system.[17]

The Ministry of Education, outwardly optimistic
about the technical schools, explained they were yet
to overcome the "limitations imposed by their history."[18]
To others, however, it seemed they may never do so in the
light of the evidence of the Development Plans, where
technical school places were under-represented compared
to grammar school provision.[19] This was widely attributed
to the prejudices arising out of the background and
outlook of the majority of local educational adminstrators.[20]
It seemed to be confirmed by the personal experience of
individuals who sought to extend the development of
technical schools.[21] The result was "the failure of most
education authorities to apply the 1944 Education Act
as it concerns technical schools."[22] It was not
enough to include pre-vocational education in modern
schools as a substitute for "a secondary technical
alternative to the grammar school."[23]

Setting up 'Technical High Schools' became a matter
of the first importance to advocates of secondary
technical education. Primarily for boys, they offered
courses with a scientific and technological flavour at

the expense of the craft tradition of the junior technical school. The workshop was exchanged for the laboratory and the subject matter was informed by a much greater emphasis on theoretical considerations.[24] In this way, much that had distinguished the practical traditions of the junior technical schools was lost or relinquished to modern schools as a result of the quest for public acceptance and educational status.

The first designated technical high school was at Wolverhampton. But the first purpose built technical high schools were not opened until 1953. They were at Hatfield, described as a "grammar school with a flavour of its own" by its headmaster Dr. Hatton,[25] formerly an assistant master at Winchester College,[26] and the Thomas Linacre School at Wigan.[27] Within the AHSTS, technical high schools symbolized the acceptance of secondary technical education, and their development became the most cherished object in the Association's programme.[28]

It became commonplace to assert that the corporate goal of technical schools was to promote "academic courses with a technical bias."[29] Some believed this was best accomplished by maintaining the 'ethos' of advanced technical education which had arisen out of the association with technical colleges. Most rejected this link and were wedded instead to curriculum policies conditioned by selective intakes, longer courses and less directly preparatory concerns. As such it was accepted that in many schools the curriculum was "almost indistinguishable from that in grammar schools."[30] There were some schools which approximated to the selective ideal,

like the Leeds Central High School, where courses became more specialized in the upper forms,[31] as well as others much better known like Doncaster Technical High School, Gateway School in Leicester, and Cray Valley Technical High School in Kent.

Authorities which favoured technical high schools like Wallasey,[32] were praised. The curriculum was typified as "a sound and liberal secondary education."[33] These schools were seen as an effective way of combating the 'Trade School - Junior College'[34] idea of secondary technical education, which was only slowly dispelled.[35] Vocational ends were not forgotten, but they were less direct and their justification had changed. It was argued that the contribution of technical high schools was to help overcome the national shortage of technological manpower,[36] a claim that was intended to enhance the status of technical schools as a group. But technical high schools remained few in number so that each one was noteworthy. Buckinghamshire opened one as late as 1963.[37] Apart from a few well-known schools, or those in localities which maintained a commitment to separate schools like Kent,[38] collectively the position of technical schools was precarious and their status ambiguous.

(iv)   The Demise of the Technical Schools.

The number of technical schools steadily fell. From a maximum of 319 schools in 1948, most succeeding years witnessed a decline in numbers. The fall was sharpest from the late 1950s onwards. In 1964, the last year in which the Department of Education and Science listed secondary schools by 'type', there were 186 designated technical schools.

By contrast the number of pupils in technical
schools increased steadily, reaching a maximum of over
100,000 in 1960. This is explained primarily in terms
of the increasing length of the school courses, and the
development of sixth forms.

TABLE 11
Number of Secondary Technical Schools and Pupils, England and Wales 1947-64.

Year	Number of Schools	Number of Pupils		Total
		Boys	Girls	
1947	317			66,454
1948	319			71,698
1949	310			72,282
1950	301			72,449
1951	296			73,121
1952	291	48,389	25,940	74,329
1953	292	50,967	28,247	79,214
1954	300	53,753	30,819	84,572
1955	302	55,567	31,799	87,366
1956	298	58,404	32,342	90,746
1957	290	60,553	33,916	94,469
1958	279	61,036	34,203	95,239
1959	264	63,258	35,996	99,224
1960	251	64,223	37,690	101,913
1961	228	61,369	35,670	97,039
1962	220	61,436	35,975	97,411
1963	204	57,699	34,805	92,504
1964	186	54,639	33,862	88,501

Sources: Ministry of Education, Annual Reports, 1947-61.
Ministry of Education, Statistics of Education,
(later Department of   1962-64.
Education and Science)

However, when set alongside the proportion of pupils
in all secondary schools the figures show a constant
downward trend. That is, rolls in technical schools
failed to keep pace with the general increase in the
secondary school population.

TABLE 12
Proportion (%) of 13 year olds in Secondary Technical Schools
in England and Wales (Counties and County Boroughs) 1956-64.

	England			Wales			England and Wales		
	Counties	County Boroughs	Total	Counties	County Boroughs	Total	Counties	County Boroughs	Total
1956	3.5	5.5	4.2	2.3	4.0	2.6	3.4	5.4	4.1
1958	2.9	5.0	3.6	1.9	3.5	2.3	2.9	5.0	3.5
1960	2.5	4.9	3.3	0.9	3.6	1.5	2.4	4.9	3.2
1962	2.1	5.0	3.0	0.7	1.7	0.9	2.0	4.9	2.9
1964	1.9	5.0	2.9	0.2	1.8	0.6	1.8	4.8	2.7

Source: Ministry of Education, Secondary Education in England and Wales,
(later Department of   (List 69, 1956-1964).
Education and Science).

There were some bitter closure battles which
became protracted and acrimonious. For the most part,
though, heads were not specially assertive and accepted
the fate of their institutions.[39] Older schools, or
those which continued to share premises with technical
colleges were closed down. Probably in a majority of
cases, of which Nottinghamshire is an example,[40] the
technical schools were simply re-designated by administrative
fiat.

Bitter disputes arose over the future of certain schools,
notably at Southall and Twickenham in Middlesex; Leicester -
where Gateway Girls' School was under threat; and Rotherham
where both the girls' and boys' technical high schools
were the subject of attention. Southall alone was able
to secure a stay of execution.
In rural schools, at least, "courses with a technical bias
in grammar and modern schools"[41] proved congenial to
authorities. In Somerset and East Sussex the decision
was defended on grounds of administrative convenience
and educational conviction. This engendered considerable
ill-feeling. At Worthing, for instance, the well-
established technical high school was a casualty of
local policies.[42]

Some schools, like Acton, went quietly to their end.[43]
Others fought a dogged rearguard action against the trend
of opinion, sometimes in the face of considerable
administrative hostility. Smaller authorities,
maintained E.W. Stone, Education Officer for Brighton,
could not support separate technical schools.[44] Dr. Gurr
of Middlesex bluntly dismissed them as "an anachronism."[45]

He found himself with a fight on his hands as support was
mobilized behind the threatened schools in his authority.
In the event, the AHSTS proved to be rather tardy and
half-hearted in its support of individual headteachers [46]
underlining its weakness in the face of determined LEAs.
The schools relied on local expressions of support, and
their record of achievement, to oppose administrative
decisions about their closure. Southall Technical
School was something of an exception to the rule[47] which
saw the demise of several well known schools. It was
still housed within a technical college, and was proud
of its success with an unselected entry of boys admitted
at 13,[48] and its ability to support a sixth form.[49] The
headmaster, Frank Holroyd, was able to count on
considerable parental support in the campaign to save
the school.[50] Prominent local Conservative politicians
like Kathleen Ollerenshaw from Manchester interpreted
the issue as one of local freedom to experiment against
administrative diktat.[51] The battle was joined by
teaching staff,[52] as well as a number of important
local employers. This forced the issue to the attention
of the Minister.[53] He was obliged, in the light of
his predecessor's policy to encourage advanced work in
technical schools, as well as his own pronouncements on
the subject,[54] to allow the school to continue in
existence.

Other schools, similarly placed and within the
same authority, like Twickenham Technical School were
less fortunate. With brutal frankness the staff were
informed by the ATTI that any opposition to closure they

contemplated would be fruitless and potentially
damaging to the Association's members whose scale
positions were an important bargaining point.[55] The
ATTI, one staunch supporter of technical schools
concluded, on the basis of this advice was "on the point
of losing any right to represent the school point of
view."[56]

Many other urban technical schools fared no
better. The two selective technical high schools in
Rotherham were threatened by comprehensive re-organization[57]
and their staff conducted a bitter quarrel with the LEA
over the lack of public discussion of its plans.[58]
At Leicester, Gateway Girls' School no longer fitted into
the town's plans for girls' selective education. Amid
complaints at the clandestine methods of the LEA [59]
the Ministry was presented with a petition containing
over 10,000 signatures to rescind the local order,[60] but
to no avail,[61] bringing its lack of commitment to the
proposals of the Crowther Report regarding technical
schools into sharp focus.[62] Schools even less able to
defend themselves included Harrogate Technical School,
condemned by having to share the premises of the local
technical college,[63] or the Nottingham Technical school
for Textile Trades and Building which despite
attestations to its "remarkable success"[64] retained about
it too much of the trade school. These well-publicized
cases challenged those who saw the technical schools
as an enduring feature in urban authorities.[65]

(v)   The Challenge of Other Secondary Schools.

The fate of technical schools was linked to the growth of practical education in other secondary schools. There were voices raised throughout the period pointing to the need for vocational interest and technical activities in all secondary schools. It was reasoned that a strict tripartite system impeded that objective.[66] There were a host of schools developing practical secondary education after 1944. They included selective schools like Dauntsey's, Bryanston and Ealing Grammar School,[67] so that the AHSTS (at one-level) was simply accepting the logic of these developments in its self-conversion to the Association for Technical Education in Schools (ATES) in 1963.

In spite of difficulties over selection, especially the absence of special tests,[68] the technical schools sought to improve their status by presenting themselves as alternatives to grammar schools. This had long been an ambition of technical school headteachers[69] and appeared to be affirmed by the White Paper on Technical Education (1956).[70] Thus, it was suggested that the technical schools must enter the race for GCE success, develop sixth forms, delay vocational specialization, and play down the place of "practical skills" in the curriculum.[71]

The accent on 'general' education in which 'vocational' interest' might find expression was in keeping with prevailing trends of thought about secondary education. Vocational education, as it was widely understood, was a concern of the later years of the secondary course, where it was identified by the addition of

scientific and technological subjects to the school curriculum, rather than by particular approaches to learning. The CACE (England) said as much in its first Report,[72] while Chief Education Officers sympathetic to technical high schools made the case for them in terms of their contribution to general post-primary education[73] - in order to justify them as 'real' secondary schools.

Observers could therefore be forgiven for failing to appreciate the differences between grammar and technical schools, especially if the latter possessed their own accommodation. Predictably, the AHSTS exhibited tactical reflexes against both grammar and modern schools,[74] but sharp distinctions were becoming less clear than they had once appeared. The "genuine full-length" course demanded for technical schools[75] was slowly replacing the junior technical (13+) programme[76] in surviving schools. They appeared even more like other secondary schools. The benefits of technical schools were almost intangible - "a matter of atmosphere"[77] especially if they had no direct connection with advanced technical education or employment. A similar case was being made for the changing curriculum of the grammar schools.[78]

The curriculum and organization of the most advanced Technical schools like Luton increasingly resembled that of the grammar school.[79] "The difference between the two becomes imperceptible," explained the Chief Education Officer for Devon in defence of his LEAs decision to merge grammar and technical schools.[80]

Official support for science and technology in

schools was linked to the maintenance of Britain's
international position by means of a highly educated
workforce. The technical schools, for example, were
encouraged to take the G.C.E. examination to help
alleviate the shortage of science teachers,[81] just as
attention was drawn to the development of technical
education in grammar school sixth forms.[82]

In truth, however, despite the assurances of the
White Paper on Technical Education (1956) about the
future of selective technical schools, there was
diminishing official commitment to the schools. They
came to be regarded as a means of improving the
proportion of selective places. Geoffrey Lloyd, for
example, admitted he had no personal knowledge or
interest in them. He offered the AHSTS delegation the
comfort that they would "eventually be the same" as
grammar schools.[83]

The educational territory of the Technical schools
was also challenged by developments among the Modern
schools, where the "vocational trend"[84] found a secure
place. They seemed to be fulfilling the hopes entertained
for them by, for example, the NUT,[85] a case which had
originally been put to the McNair Committee.[86] The modern
schools had arrived at a position in the mid 1950's
where they had assumed much of the craft work formerly
accommodated in junior technical schools,[87] and had
also come to pioneer 'biased', 'special' and 'advanced'
courses using vocational interests and project methods,[88]
like many technical schools. These concerns were widely
seen as being in a direct line of descent from the

curriculum policies outlined in the reports of the Consultative Committee,[89] still a potent influence on educational philosophy.

The Ministry of Education itself, axiomatic about the need for secondary selection, noted the "remarkable success" of "extended courses" in modern schools. They were the best evidence that the schools were "rebutting the charge that their pupils are dogged from the start by a sense of failure."[90] Progress, measured by success in external examinations as well as links with further education was praised by Eccles.[91] The achievements of the modern schools were noted in the White Paper, Secondary Education for All: A New Drive, (1958),which sought to raise the standard of accommodation in all modern schools[92] by eliminating the all-age institutions.

The initiative in implementing vocationalism appeared to have passed to grammar and modern schools. The former seemed to have successfully diversified their practices and the latter to have overcome the limitations of poor accommodation and unselective intakes to develop lively and relevant craft and technical courses. By contrast, the technical schools as a group seemed to be stuck in their particularism. They were regarded as retarding influences on curriculum policies in other secondary schools, to the extent that the College of Preceptors in a survey of opinion among 2,600 headteachers on the recommendations of the Crowther Report found that their development aroused the "strongest opposition."[93]

The educational issues about the organization of

secondary organization came to the fore in the 1950s.
In addition, the political controversies about the Merits
of selective vs. unselective schools meant that the
technical schools became increasingly hard to justify
as separate institutions.

Tripartite differentiation of secondary schools was
a canon of organization which became less and less
tenable between 1950-60. With the increase of craft,
scientific and technical education in all schools,
tripartitism was abandoned.[94] It was also argued that
the technical schools themselves could not maintain their
distinctiveness as quasi-industrial institutions as
they withdrew from the technical colleges.[95] It did not
matter that technical school heads themselves had sought
to rid their institutions of these industrial and
'training' associations. Thus, the Association of
Education Officers argued the merits of bilateral
schools as an opportunity for implementing a practical
curriculum for a majority of pupils, and simultaneously
raising the esteem of the modern schools. The Association
also sought to minimise differentiation by gender, so
that opportunities for girls should be the same as for
boys.[96] The need to improve the status of technical
education was also put forward by the HMC/IAHM as a
reason for the development of grammar-technical schools,[97]
though territoriality was not absent from their
considerations. Equality of treatment, especially in the
matter of age of entry to the technical schools, was the

best that was urged on their behalf in a joint statement
by the AEC and the NUT.[98] Predictably, it was the ATTI
which called for a "considerable expansion" in the number
of technical schools,[99] though to all intents, its
active interest was now focused on the problems of
further education.

The principal questions of secondary organization
had in any case moved beyond matters of school types as
the 1950s progressed. The evidence submitted to the
CACE (England) shows that by far the most pressing policy
alternatives were between raising the school age to
16 or the introduction of county colleges, both of
which had been envisaged in the Education Act of 1944.
The balance of opinion favoured the latter course of
action. It was supported, among others, by the AEC,
the Association of Metropolitan Counties (AMC) and the
County Councils Association (CCA) and the ATTI.[100] The
L.C.C. however was prominent in arguing for raising the
school age in order to complete the process of "secondary
education for all,"[101] a suggestion which found favour
with the Council.

The local authorities were sometimes cool towards,
and not a little ambiguous about the purposes of separate
technical schools in the Development Plans. Their
growth was further limited by restrictions on unit costs
and building from 1944 onwards. Official figures - which
appear to show a healthy rate of growth in technical
school places - must be treated with caution since they
really indicate a movement to rehouse the most unsatisf-
actorily placed institutions, [102] in "old buildings or
crowded corners of technical colleges."[103]

Despite increased supervision by the Ministry of Education of the policies of the LEAs, consent rather than imposition still typified their relationships.[104] Following the stream of advice regarding secondary organization between 1944 and 1948, the authorities were left to their own devices. Even Florence Horsbrugh's attempts to reimpose a pristine tripartite system was of greater political than practical moment, and in any case was aimed primarily against comprehensive education, rather than in any real sense expressing support for technical schools. Eccles and his successors, meanwhile, were interested in maintaining a selective system of secondary education in which technical schools would lose their separate identity in return for a putatively enhanced status.

(vi)   Problems of Institutional Identity.

The technical schools were prisoners of a past in which vocational preparation and industrial need continued to be strongly represented. Their close relationships with the technical colleges were favourably noticed,[105] but the increasing physical separation did not prevent less desirable associations continuing to be asserted. The curriculum of technical schools, for example, was limited for the most part to "certain forms of engineering .. the most obvious and orthodox technical courses."[106]

The contradictions between industrial preparation and educational justifications of vocationalism were well represented among the membership of the AHSTS. There were three main technical school types, described by one commentator as approximating to the "Trade school concept", "the S.I. Preparatory School idea" and

"the concept of the Secondary school."[107] The first had become untenable, the second remained locally popular but not capable of extension, and the last most favoured on educational grounds after 1944. But the first and second types vied with the last throughout the life of the secondary technical schools, blunting their impact on educational thought. There was a need for "some sense of common purpose" to dispose of the notion that the schools were places where "children who have no head for the heights are set to work .. with their hands."[108] But for every headteacher who protested against the most utilitarian aspects of the junior technical school legacy,[109] others were unselfconsciously engaged in preparing pupils for employment as their first priority.

But technical schools also experienced difficulties in maintaining traditional support. The junior technical schools had taken great pride in their links with local industry, and with the technical colleges which had usually granted exemptions to their pupils from the first stage of the ONC. The length of the school course had often been determined by the age of entry to apprenticeship. The technical schools were thrown into a quandary with the introduction of the GCE examination. It forced them to choose between entering their most able pupils for the examination which would result in their *forfeiting* entry to apprenticeship at 16.[110] A more flexible attitude was sought from both sides of industry.[111] Restrictive practices, however, continued to prevail.[112]

Difficulties of another type - growing 'purity' - was increasingly encountered by technical schools in their

dealings with the professional associations. They had formerly looked warmly on the junior technical schools as the first step on the ladder to part-time professional certification. Heads were anxious to establish guidelines for SI exemption in building subjects, for instance, with the backing of the Ministry of Education.[113] They were informed that responsibility lay with the college principals, in consultation with joint professional committees. The heads suggested that satisfactory completion of a 3 year secondary technical course might be deemed to satisfy the requirements.[114] But the Institutions were not disposed to accept this estimation of technical education. The Municipal Engineers would not countenance technical subjects, even though foreign languages could be substituted, to secure exemption.[115] Similarly, both the Mechanical and Electrical Engineers would only accept physics 'O' level as the science subject for S.I. exemption.[116]

The AHSTS aligned itself with the trend towards external examinations particularly the GCE. This was justified in terms of their contribution to 'general' education. After all, it was argued, the GCE (unlike the School Certificate) was a single subject examination. But the universities' disinclination to recognise technical subjects for purposes of matriculation meant that the schools were bound to oppose special technical examinations. They were seen as a mark of inferiority. The AHSTS viewed new examining bodies like the AEB with suspicion.[117] The heads preferred to work with existing Boards particularly the NUJMB and Durham.[118]

The desirability of "breaking away" from the conventional 'science sixth' was enthusiastically canvassed, with engineering subjects taking the place of chemistry or a second mathematics subject.[119] This hope was dashed against the obstacle posed by external examinations. There was a dearth of "suitable syllabuses and examinations" since examiners could not be persuaded to take part in the preparation of syllabuses at the "formative stage."[120] The conservatism of university heads of departments, meanwhile, prevented the acceptance of alternative subjects to conventional science combinations.[121] As some headteachers fully realised, this meant that schools taking conventional GCE subjects could be accused with some justification as in danger of becoming a "pale imitation of the grammar schools."[122]

The disappointments and rebuffs that the AHSTS received resulted in a thin-skinned and defensive outlook; especially in the 1950's. Olive Banks', Parity and Prestige in English Secondary Education, (1955) was criticized for its analysis of secondary technical schools,[123] while even a sympathetic observer like Reese Edwards was taken to task for allegedly failing to describe adequately the successes of the schools.[124] Relations with the NUT were also strained because of its sympathy towards modern schools.[125]

But it was becoming clear that the tide had turned against technical schools. Despite 'official neglect and parsimony'[126] individual schools had prospered, and their achievements had been celebrated in the Crowther Report. It was crucial, argued Edward Semper, that this impetus should not be lost, and pressed for a national inquiry

into the 'Alternative Roads.'[127]

(vii) Conclusion.

The twenty years following the war saw the demise of the secondary technical schools. From planning to practice the schools had, collectively at least, been unable to establish themselves as a distinctive and coherent part of secondary school provision. They continued to exhibit a variety of purposes, competing for educational territory with other secondary schools, and commanded widely different resources and standards of accommodation.

Institutionally, 'Technical High Schools' and schools that corresponded, more or less, to junior technical (or even trade) schools co-existed. These types represented different educational objectives, and even marked the continuing existence of training purposes. Curriculum policies reflected this lack of administrative coherence in the widely different practices to be found in the schools.

An ideal was emerging - the selective technical equivalent of the grammar school. It became a justification for the schools. It was hoped that they would fertilize practices in all secondary schools. This exaggerated the coherence of the curriculum in technical schools and ignored developments in other secondary schools. The growing interest in practical education and the increasing support for science in schools meant that technical schools did not lead curriculum development in the field, but contributed to it. In any case, the 'best' technical schools were finding it difficult to resist an increasing 'purity' of outlook. This was accelerated by the growing influence of external examinations on the

curriculum of all secondary schools. It was also
hard to see how technical schools were integrating their
curricula behind an agreed conception of vocationalism.
The AHSTS, meanwhile, especially in the 1950s. failed
        to successfully project technical education, while
its inward looking nature made the Association few friends.The
result was that the technical schools were not able to
provide a lead in developing practical education in
schools. Nor were they able to surmount their poorly
conceived role within the network of secondary schools.

CHAPTER 9

Between Thomson and Spens: Practical Education and Critics of Academicism between the Wars.

(i)   Introduction.

The inter-war years were a fertile period for discussions about practical secondary education. Educationalists took forward the critique of academicism and formal learning and applied it to the secondary curriculum. Their views were eclectic but sustained the spirit of criticism against the dominant Secondary school curriculum. They put forward an alternative point of view that reconciled vocation with education by means of activity methods. No single coherent model of the practical curriculum emerged. Expression was limited in the main to the craft work of re-organized senior schools, the curriculum of a good many junior technical schools, and 'advanced' courses in maintained and public Secondary schools.

The higher grade schools and organized science schools had developed a secondary technical curriculum. This had been a largely unselfconscious growth justified on grant earning or occupational grounds as much as educational grounds. Its practice displayed a 'simple' curriculum model in which technical subjects were 'added on', altering the traditional balance of subjects. The period after 1944, meanwhile, appears also to be more concerned with 'working out' vocationalism in the schools. The inter-war years were a period during which educationalists attempted to take stock of the secondary curriculum, starting from a discussion of dominant academic practices. One result was an increased emphasis

on vocationalism. This strengthened the educational
claims of the junior technical schools, and sketched the
broad outlines for secondary technical education after
1944. It is recognized that contexts changed greatly   •
as secondary education became the right of all children,
and education itself came to attract much greater
attention and resources. Nonetheless, there were
significant continuities in educational thought. Child
centred education; the educational value of selection;
the balance of subjects; the respective merits of
'scientific' vs. 'cultural' subjects; 'association' and
'integration' of subjects in the curriculum, were all
discussed in these years, and continued to influence
educational practices after the war. After 1944,
the challenge of universal secondary education meant that
to a much greater extent than before curriculum development
in technical schools (a disparate group of institutions
in any case) became a more day to day activity,
unencumbered by the need for constant justification. It
was accepted there must be a variety of 'types' of
provision. The educational foundations of a practical
secondary technical education were laid in this period.

Practical education is discussed here through an
examination of representative points of view associated
with individuals. This has been preferred to institutional
case studies because of the inability to construct
curriculum histories of the junior technical schools
from the widely scattered and slight documentation
available. Many junior technical schools undoubtedly did
give expression to a practical secondary education
within the confines of their short courses. These

traditions, however, become clearer after 1944. In this period, their activities were at the very margins of secondary education.

(ii)   Contexts of Discussion.   .

The Spens Report (1938) contained the most authoritative discussion about the nature and purpose of a secondary technical education in the period. The 'Technical High School of Science' became the most prestigious type of technical school. Its ideal confirmed the scientific school above the craft school, whose justification had been primarily instrumental. But the 'Technical High School' was not simply the creation of the Consultative Committee. Nor did it distil the best practices of junior technical schools. The genesis of much thought about the curriculum of technical schools is to be found in inter-war discussions about practical education.

Four main areas have been identified through which the case for practical education was made. They are

(1) Accounts of the evolution of the secondary curriculum which pointed to its subversion by academicism. These served to legitimize practical education. This view of the curriculum emphasized the struggle between practical and academic education, which resulted in the triumph of the latter.

(2)   Moral arguments which built on the historical foundations, but were more often presented in terms of the cultural determinants and philosophical bases of the school curriculum.

(3)   The 'liberal' possibilities of vocationalism. This section will introduce some of the issues that were most

fully joined after 1944 (Ch. 10 (ii) and (iii)). It will show that there were competing interpretations about the subjects of the curriculum, the balance between subjects, 'associated' and or 'integrated' models of technical education. These ideas had their origins in the value placed on technical subjects to provide a liberal education.

(4) Reference to foreign practices which lent support to both educational and instrumental justifications for vocationalism.

The common starting point for most discussions about the benefits of practical education was the domination of the school curriculum by the mores of the classical tradition. This had resulted in a curriculum that was academic in its methods and (allegedly) literary in content. This disposition was reinforced by the advent of external examinations in 1917. An alternative school of thought, however, nourished and kept alive a competing doctrine, namely, that secondary education ought to integrate labour with the classroom, co-ordinate hand and eye with brain, and verbal facility with manual dexterity. In short, to develop the whole personality by means of vocationalism.

The Spens Report represented both the acceptance and the disavowal of these ambitions. Acceptance by its recommendation of 'Technical High Schools.' Yet it was felt that they would confirm, by the creation of a separate administrative structure, the low status of practical education, and were bound to minimise its impact.[1] What was needed was the incorporation of vocationalism across the school system.

As it was, critics asserted that established secondary practices had 'just happened'. The curriculum was nothing more than an accretion of subjects without reference to ideals,[2] sustained by an ideology which raised up 'purity' above practical knowledge. There was little truth in this argument, but it was widely shared and was used as a means of attacking traditional practices. The Spens Report itself detailed a critique of academicism to which it opposed the realistic course of the 'Technical High School.'

The growth of secondary schools (after 1902), it was argued, had coincided with the emergence of a shift in the emphasis of educational psychology. Their curriculum, however, had neglected to take account of "the difference between children, their varied aptitudes, sentiments and inclinations."[3] The curriculum should reflect these factors, if necessary at the price of diluting the predominantly 'intellectual' secondary course. The modern schools had already begun to reveal the deficiencies of secondary schools.[4] The latter had maintained "the idea of a liberal education which corresponds neither to the circumstances of the pupils nor to the needs of modern civilization,"[5] and for this, as a group, they were roundly condemned.

The Consultative Committee conducted its own review of the secondary curriculum drawing heavily upon the advice of co-opted members. The most influential was Sir Percy Nunn who was entrusted with enunciating 'The Principles of the Curriculum.'[6] His reputation had been built upon the success of Education: Its Data and First Principles, (1920), regarded by contemporaries as the

"outstanding book of the period .. a philosophical treatise."[7] His views had already found expression in the Hadow Report and were substantially repeated in the Spens Report.[8]

Nunn gave popular expression to the child-centred view of education. The purpose of the school, accordingly, was to assist "every boy and girl to achieve the highest degree of individual development." In the later stages of the school course this could be accomplished through

> "studies .. which have a definite bearing on the next stage of their life, whether that be a future occupation or continued education."[9]

Nunn was an idealist. He was silent on the complex problem of how, in practice, the school should reflect society in its curriculum. At any rate, by admitting certain vocational specialisms into the curriculum Nunn was able to overcome two major impediments of academicism, the sterility of content - based learning, and the failure to accommodate practical approaches. For Nunn, pupils who made vocational choices embarked on a liberal education.[10]

The goal, Nunn informed the Consultative Committee, was that the secondary curriculum

> "should be thought of in terms of activity and experience rather than of knowledge to be acquired and facts to be stored."[11]

How was it that these views found such wide acceptance in progressive educational circles? What interpretations were placed on them?

(iii)   "The Lessons of History".[12]

Critics of academicism commonly sought warranty for their views in the past. In this way, the record of

educational development was subjected to a particular
view of history in which vocationalism was driven from
the schoolroom, by a cultural outlook rooted in respect
for the classical tradition.

The exclusion of vocationalism from education was
most eloquently stated by John Dewey who had an especially
partisan historical sense which he directed against the
Greek inheritance in education.

> "Of the segregations of educational values," he
> wrote, ".. that between culture and utility is
> probably the most fundamental. While the
> distinction is often thought to be intrinsic
> and absolute it is really historical and social..
> The problem of education is to do away with the
> dualism.."[13]

Dewey was a live influence on the Consultative
Committee,[14] and his views were representative of a
wider movement which sought to overturn the historic
"antithesis between a technical and a liberal education."

> "The intellect does not work best in a
> vacuum, " asserted the philosopher and
> mathematician A.N. Whitehead, "The
> stimulation of creative impulses requires,
> especially in the case of a child, the quick
> transition to practice."[15]

Whitehead's was the most comprehensive denunciation
on the Greek legacy to Western education. The consequence,
he claimed was the neglect of practical education as a
bridge between thought and experience. Without applications,
he believed there could be no purpose to education.
"If you want to understand anything," he exclaimed,
"make it yourself is a sound rule.."[16]

Criticisms of the classical inheritance were
enthusiastically taken up by R.F. Young (Secretary to the
Consultative Committee) who argued that

> "the ordinary grammar school curriculum up to
> the beginning of the nineteenth century reproduced
> the education in rhetoric described by Quintilian

and inherited by the Western Church from
the Roman Empire."[17]

The curriculum had become progressively less relevant
to the needs of pupils. Nevertheless academicism
had tenaciously maintained its hold by a combination
of social prestige and the demands of the universities.
Departures from tradition, the Dissenting Academies or
the introduction of modern subjects into the grammar school
curriculum in the early nineteenth century, could not
be sustained in the face of attacks on vocationalism as
improper to the education of a gentleman. This outlook
hardened as the century advanced and was accelerated by
the revival in the fortunes of the public schools.[18]

So, it was alleged, practical education was subverted
by academicism which was hostile towards 'useful'
education. The situation did not improve. Particular
emphasis was placed on the undifferentiated growth of
secondary and technical education in schools from the
1880s, which was arrested by the early twentieth century.
Vocational education was diverted instead into the newly
established and specially designated junior technical
schools. These institutions were administered under
less favourable conditions than secondary schools,
and were defined in terms of instrumental purposes.
The period between 1895 (Bryce) and 1913 (Regulations
for Junior Technical Schools) was therefore accorded a
special significance as marking a series of turning
points in the struggle for advantage over the conception
of the secondary education.

The separation of technical and secondary
education was welcomed by leading educationalists who

regarded it as premature vocationalism.[19] But to

R.F. Young, the measures announced between 1904 and 1913

progressively reversed   the tradition of secondary

technical education which had found support in the   .

Bryce Report. But it is doubtful whether any of the late

nineteenth century demands for improved technical

education possessed the coherence ascribed to them.

For Young, there was little doubt that the 1904

Regulations for Secondary Schools standardized and

defined the curriculum for ill. This will not bear

scrutiny.[20] Nevertheless, Young was repeating

contemporary wisdom when he charged that

> "..the new Regulations failed to take
> account of the comparatively rich experience of
> secondary curricula of a practical and quasi-
> vocational type which had been evolved.. An unreal
> and unnecessary division was introduced between
> secondary education and technical education."[21]

Young's account greatly overstates the role and

influence of the Board of Education and its Secretary,

Morant. It also assumed greater attention to method than

the curriculum of organized science schools really

displayed.[22] The contact between technical education

and the secondary curriculum was at an early stage.

It was characterized by the association of 'practical'

and 'general' subjects.[23]

But for Young the task was to take forward the

recommendations of the Bryce Report. The Consultative

Committee had collated good practice in endorsing

'practical' education in re-organized senior schools in

1926. But there was a hiatus with the exclusion of

vocational education from the secondary schools. The

Spens Report sought to redress this, unconscious of

the contradiction between secondary technical education
and the creation of a new group of institutions - the
'Technical High Schools'.

(iv) <u>Cultural Determinants of the School Curriculum</u>. .

It was not lost on contemporaries that the content
of traditional school subjects had undergone great
changes.[24] This was easier to effect than the introduction
of new subjects, especially if they were associated
with utility. Practical education, in these years, appeared
as a series of "discrete responses",[25] notably in the
junior technical schools and senior schools.

This fragmentation had its origins in particular
cultural assumptions - "sociological determination" -[26]
which had shaped prevailing attitudes against vocationalism.
Once the relationship between social factors and
educational policy was understood, it would be possible.
to oppose customary practices by a 'right' sociology.
Clarke was a principal representative of this point of
view. He was particularly indebted to Karl Mannheim
in framing his ideas. Their speculations were coloured
by a moral earnestness and idealism. Their belief in
the power of ideas to alter practices now seems
excessive.

Clarke's idealism led him to suppose that the
education system was nothing less than a means of
re-shaping industrial society. He alleged that the
Industrial Revolution had opened up a "vast gulf..
between work and life"[27] as a result of the division of
labour, alienating workers from their products. He cast
his argument in moral terms,

"the waste and misdirection of spiritual
energy .. and the meagre opportunities of
self-fulfilment which it offers"

It was idle, however, to tinker at the margins of the

educational system by the establishment of special

vocational schools. 'Culture' and 'vocation' could

only be re-united if school and industry were

"taken up into the same system, an
educative system."28

Technical education was a means of fusing education

with vocation, industry with the schools, and relevance

with permanent values. It was not a special form of

education, nor concerned with particular subjects, nor

an adjunct to cultural education. Inasmuch as its

concerns were modern, its subject matter could be based

on the relationships between science and society.

Both Clarke and Mannheim were elitists. Mannheim's

object was the creation, by means of education, of a

disinterested cadre that would lead society. The

emergence of such a group had been suppressed by

"prevailing academic teaching".29 He seems to have

envisaged the development of schooling along the lines

advocated by Dewey.30

Behind this philosophy was a particular set of

educational values. Humanistic education was of

greatest worth. Without it, schooling was bereft of

leading principle and would

"tend to transform everything into terms of
vocational training and adjustment to an
industrial order."31

In a modern school course the problem was to inform

science with an awareness of its social consequences.

This could be achieved by making science conscious of its

history.[32] The emphasis on the social context of
science found expression in many technical schools. In
this scheme science subjects were complemented by
courses in the history of science, usually in the sixth
form. Leading schools, like Gateway Boys' School
adopted this approach. For many educationalists, meanwhile,
non-technical subjects particularly history were central
to the curriculum. The disposition of subjects was a
matter of central importance. The next section will discuss
two models that emerged.

(v) Association or Integration: The Range of Contemporary Opinion.

There was disagreement about the disposition and
relationship between subjects. The issues are still in
the process of elucidation and negotiation. Two general
positions may be identified, not rigid and not exclusive
but helpful in threading a course through the range of
opinion.

The first and earliest may be termed the 'association'
view of secondary technical education. This was
conditioned by the concept of a balanced timetable. In
its most basic expression technical subjects were admitted
to the curriculum in instrumental guise and liberalized
by association with subjects that possessed more
permanent value, notably the humanities.

The other position, the 'integrated' view took as
a guiding principle the belief that the educational
worth of a subject was not dependent on a certain subject
matter. All subjects were capable of liberal interpretation
so long as they were related to their wider contexts.
'Vocational' subjects were as amenable to a discussion
of human purposes and the elucidation of general principles

as the humanities or pure science.

The curriculum of the technical schools displayed greater evidence of the 'association' of subjects. 'Integration' of the curriculum by means of vocationalism, however, was for many the ideal. These positions will be examined by brief case studies of educational opinion.

From Magnus onwards educationalists had stressed that the later school course should take account of "interest" and "training".[33] In the 1920s demands for the inclusion of practical subjects on educational grounds were better received, especially in senior schools. Contemporary opinions, however, were by no means agreed about the value of vocationalism as the principle of curriculum reform.

One of the most influential statements of the illiberal nature of vocational education is contained in the Final Report of the Ministry of Reconstruction Adult Education Committee, (1919). In express disregard of its terms of reference the Committee examined the conditions under which technical education could be made liberal. It expressed very clearly the 'association' view of vocational education. The subject content of a course determined its nature. A course made up of technical subjects was not liberal. It could only be made so by the addition of literary and humane subjects.

The chapter on technical education is an extraordinary compilation. High-minded, romantic, nostalgic about apprenticeship and craft skills, it urged the extension of the benefits of humane culture as widely as possible. It is, in fact a tract against the liberal purposes of

practical education.[34]

The object of technical education, the Report insisted was to improve the efficiency of industry. It was doubtful, therefore, whether it could be compatible with secondary education. This limited view of vocationalism, determined by industry, imprisoned teacher and learner within narrow and illiberal parameters.

In order to make technical education liberal "pure science" must replace "specific branches of application." It should be complemented by some treatment of the economic background to industry. Furthermore, it was

> "essential that the technical student should pursue studies but remotely connected with his vocational training" in order to develop "the other sides of his nature."[35]

By contrast vocation and education were reconciled by Percy Nunn and Benchara Branford. They represent (in varying degrees) the 'integrated' view of technical education. It is relevant that Nunn, in common with many others, stressed the importance of vocation and activity as justifications for practical education and not science. As such technical education, exemplified by the technical high school, was a species of the genus practical education in an advanced form. Nunn and Branford had little interest in the evolution of the curriculum or the cultural determinants of educational practice. Their guiding principles were derived from the precepts of educational psychology, especially individual aptitudes. To this must be added a more nebulous belief in 'moral' development through handwork, which legitimized the induction of the pupil into certain vocational traditions.

Nunn was the most well-known representative of the school of thought which held that the grounds of separation between liberal education and training were not the subjects of instruction but the approach to the material. It was possible, therefore, for a technical education to be liberal. Nunn's division between a proper and improper vocationalism in the classroom bears the stamp of moral certitude. In this way, he implied a greater worth to traditional craft and engineering specialisms over others in the secondary curriculum. In his methods he drew heavily on Dewey.

> "The school," he wrote, "must be thought of primarily .. as a place where the young are disciplined in certain forms of activity - namely those that are of the greatest and most permanent significance in the wider world.."36

Nunn's belief in the balance between groups of related subjects meant that he accepted the division of the curriculum into "subjects." He pointed out, however, that the pupil must be as free as possible to choose the course of study.37 He relied on the mechanisms of school life, the pupils' instincts, as well as the spur of employment to help the learner determine a proper balance of study. The process was infused with moral purpose:

> "there would be in school life as a whole a sincerity, a vigour a dignity, that are hardly attainable under the authoritarian tradition."38

Benchara Branford (a friend of Nunn) was an Inspector at the L.C.C. and the author of a remarkable book, Janus and Vesta, (1916). One chapter 'Science and Occupation' is of interest here. Among his gnomic prescriptions was a view of the school curriculum that

explicitly conferred vocationalism with liberal educational purposes.

Science, according to Branford, derived its meaning from the application of natural laws to meet social needs. Science itself had its origin in vocational activity.

> "thinking about the principles of .. work..
> in a clear, logical and systematic way.."

It was verified by "the test of experiment", and he argued that "the so-called sciences are the written record of such thinking." This discovery was a creed.

> "The world without as occupation and the
> world within as science perpetually beget
> each other."

'Science' arose from "the experience gathered by man from one or other of his numerous occupations."[40] It was the task of schools to develop 'scientific' awareness in pupils arising from the consideration of vocationally determined problems. Scientific principles could be derived from technology. This argument represented the most radical expression of the integrating power of vocation in the curriculum.

(vi)   <u>Encouragement from Abroad: Lessons from America and Germany</u>.

Evidence of good practice abroad influenced indigenous thinking about vocational education. It was adapted to British circumstances. Sometimes, like Dewey's 'activity school', it lent support to educational justifications for practical education. Other points of view emphasized instrumental purposes. Kerschensteiner, for example, was widely read. His ideas found ready acceptance among politicians and the technical institutions.

The effect was to raise consciousness about the cultural assumptions framing school practices. The

Spens Report cited with approval American support for vocationalism,[41] noting particularly the views of the expatriate Issac Kandel who declared that,

> "subjects can have meaning only as they are treated as aspects of active and living human experience."[42]

Above all, Dewey was an enormous influence on both sides of the Atlantic. It even seemed that the harmony between vocation and schooling had sometimes been achieved in some American High Schools.[43]

Harold Rugg's, The Great Technology, (New York 1933), encapsulated the leading themes of this critique of academicism. He was outraged by the waste of talent and loss of skills among the workforce as a result of economic depression. He saw education as a means of social reconstruction. The curriculum should be

> "built around the problems and modes of living in the present."[44]

Rugg's view was that vocationalism was essential to all schools if they were to prepare pupils for a society dominated by the consequences of technological advance. Society itself would be transformed. Because the school was the microcosm of society "scientific determination" of goods and "socially useful" services would replace the prevailing anarchy. Talents formed in the schools would be liberated so that creativity would find its outlet in constructive employment.[45]

At a folk level German education was greatly respected. Georg Kerschensteiner's, The Idea of the Industrial School, (1913), was widely read in Britain and America. He was a favourite authority among Liberal politicians. The technical institutions also had an

affinity with his ideas.[46] They were attractive to these groups because he stressed the instrumental value of technical education, combining it with a somewhat mechanistic educational rationale. Shorn of their particular philosophical contexts,[47] Kerschensteiner's ideas also proved congenial because he had applied them to the Munich school system where practical education found a place in all schools. He was particularly interested in changing science teaching from "the verbalism, memorizing and the writing of paradigms" by compelling pupils to be "more active."[48] But he argued that all subjects could be treated in an appropriately practical. manner.[49]

Kerschensteiner's arguments, moreover, were resolved in institutional forms that found considerable support. He believed vocational training should begin in a rigorously differentiated system of post-Elementary institutions "in which children would be grouped according to their future vocation."[50] Interestingly, rigidity of organizational structure existed alongside an integrated view of the curriculum as determined by vocation. He made explicit a formulation which was never entirely clear in Britain. The curriculum he insisted was not subject to a notional balance between subjects. Every 'subject' was of equal worth and its content determined by vocational interest.

(vii) Conclusion.

Discussions about vocationalism in these years greatly conditioned attempts to 'work out' the practical curriculum in secondary technical schools. Practical

subjects found their way into the school curriculum
on the grounds of usefulness. This view found
expression in the junior technical schools whose courses
had been defined as frankly instrumental in nature. The
ideas presented here offered, in varying degrees,
educational justifications for vocationalism. There
were continuities enough in outlook to maintain the
pertinence of these ideas. In seeking to give effect to
them the technical schools drew on their strengths and
replicated some of their weaknesses. These continuities
help explain the apparent hiatus in discussions about
the educational value of vocationalism. Attention to
propaganda and to the method of delivery characterized
later discussions.

From the 1880s practical subjects had found their
way into the secondary curriculum. But they lacked
settled procedure or a coherent rationale. The
educational justifications for vocationalism followed,
and methods were consciously refined in schools after
1944.

The critics discussed here represent a personal
choice. They were chosen because of the clarity of their
influence. What they do not possess is a common outlook.
They are not a group united by a single conception of
vocationalism. Agreed on the need for a less academic
curriculum they were separated from each other by their
premises, and sometimes by personal animosity. Nonetheless,
their collective influence was considerable.

In this broad church it was possible to hold
widely different views about the means of accomplishing

their common aim, to introduce vocationalism into
the curriculum. In time, the bases of the arguments
presented here became untenable. Instrumental
justifications could not be sustained in the face of
universal secondary education. Others were inscrutable.
Clarke's evangelism, for example, was meaningless for
many who thought they shared his outlook.

The divisions suggested here are an attempt to
impose order on contemporary opinions. They are not
exclusive categories. Accounts of the historic evolution
of the curriculum fortified the conviction that
academicism had subverted practical education. Academicism
itself was an expression of a cultural outlook unfriendly
to vocationalism. Foreign opinions, meanwhile, were
sought out to justify indigenous beliefs. The contribution
of practical education to the development of personality,
a moral argument justified by psychological principles
proved especially compelling.

It was in framing answers to a host of questions
about the 'delivery' of vocationalism that differences
of outlook became most apparent. At the time,
senior schools, junior technical schools and the ideal
of the technical high school (which expressed social as
well as educational ambitions) were institutional examples
of vocational education. Their respective courses show
there were differences of outlook on when practical
education should begin, who it was most appropriate for
and what it should include. The disposition of the
curriculum was a matter of further dispute. Most
commonly, the curriculum was typified by the association
of groups of self-contained subjects. Towards the end

of the period an integrated model of the curriculum was
emerging which did not distinguish between groups of subjects
"labelled respectively 'vocational' and 'cultural'".[51]
The working out was a matter for the secondary technical
schools.

CHAPTER 10

Curriculum Policies for Secondary Technical Education:
    1944-1965: Problems of Identity and Practice.

(i)   Introduction

The secondary technical schools built on educational
foundations laid between the wars.   Criticisms of
academicism had resulted in making more explicit the case
for practical education.   The Spens Report was the charter
for the institutional development of the schools.[1]
Increasingly, practical education found a place in
the curriculum of all secondary schools.   It was not,
however, able to command the respect of academic education.
The technical schools, meanwhile, were not able to formulate
an agreed set of curriculum policies.

This account of the curriculum is based on two
principal sources.   Printed material on the technical
schools is far more plentiful after 1944.   Journals
like Vocational Aspect and The Journal of Education,
as well as more ephemeral sources like the Times
Educational Supplement record many attempts to give
effect to practical education.   The technical schools
themselves achieved a degree of institutional contact
through the Association of Heads of Secondary Technical
Schools (AHSTS), that had been beyond the reach of the
junior technical schools.   The Association's records
form the other major source on which this account is
based.

Specialization, and the anxieties it engendered are
briefly discussed.   This is followed by an examination
of the principal determinants of the curriculum; content,

teaching methods and assesment. Reference is made to

institutional practices, mainly taken from three

contrasting Technical High Schools, Cray Valley,

Doncaster and Gateway, to exemplify key issues.

(ii)   Objectives and Contexts.

Discussion about implementing the 'liberal'

vocational curriculum became more prominent as instrumental

justifications receded. The logic of separate selective

institutions meant that the technical schools were

intended to challenge the academicism of the grammar

school course.

Outcomes at least became clearer. The technical

schools after 1944 aimed to reconcile vocation and

education in a secondary course that would:

(1) relate learning to the world of work in a course of

study integrated by vocational interest.

(2) unite head and hand, that is, provide a liberal

education which made use of practical methods to promote

intellectual development and liberate the creative energies

of pupils.

(3) combat the 'wastage' that resulted from dissatisfaction

with traditional approaches, thereby contributing to

national regeneration by meeting the need for scientific

manpower.

The most assiduous projection of vocationalism in

the 1950s and early 1960s was by the Association of Heads

of Secondary Technical Schools (AHSTS). In fact, only

a minority of technical schools gave effect to its

ideals. The AHSTS itself never included as many as half

the heads of technical schools. Throughout its existence

the Association's energies were absorbed by publicity and lobbying, leaving little time for detailed examination of the curriculum. It would have been hard in any case to seek to establish unanimity among the heads. They were more united by external threats than a coherent set of policies for the schools. The integrated vocational curriculum proved elusive. The curriculum of most schools was typified by the association of discrete subjects, in which practical subjects were more in evidence than in most other secondary schools. A number of schools (particularly in London) continued as pre-employment institutions. Others could not resist the embrace of external examinations which seldom made concessions to practical education.

In any case, good practices in vocational education were to be found in all types of secondary schools. The legacy of the technical schools was slight, although particular individuals associated with them, like Edward Semper, played an important part in keeping the issues alive.[2]

In seeking to follow the blueprint of the 'Technical High School' the technical schools emphasized science subjects. The promise was to make use of practical approaches in the classroom and workshop to bring about technological awareness in pupils -

"a disciplined process using scientific material and human resources to achieve human purpose."[3]

This was the basis of a liberal education through vocational interests, modern concerns, and the integration of subjects. Its benefits were even made in moral terms,[4] reminiscent of Clarke and Nunn.

The difficulty was that technical education appeared in many guises, making its precise nature a matter of dispute, if not obscurity. A number of terms were used interchangeably and in a variety of contexts, not . always clearly specified, as defining characteristics of a secondary technical education. Simultaneously, technical education retained about it associations with 'special training' in place of a proper 'cultural' education.

Illiberal connotations of technical education continued to overshadow the case for vocationalism. These arguments arose in discussions about specialization in the curriculum and were regularly aired in the educational press.

It was at the sixth form level that differences of opinion over special vs. general education were most clearly stated. The sixth form curriculum was a battle-ground in the early 1950s as disquiet grew over the specialization demanded of candidates for scholarships in science at universities. There were complaints that grammar schools already produced "too many clever dicks,"[5] whose education was narrow and illiberal. Critics, including science teachers, argued that much that passed as school science was scarcely an education at all, but merely "a training in the physical sciences."[6] Only a proper balance of subjects, which always included the humanities, could ensure a liberal secondary education.

This meant that the curriculum of technical schools could not be educational on 'a priori' grounds.

Vocationalism attracted the charge of 'special training'. Science could be a part of a liberal course but could not provide such an education on its own.[7] Science teachers were sensitive to the charges of excessive specialization and lack of 'culture'. Remedies were usually along the lines that science must be complemented by other subjects, including the history of science, and should encourage the consideration of scientific method.[8]

In this way, the humanities would act as a leaven on vocational courses. Technical education, argued Boris Ford, could be broadened only so far after which it was necessary to include "a certain measure of liberal non-vocational study."[9] This was because technical education did not acknowledge "historical development .. social context .. value or purpose,"[10] an argument which echoed the conclusions of the Adult Education Committee in 1919. For this reason, Graham Savage was condemned for thinking that a liberal education could be scientific alone.[11] Rather, it was composed of an association of discrete subjects, the content of each being independently defined.

Against this background, presentation of the case for a 'liberal' technical education often took a combative form. Specialization was made a virtue, and "so called cultural courses" attacked for neglecting "the student's interests." Far from having a narrowing effect it would promote understanding of "the culture of the subject."[12] Specialization was ill-conceived only when it was "imperfectly related to.. context."[13]

But science as the basis of a liberal secondary education had more than one interpretation. Serious

differences arose between 'academic' and 'technical' versions of science education, both of which were avowedly specialized.

E.B. Castle, for instance, reasoned that at its best, science was as much concerned with human purpose as any other subject. His views, however, lacked a settled procedure. He relied on the teachers' ability to relate laboratory observations ('applied' science) to the history and uses of science.[14] Critics aptly dubbed this "the doctrine of the 'brilliant aside."[15]

The case for technology as the focus of a liberal education was made in terms of the benefits of specialization. "We must work from within out," counselled Alex Ross, "we must begin with technology itself.."[16] Technology must be made pupil centered and determined by interest. The pupils' abilities would be stimulated by the use of activity and discovery methods in vocational settings. The test of success was the extent to which special interests were related to other knowledge and the concerns of society.

(iii) *The Content of the Curriculum*.

It became progressively less acceptable to limit the content of subjects in deference to the pre-employment functions of technical schools.[17] There was a general opinion that the curriculum, at least until the sixth form, should embrace a wide range of subjects.[18] This view was accepted by the AHSTS, striving to emulate the freedoms enjoyed by other secondary schools, such as age of entry and length of course.

The technical school curriculum was regarded as

specialized but not unbalanced.[19] It was noted that
the technical high schools were approaching "closer and
closer to the grammar school"[20] in the content of their
curriculum. They had not abandoned vocationalism
itself but its instrumental aspects. The whole range
of conventional school subjects were represented, but they
were conditioned by vocational interests.

The degree of specialization varied widely between
institutions. Some headmasters insisted that boys should
be inducted into the ethos of technical education from
their first days at school.[21] Others argued that the
"necessary background of culture" required that the
early years of the course should resemble in content that
of the grammar school, with a greater emphasis on craft
and the exclusion of a second foreign language.
Vocationalism should be gradually introduced from the
third year onwards by way of out of school activities.
Specialization was not permitted before the fifth year.
The curriculum was made up by the association of "academic",
"cultural" and "craft" subjects.[22] At Doncaster, the problems
of delayed specialization obliged Edward Semper to reappraise
craftwork in the lower school, after disappointing
early results with sixth form project work. A problem
solving approach was encouraged through the design and
construction of simple working models which were tested
for purpose as part of the 'O' level course in the
'Application of Physics.'[23]

Specialization was a matter determined within
institutions. But it was only a starting point for
variety between the content of the curriculum between

schools. There were powerful external determinants which shaped the curriculum. These included traditions, accommodation, admission, selection, relationships to other secondary schools, cognisance of educational theory, ideas about gender and changing attitudes towards practical education. Singly or in some combination these factors conditioned the content of courses.

Secondary status witnessed the beginning of the slow disengagement of the technical schools from the technical colleges. This had the effect of freeing their curriculum from domination by the senior institutions. an influence which had sometimes been as distorting as external examinations.[24] As late as 1952, two-thirds of technical schools were still housed in colleges.[25] Subsequently, the Crowther Report revealed that a third of schools continued to receive pupils at 13, and that sixth forms were poorly developed. Although almost half the technical schools had sixth forms, the average size was only 21, a global figure distorted by the fact that only 15 schools had sixth forms with more than 15 pupils. The proportion of pupils taking more than 2 'A' levels ranged from 43% of girls to 70% of boys. On the whole these figures compared unfavourably with a sample of corresponding grammar schools.[26] A straw poll of AHSTS members showed that their schools were better than average, with more than half receiving pupils at 11.[27]

The curriculum of Gateway School was liberated from the influence of the technical college after Dr. Frazer became headmaster in 1952.[28] At Doncaster, the technical high school was not housed in its own buildings until 1957, despite considerable support for practical education

by the Chief Education Officer, Hoskin.[29] At Cray
Valley, meanwhile, the school was set up in the buildings
of a former grammar school as part of the Kent LEAs
forward policy on separate technical schools.[30] The
corporate nature of technical schools after 1944 meant
they were more able to resist demands from technical
colleges. Even so, most schools were not as fortunate
as the above, and were limited by inadequate facilities.[31]

The curriculum of technical schools was strongly
conditioned by selection. The AHSTS endorsed the
'Technical High School.'[32] The prestige of certain
schools was such that their intake was similar to
local grammar schools. The ambition to increase the
selectivity of the technical schools was limited because
so many continued to receive pupils at 13. There was a
well-founded belief that modern schools were reluctant
to transfer their most promising pupils at 13,[33] and that
grammar schools only passed on their less succesful pupils.
Although it was the Ministry's policy between 1944 and
1956 that technical schools should receive their pupils
at 11, and keep them until the sixth form, the schools
evinced a chaotic pattern of admission and length of
course.[34]

It was only when the days of separate technical
schools were clearly numbered that members of the AHSTS,
like Edward Semper, became more diffusionist about
the institutional development of practical education.[35]
He had for long argued the schools should make curriculum
development their rationale and reject training
conceptions of technical education.[36] He recognized that
many grammar schools were emulating technical high schools

in their approach to science education.[37] In the light
of the Crowther Report he demanded a programme of
research and planning to co-ordinate the variety of
curriculum initiatives in the field,[38] and insisted that
an 'Alternative Road' could be constructed for pupils of
all abilities.[39]

During the 1950s, the separatist, selective case
for Technical High Schools was forcefully advocated
by individuals like Dr. Frazer,[40] and endorsed by
the AHSTS as late as 1960, in the wake of the Crowther
Report.[41] Frazer stood on that wing of the Association
which held anti-grammar school views,[42] often a more
powerful bond between members than a unified conception
of secondary technical education.

The need for selectivity had been a major point in
the Association's submission to the Central Advisory
Council for Education (England).[43] Gateway School
declared it provided "a more than academic education to
boys of more than average calibre."[44] Kingsland's
assertion that a "majority" of pupils could benefit from
a curriculum in which "the challenge of problems and
situations .. appear .. real and purposeful .."[45] must
be set alongside the fact that pupils in his school were
drawn from the ablest quarter of each age group. It
meant that the subject matter of these technical schools
most consciously developed in the sixth form was applicable
to a minority of secondary pupils.

As for methods of selection there is little evidence
for the use of special entry tests. The junior technical
schools had admitted pupils at 13 on the results of an
examination which did not include intelligence or aptitude

tests.[46] Cray Valley Technical High School looked at
ability in the round, and held that an interest in
mathematics was desirable   Stereotyped formulations
were still to be encountered. Frazer, for example,
accepted the weakness of Norwood's categories of pupils,[47]
but reformulated the 'types' as a common sense guide to
school admissions.[48]

The orientation of courses was a direct legacy from
the junior technical schools. Specialisms tended to
appear later than had been the case, and they were
described as 'biases'. In boys' schools the "central
importance" of craft and technical subjects were
justified because they helped promote personal development
through handwork.[49] John Kingsland at Cray Valley saw
the task of the technical schools as taking forward the
"sense of reality"[50] of junior technical school courses
into liberal secondary education.

In most technical high schools selective admissions,
examination pressures and changing demands from the
professional institutions altered the character of the
traditional engineering courses. The decline in
engineering drawing in schools was held to be a direct
consequence of increasing purity of outlook by the
engineering institutions, as well as the demands of the
scientific civil service.[51] In general, it appeared that
technical school courses were more technological than
craft based, and their content more theoretical than
practical compared to their junior technical predecessors.[52]
They included a narrower range of 'biases'. Construction,
for example, where it survived was rarely concerned with

"craft" approaches but with "scientific aspects of building."[53] The great variety of the schools meant that junior technical school "craft apprenticeship" courses survived in those institutions which lacked advanced courses and retained local emphases. They continued to be intensely work related, and included the learning of particular skills, like engineering drawing, and introduced pupils to machine shop and foundry work.[54]

The specialized nature of technical school courses had important consequences for the content of non-technical subjects. The extent to which practical education operated through subjects not evidently technical was a test of the integration of the curriculum.

If the claims of teachers are taken at face value every subject served vocational purposes. In fact, the growing importance of external examinations, and the traditional retardation of non-technical subjects in junior technical schools means this assertion must be qualified. Despite the claims made for the imaginative integration of non-technical subjects in practical education, the correlation between subjects was an ideal which fell short of achievement in the schools.

Nevertheless, for many critics of academicism this task was at least as important as the practical approaches to craft and science education pioneered in technical schools.[55] Unless the content of all subjects was adapted to "the major interests of the pupils"[56] the curriculum would be disjointed and lacking in any overall purpose. Accordingly, curriculum revision in this area was a matter of the first importance.

The revision of traditional subjects was carried

furthest in English in girls' technical schools, where
the science curriculum was least developed. Communication
was "the life blood"[57] of courses like domestic science
and commerce, which depended on the comprehension of
detailed instructions. In boys' schools, practical
communication was less developed. English lessons
were used to illustrate the literature of science and
engineering, as well as understanding of technical accounts,
and promote the lucid expression of experimental
results.[58]

History was sometimes given pride of place in the
curriculum because of the insights it provided into the
evolution of industrial society. Some schools developed
history courses in which the content was determined by
the nature of the institution's specialism. At Worksop
Technical High School, a boy electing to specialize in
building would find himself examining particular
techniques through the study of Corinthian capitals
and Norman keeps. This was part of a course in which a
"general" element was supplied by a treatment of the
interplay between technology and society by means of
a thematic discussion of agriculture, communications or
medicine.[59] Both parts of the course were intended to
complement the acquisition of craft skills by raising
issues about vocation and society, and the effects of
technology.

The study of foreign languages, (prior to 1951
a defining characteristic of the secondary curriculum),
posed considerable problems for technical schools. With
few exceptions,[60] even when practical usage (direct
communication, reading specialist literature) was

stressed, it proved difficult to devise language courses thatcommanded the interest of pupils. For many, languages only had point in terms of G.C.E. success as a step towards professional qualification.[61]

A considerable gap in the technical curriculum was the neglect of girls. They were usually excluded from engineering and related courses. Their place always remained obscure, and even the Spens Report had little to offer in this respect.[62] Pre-employment functions remained paramount. The curriculum itself was divided between 'general' and 'vocational' subjects.[63] Much time continued to be spent on the acquisition of work-related skills, taught by apprentice trained staff.[64] In some schools, placement of girls was left to "trade mistresses" so that external validation of courses was of little importance.[65] These essentially trade school characteristics were much in evidence, especially in London.[66]

Practical education for girls lacked projection because it lacked a forum for discussion. Women heads in the AHSTS deferred to the domination of the Association by 'male' concerns, apologizing for their presence.[67] This was because, with some exceptions,[68] technical education for girls was not usually scientific. The most influential view of practical education for girls was that of the trade school, or which posited courses based on occupational differences related to gender. Girls were not regarded as being likely in view of the reluctance of employers to engage women in supervisory scientific posts, to find themselves directing scientific operations. Girls' schools,

moreover, had considerable difficulty in attracting science teachers and possessed limited laboratory accommodation.

Beyond these constraints, a pervasive ethic dictated that girls should regard vocation as an extension of "natural instinct" as future wives and mothers.[69] This view was sedulously propagated by headmistresses who argued in favour of 'general' courses, accompanied by vocational training for careers as nurses, secretaries, typists, laboratory assistants and primary school teachers.[70] The Crowther Report had the effect of reviving the question of technical education for girls,[71] as did the tendency of girls to remain at school beyond 16. But housecraft, commerce and needlework remained the most important 'biases' in girls schools. In mixed schools they were usually timetabled against metalwork and woodwork.[72] Where science was offered it was generally biology. The girls' technical high school at Doncaster only introduced chemistry thoughout the school in 1958, and did not offer physics at all. Technology was regarded as a career for boys.[73]

A considerable limiting factor in the projection of secondary technical education was its association with premature vocationalism in which content was determined by the requirements of a trade or industry. Trade schools, which had been the preferred development of the Board of Education in the 1930s, received only qualified approval in the Spens Report, and were abandoned in conception after 1944.

Yet schools of this type continued to survive and condition views of technical education. Some were

scarcely changed. The AHSTS sought to dissociate itself from this aspect of the past. Nonetheless, heads of trade schools were members of the association. The Mary Boon School at Shepherds Bush continued to maintain "close contacts with the relevant trades." Girls were entered for City and Guilds Examinations, but staff preferred to place pupils informally through their contacts with employers.[74] At 16 girls were "receiving almost full-time technical education."[75] Counterparts could be found among boys' schools. The school at Dudley was an almost untouched specimen of a junior technical school.[76] Woolwich (Polytechnic) Secondary School divided third year pupils into 'engineers' or 'builders' who began to specialize in engineering technical drawing, technical drawing and metalwork.[77] The Boys' School of Engineering at Willesden was organized "on much the same lines as the junior technical schools." Its curriculum did not include a foreign language, and in the fifth form as little as 4 periods a week were allocated to non-technical subjects.[78]

These traditions embarrased the AHSTS. Heads of technical high schools were at pains to point out that "teaching", in their schools at least, had replaced "instruction".[79] This had an effect on the content of subjects which became more theoretical, increasingly scientific and formal. "Not an engineering shop," explained one headmaster defensively, "metalwork craft room."[80] Craft subjects were not able to command the same esteem as scientific subjects. Moreover, the painful fact remained that much craft teaching was not well-related to the rest of the curriculum.[81]

Practical education was not restricted to technical schools. It meant that the content of their courses was defined in terms of the 'space' they were allocated in local school organization. It also reinforced the selective outlook as they sought to maintain a separate existence on the grounds that they were pathfinding institutions.

The growth of practical education in all schools was welcomed as a vindication of local conceptions about secondary organization and the content of courses.[82] The result was to make the contribution of technical schools less distinctive.

Butler himself had private reservations about the ability of modern schools to frame an appropriate curriculum for pupils.[83] He was an early supporter of bilateral technical-modern schools. The White Paper on Educational Reconstruction (1943) had merely expressed the view that modern schools would provide a 'general' education. A decade later vocationalism was well-advanced, and pupils were also being entered for the G.C.E., and proceeding to technical colleges.[84]

The inclusion of practical subjects in modern schools originated from the need to develop suitable courses for older pupils. The appeal of vocationalism was many-sided.[85] It was an introduction to work, as well as being an aid to discipline, and was regarded as particularly appropriate for working class boys.[86] Practical education was also commended for the less able,[87] and sometimes as a means of realizing the potential of pupils cooled out by academic approaches.[88]

The tripartite system had been attacked from its

inception because of its faulty psychological basis. It imposed artificial restrictions on the curriculum of modern schools. Middlesex had rejected technical schools on these grounds. Cheshire actively promoted 'alternative courses' in modern schools.[89] Technical schools were criticized for impeding their modern school counterparts, forcing technical school heads on to the defensive.[90] The advent of comprehensive schools laid the argument to rest. But already some modern schools had risen above instrumental approaches to technical education, and had gone down the 'Alternative Road' with enthusiasm. Far from remaining "a manly refuge from the effeminacies of academic education",[91] integrated technical courses were becoming more common.[92] Good examination results were obtained with unselected pupils.[93] Increasingly, craft courses came to be regarded as the special preseve of modern schools.[94] Most importantly, their justification was more often made in terms of their contribution to a liberal secondary education.[95]

Grammar Schools were also deeply involved in practical education, an interest which accompanied the growth of science subjects in the sixth form. The "grammar-science- technical" school was canvassed as a means of meeting the need for scientific managers, a demand technical schools with "sweatrag and trade school" associations could not fulfil.[96]

The move from "pure" to "applied" science was welcomed by the IAHM.[97] The grammar-technical school proved congenial whether organized in 'sides' or as an aspect of the diversity of the grammar school. In some cases, grammar schools built on established traditions

of practical education. Elsewhere, it was new. The
result was that 'mixed' schools had arrived and "authorities ..
are happily saying so.."[98]

The case for practical education in grammar schools
was made in instrumental and educational terms.
Engineering subjects appeared as "training" and for the
most part practical education was regarded as a way of
stimulating less able pupils.[99] In some grammar schools,
however, the case for vocationalism was made on educational
grounds as warmly as any designated technical school.[100]

(iv)   Teaching Methods.

Activity methods were the key to teaching in the
technical school. They were child centred, practical
and made use of special interests as a means of promoting
understanding and motivation in pupils.

The form and timing of vocational specialization
met with a variety of responses. There were many, like
Venables, for whom aspects of the junior technical school
tradition remained strong.[101] The emphasis of the
curriculum was determined by local industrial needs.
Teaching methods were determined by the techniques of
each industry. Venables accepted the division between
"general" and "vocational" subjects, and was content for
"professional associations" and "trade institutions" to
determine the "technical studies and activities required
in preparation .. for the major industries."[102]

Venables' belief in the early determination of vocation
was rooted in the "Junior College" idea. He was able to
assume, of course, full employment and a relatively
static occupational structure. His instrumental outlook
was tempered by the hope that an integrated curriculum

would emerge, but he was not clear on how this might be accomplished.

Influential headmasters like John Kingsland also looked back to aspects of the junior technical school inheritance. He saw the technical school perfecting methods of craft education. Craft he wrote:

> "could surely be the starting point for intellectual exploration and discovery. It could give point and purpose to science and mathematics and illuminate both subjects. It could provide material for purposeful talking and writing. It could provide pegs on which a whole course of history and geography could be hung."

Its purpose would be to make a boy consider "why" he was engaged in a particular activity, "while teaching him how."[103] It would be a "liberal" education, "through various forms of 'technology'.. instead of being a passive listener or watcher the boy should be actively creative or inventive."[104] He was not concerned about early beginnings, and boys were inducted into the ethos of vocationalism from their first days at school.

Heads like Edward Semper did not give equal weight to practical subjects throughout the school. The most challenging interpretation of vocational education took place in the sixth form. He was obliged, however, to introduce changes lower down the school to increase the effectiveness of later work. The emphasis was on problem solving through the design and making of working models which were tested for purpose. Like Kingsland he emphasized the creative value -"inventive curiosity" to be derived from practical education.[105]

"Success, Creativity, Stimulus"[106] was the slogan around which the curriculum at Gateway School under

Dr. Frazer was constructed. Practical education, Frazer believed, was an extension of the primary school curriculum. It allowed pupils to express themselves in a realm other than the academic, minimising the possibility of rejection or failure.[107] In the first year at the school, boys were encouraged to model, setting their own standards in creative spontaneous activity.[108]

Activity methods in the technical school encouraged personal observation and made use of the experience gathered by pupils. This was exemplified by project work with its emphasis on applications and workshop experience. For unselected pupils, and with younger pupils, the practical approach was represented by projects in craftwork. Older and more able pupils were directed towards science based courses in engineering. It was an axiom of technical school science that general laws could be deduced from specific practices[109] - science from technology. This owed very little to the methods of the technical colleges and had more in common with methods being simultaneously used in primary and modern schools.[110]

In practice, even the mostconsciously 'vocational' schools fell short of these ideals. For one thing it was difficult to find secondary school teachers who possessed the desired qualities - sympathy with practical approaches, industrial experience and subject knowledge.[111] It was reckoned by headteachers who had experience of both systems that junior technical schools had less difficulty in attracting craft teachers who possessed these abilities. Training college courses no longer reflected

these needs. Grants for mature students were "hopelessly
inadequate" so that intending teachers found it
difficult to contemplate leaving employment. Worst of
all, student teachers regarded the workshop as a "last
resort".[112] Within the schools, moreover, there was a
dissonance between ideal and practice. At Gateway School,
the curriculum did not integrate subjects and methods
behind its stated aims. Doncaster Technical High School
reserved the most interesting approaches for sixth form
pupils. At Cray Valley, which did attempt an 'all through'
practical education, the subject matter did not always
lend itself to the development of generic skills, so that
discontinuities between the lower and upper school course
were apparent.

Despite the ideals of its headmaster and the excellence
of its facilities, the Gateway curriculum lacked integration.
In spite of the time devoted to art and craft the
subjects were discrete and there is little evidence that
early specialization included a treatment of the purposes
of practical subjects. To overcome this deficiency , the
sixth form course in science was accompanied by a
fissiparous general studies course which included the
history of science. It seems to have encountered a
degree of resistance from boys[113] The approach to
science was not markedly influenced by practical methods.
The school was swift to change to Nuffield courses in
physical science and chemistry to encourage project work,
but in depth projects were rare and conducted apart from
the "main stream of science teaching."[114]

Some of the most important methods of practical education were exemplified at Doncaster Technical High School. The sixth form course included three distinctive elements. General studies, intended to meet the "cultural needs" of pupils occupied one quarter of lesson time. "Scientific investigations" - not laboratory practicals - formed part of the 'A' level course in science. It placed the onus on the pupil who was expected to devise, construct and conduct experiments themselves with a minimum of supervision. "The real science," Semper averred, "begins when things appear to go wrong." Lastly, there were "projects," major pieces of individual work, occupying an afternoon each week for 2 years. They took the pupil to the library, workshop and laboratory as well as outside the school. A testimony to the success of projects and investigations was the evolution of 'A' level courses in engineering design and engineering physics for pupils wishing to go on to HND courses. The design course was intended to be an introduction to problems in mechanical engineering. Pupils were equipped with a knowledge of some of the key concerns of the engineer - strengths and stresses of materials, elements of design and drawing, and the use of tools. It was an introduction to problem solving in engineering where the range of options (though small) were dependent on the answers to a series of questions an engineer might ask.[115]

At Cray Valley, the central importance of the craft course was justified in terms of its appeal to the emotions - "joy of creation" - and for the disciplined approach it fostered. But most importantly, Kingsland felt it was

a means of problem solving, preferably by means of project work. Rather disconcertingly, however, he concluded that progress in this direction was "least developed, yet educationally probably the most valuable and promising.."[116]

The components of the craft course, moreover, cabinet making and engineering (followed sequentially - the former in the lower and middle school gave way to the latter in the upper forms) were subject to important discontinuities and divergencies. The problem solving approach in woodworking was different to engineering. Solutions in woodworking were more open-ended and various. For that reason, design was introduced early in the engineering course, not as a means of problem solving, but to impart a familiarity with production methods, tools and materials. Early work in engineering consisted of "a set course which gives basic skills and experience, and permits only a measure of individual variation."[117] Discovery methods, therefore, did not operate at every level, or with equal application to each subject. At Cray Valley, the more traditional crafts proved more suitable to a problem solving approach.

Problem solving was linked to the deduction of scientific principles from specific observed facts. Edward Semper believed that "scientific principles are deduced from or linked with the performance, construction and design of machines."[118] This opinion was shared by many technical school heads. In practice, the applicability of the approach was open to question. The prior knowledge of pupils, limited resources and

the inaccuracy of experimental data meant that it was not always possible to deduce principles from observed facts. At Sevenoaks School a compromise was reached. The 'Technical Activities Centre' under the direction of Gerd Somerhoff made use of "practical interests" as a means of promoting "theoretical studies in science. Projects were encouraged, but pupils were obliged to "study the elementary principles involved by following a course mapped out for him .."[119] The verification of scientific laws by experiment had a striking resemblance to key aspects of Nuffield science. But because of the insistence on human needs above purely intellectual purposes, the approaches pioneered at Sevenoaks had more in common with the technical schools.

Appropriate teaching methods were required in order to devise and support individual programmes based on the principle of "learning by doing."[120] There were worrying signs, however, that the principle was being eroded under examination pressure, in favour of class teaching and formal experiments. Frazer deplored the move away from workshops to be observed in many schools. He insisted that the use of workshops, laboratories and library must be integrated if the school was to concern itself with "learning rather than with teaching."[121]

In schools which managed to maintain distinctive approaches formal class teaching gave way to individual discovery methods. The teacher acted as guide and mentor. It meant that in place of class instruction, pupils were encouraged to 'find out' for themselves, using libraries and reference books to explain the results of personal observation.

Project work and discovery methods militated against the use of textbooks. The absence of common published material meant that opportunities for the exchange of information and good practices was limited to informal contacts. Schools like Cray Valley minimised dependence on textbooks in favour of practical work and the use of libraries, reference books and material produced within the school. The absence of agreement about approaches to practical education, the small number of schools involved, and the conservatism of publishers[122] meant that no distinctive genre was brought into being.

Nonetheless, a number of books were published which were deemed suitable for technical schools. Books for technical schools it was argued should contain 'plenty of practical applications," like A.J. Whitmarsh's, Technical School Science, (1941), a book intended for use in junior technical schools.[123] The tendency for physics books to devote more space to applications was welcomed. Distinctions were made between 'grammar school physics' and 'technical school physics.' The former was said to be distinguished by an extended treatment of historical development and the latter by an account of machinery and applications. A book like W.G. Davie's, Heat, (1945) was a good example of grammar school physics, while F. Jowett's, Heat and Heat Engines for Technical Schools, (1945) emphasized applications.[124] Chemistry teachers in technical high schools were enjoined to make reference to applications, and to show "interactions" between the development of the subject and its historical and sociological determinants. V.J. Clancy's, Chemistry and the Aeroplane, (1944) was commended as a school book

which managed to integrate its subject matter in this way.[125] Chemistry textbooks were roundly condemned for lack of revision.[126]

At the same time, the legacy of instrumental preparation continued to be refelcted in technical school books. Arithmetic and commercial arithmetic books intended for use in technical schools were criticized by one reviewer as the validation of "arithmetical tricks"[127] aimed at preparing pupils for vocational examinations. Workshop practice was also treated in this way.

G.T. Page's survey, Engineering Among the Schools, (1965), revealed that at bottom, schools interested in applied science or engineering did not really want textbooks, but preferred to use their own material. Much more important for project work were good reference books and library facilities. The "essential point", noted Page, was that textbooks followed examination syllabuses. New texts would only follow new examinations. In any case, the initiative of personal reference was an important part of project work.[128] A charge against English textbooks recorded by Page and others was the inclusion of out of date applications. American texts were much better in this respect.[129]

(v)   Assessment: the Drift to Academicism.

The curriculum required validation in order to fulfil the ambitions of pupils and schools alike. Prior to 1944 the junior technical schools had stood aloof from the School Certificate Examination. This had generally been seen as a strength. Increasingly, however, it became necessary to adopt a stance towards the single subject General Certificate Education (GCE) as a leaving certificate.

The popularity of public examinations increased rapidly in the 1950s. The internal certificates awarded by some schools, whatever their merits, enjoyed little currency outside their localities. The removal of the minimum age for GCE candidates (1951), and the consequent extension of the examination to all secondary schools meant that technical schools could not avoid the issue.

A minority of technical schools rejected external examinations. Others, especially schools represented in the AHSTS, took up the GCE, more or less enthusiastically, arguing that it did not necessarily affect their outlook, yet allowed them to compete with grammar schools. Before 1951, some heads continued to press for internally moderated and externally assessed courses advocated in the Spens Report.[130] The idea found favour with local administrators.[131] The AHSTS itself had been formed at least partly as a response to the exclusion of technical subjects from matriculation requirements.[132] Examiners themselves were perplexed about the relationship between technical schools and the GCE - "relating the new to the non-existent."[133] Technical school headmasters were doubly alarmed by the inception of the Associated Examining Board (AEB), regarding it as an inferior substitute to the university examination boards, designed to cater solely for technical schools.[134]

Some members of the AHSTS maintained their opposition to external examinations. This was marked among the headmistresses of girls' schools. They tended to favour informal measurement of success and shunned the competitiveness of the examination system. They expressed

concern, for example, at the growing insistence on formal

qualifications to obtain entry to training colleges.

It was this pressure which led to the setting up of

sixth forms in girls' schools. Examinations were

regarded by some as being at odds with practical education

because they demanded pupils be filled with "relevant"

facts.[135] The early reluctance to enter girls for a

common examination[136] was a continuing theme,

to the displeasure of those heads in the AHSTS

determined to rival the examination success of grammar

schools.[137] The headmistresses were not alone. Some

male heads stressed that the GCE must not become the

only form of assessment. A.G. Gooch an HMI , meanwhile,

recommended that although the schools must have "some

truck" with the GCE it should only be to meet entry

requirements for employment.[138]

The misgiving among heads like Kingsland that the

GCE played an overly important part in determining the

curriculum[139] seemed amply confirmed. Accepted as "the

cross we had to take up when we left the JTS stage"[140]

some heads felt external examinations had restricted the

content and approaches to practical education.

"The focal point of the secondary technical school

used to be its workshops, but it has moved to its

laboratories and its library," declared Dr. Frazer.[141]

The effects of this transition seemed to be the increasing

academicism of the technical high schools.

> "It was established now," intervened D.G. Gooch at
> the Annual Conference of the AHSTS in 1958, "that
> many technical schools were good schools with high
> academic standards. But they should think more
> about the real purpose of bias in the curriculum.
> It was absurd that in so many schools which
> turned out boys for the engineering industry ..
> no one had thought of experimenting with subjects
> like engineering workshop practice."[142]

There was a real worry that the technical schools
would become "a pale imitation of the grammar school"
offering an examination orientated curriculum that was
"too academic".[143] The advent of the AEB offered some
hope of reversing the trend. But the AHSTS was alienated
from the Board because of assumptions about its low
status, and its admitted lack of teacher representation.
Though individual teachers in technical schools were
active on subject panels, the Board increasingly saw its
role in terms of all secondary schools, and established
a secure foothold in the grammar schools.[144] Thus,
as the AEB grappled with the validation of technical
subjects it did so without the special assistance of
the technical schools. The technical schools, in turn,
preferred local agreements and became the clients of
well-established regional Boards. The concentration
of technical high schools in the North and Midlands
meant that the Northern Universities Joint Matriculation
Board was the most commonly used examining body, with
which special courses, like Engineering Science, were
developed.

Practical education was costly to assess and
demanded new approaches. Examiners pointed to the
great difficulty of successfully assessing science based
practical courses. A.C. Reid, Examiner in Applied Physics
and Engineering Science for the Durham Board envisaged
special examination courses for technical schools to be
restricted to sixth form courses. They would, moreover,
have to be devised with particular reference to each
school, as Doncaster Techincal High School had done
with his own Board.

His preferred method of assessment was an examination

composed of three papers. The first, consisting of a large number of short questions would test the candidates knowledge of basic principles. The second would be based on course work. The third would be an oral examination. He deemed practical examinations unnecessary for technical school pupils. But he was not optimistic about the chances of grading candidates. Though "good passes" could be distinguished from "bad failures", course work assessment made it difficult to estimate the contribution of the pupil as distinct from the school. "It could," he believed, "prove in the event impossible to put a specific assessment on such work," and advised "the correct way of tackling our particular problem would be to follow the course and forget about assessing attainment at 18."[145]

The trend to academicism represented by external examinations was the outcome of a conflict between status and appropriate forms of assessment. Some technical school heads counted success with unselected pupils an appropriate goal.[146] The AHSTS as a body was determined to follow the blueprint outlined in the White Paper on Technical Education (1956). Examinations and sixth forms offering advanced courses became the new orthodoxy in the Association which sought[147] to abrogate the junior technical school inheritance. The President in 1956, H.B. Brown of Birmingham declared the future lay with selective schools which included a sixth form. His own schools had introduced selected GCE streams for about a third of the pupils in each year and had good results, with the exception of English and French. The remainder were prepared for SI exemptions by means of an

internal certificate. "Secondary technical schools,"
he declared, "should not be worrying about the craftsmen.
They should aim at the technologist side.."[148] This
was not so far from the way in which the TES, no friend,
regarded them, as grammar schools with a technical bias,[149]
teaching "applied" instead of "pure" science, with more
"humanities" and less "vocational training."[150]

In mixed ability schools, the GCE was reserved for
the most able, with "a continued examination of practical
skills, offering a low hurdle" for the rest.[151] The
pride of the schools, though, the sixth forms, A.E. Howard
demanded should only offer theoretical courses beyond
'O' level. "Is it necessarily wrong?" he answered critics,
who accused him of "grammarising" the technical school.[152]
The views were well-supported within the AHSTS.[153] External
examinations had come to stay. The result was that
vocational approaches were less in evidence in the
later years of the secondary course.

(vi) Conclusion.

The secondary technical schools had been set up on
the basis of a mechanistic educational rationale.
Practical education was deemed to be appropriate to certain
'types' of pupil - those who found themselves in technical
schools. But practical education had also been a
cardinal objective of the senior schools since the Hadow
Report (1926), and was to be observed in grammar schools
as well. Clearly it was a nonsense to suppose that the
administrative symmetry of 'tripartitism' would be
reflected in the curriculum. Edward Boyle dismissed the
educational foundations of 'tripartitism' as 'Christianized
Platonism.'[154] By the close of the 1950s, the Crowther

Report expressed the educational case for vocationalism, and linked it to the fate of technical schools.

> "Technical schools have not finished their mission," Crowther averred, "because they and the influences that have brought them into being have profoundly affected what many grammar and modern schools do.. there should be a sufficient number of them so distributed throughout the country as to enable their influence to pervade all the schools."[155]

The value of practical education was universal since all pupils would face decisions concerning future occupational roles. Its case was made in terms of the benefits of specialized courses whose nature was determined by the vocational interests of pupils. The schools could offer a liberal preparation to pupils in which personal development was harmonised with the concerns of society.

The universality of practical education was limited by its contextual development. The curriculum of technical schools was determined by the interaction between influences from the past and the circumstances of the present. They crossed a major boundary in 1944. From being considered as pre-employment institutions they were regarded as primarily educational institutions. The change was not accompanied by the support required to enhance the status or define practical education more clearly. The schools were plunged into the system of secondary education carrying the baggage and associations of the past. The secondary curriculum was in the process of rapid re-definition as a result of the coming of universal secondary education. Attempts to impose administrative order on the groundswell of curriculum development by means of 'types' of institutions was a

fragile and inflexible construct. The technical schools were obliged to define, validate and make distinctive their curriculum quickly, and in a situation in which they were in severe competition with other secondary schools, while their institutional foundations remained insecure.

The revival of practical education in the 1920s was a response to the academicism of most secondary courses.[156] The rediscovery of vocationalism was accompanied by an appeal to traditions and moral justifications. Its objectives became more settled. Approaches to practical education, however, remained a matter of dispute. Specialization was attended by disagreement about the liberal possibilities of technical subjects, and whether vocationalism could serve as an integrating principle for all the subjects of the curriculum. The junior technical schools were associated with a limited range of vocational specialisms. The consequence was that the technical schools were unable to agree on curriculum policies. They remained apologetic or defensive about their courses and could not rival the status of academicism.

After 1944, the heterogeneous collection of institutions classified as technical schools were called upon to 'work out' 4 and 7 year secondary courses. The schools were widely different in the level of their resources, standards of accommodation and ability of pupils. External forces, meanwhile, notably the growth external examinations had the effect of diluting vocationalism. Even technical high schools displayed widely different institutional characteristics. The

1950s were a crucial decade for the schools. The
AHSTS formed in 1950 was itself not universalist in
outlook and failed to agree internally on key aspects
of vocational education. The results were problems of .
identity and practice. The hopes of the Crowther
Report were not built on because they were not a
realistic evaluation of the technical schools, or the
drift of secondary organization.

Conclusion

(i)   <u>Problems of Status and Coherence: The Insecure</u>
      <u>Foundations of Practical Education</u>

The technical schools faced considerable
difficulties in seeking to project vocational education.
The social contexts of vocationalism inhibited the
growth of practical education in schools. Policies
were not enabling. Practical education retained
negative connotations which concealed its educational
justifications. 'Liberal' vs. 'Vocational' was a
formula which accurately conveys the low regard in
which practical education was held. Vocationalism
could not rival the high status of reflective education.
It retained associations with premature specialization.
Practical education was regarded as a means of motivating
unselected pupils. The schools faced great difficulty
in attempting to transcend the instrumental interpretations
placed on them.

In any case, the schools were a heterogeneous group
of institutions. Their provision was related to the
variety of functions they were expected to perform.
Instrumental views prevailed, although the focus
shifted from the requirements of industry, to the
needs of 'types' of pupils. This obscured their
educational value, and restricted the impact of
practical education. The challenge to academicism that
vocationalism implied was limited to a class of special
institutions.

Practical education struggled to gain acceptance
despite the changing social context of science. The
period under discussion witnessed the transformation

of society by scientific applications. Yet the visibility of technology was not reflected in the school curriculum. Technical education was largely confined to training, or liberalized within higher education, where it built upon general preparation in secondary schools.

Circumscribed by assumptions which deprecated vocationalism, the social history of the technical schools may be considered in terms of

- the objectives and contexts of policy making and
- the variety of practical education.

(ii)   <u>Policies for Practical Education.</u>

At every major juncture 'purity' triumphed over 'practical' education. Vocationalism survived within the interstices of a major educational culture which consistently valued reflective above practical approaches, the thinking community above the doing community.

For the greater part of the period central policies were determined by instrumental assumptions about technical education which effectively limited the schools to preparation for a range of industrial employment. Before 1944, technical and secondary education were regarded (despite the efforts of some LEA s) as essentially unrelated. The secondary curriculum was academic in its content and formal in its methods. The consequences were that technical schools suffered from a lack of projection and uncertainity about their role.

The junior technical schools in particular were frustrated in their attempts to liberalize their

curriculum. Their activities were limited by
regulations intended to restrict them to preparation
for a range of particular crafts or industries.

After 1944, the secondary technical schools were .
not able to overcome the limitations and associations
of the past. While their environment was more supportive
towards the educational importance of vocationalism,
they were constrained in several key respects.

The local authorities, the providers of secondary
technical schools, had been restrained by official
disapproval from setting up 'liberal' technical schools
before 1944. Later, relocation away from technical
colleges and the need for expensive equipment meant that
LEAs thought hard about building technical schools.
As a group they were poorly placed in the competition
for educational resources with other secondary schools,
and occupied an indeterminate position in public
consciousness.

This may have counted for less if the educational
case for separate schools had been more convincing.
Positive selection for technical education was uncertain
at best, and had become untenable by the early 1950s.
The administrative separation of institutions along
functional lines also became more difficult to sustain
in the face of the evidence for practical education
in other secondary schools.

There were wide variations in local
conceptions of secondary technical education. In a
minority of cases they were regarded as liberal
preparatory institutions equal to the grammar schools
in their ambitions, and the level of support they

received. This was assisted before 1944 by the
encouragement of the professional engineering institutions.

For the most part, however, the technical
schools were seen as adjuncts to the workshop, factory
or kitchen; a source of potential skilled production
workers. Such a directly instrumental relationship (which
was reflected in the curriculum) became more difficult
to sustain, but was never entirely overcome.

The Ministry of Education had no very clear idea
about secondary technical education, although it
was committed to a policy of tripartite school organization.
Indeed, the educational possibilities of technical
education were of little interest except in so far as
they might promote desirable economic or social purposes.
There was greater concern about supply of places and
the relationships between the stages of the educational
system - determined occupationally or by some form of
selection - than content. The central department
abandoned interest in the curriculum after 1926 until
the early 1960s.

Furthermore, the schools existed within a political
and industrial framework which repeatedly failed to
promote enabling policies for vocational education
in schools. Before 1944 the 'training' mentality
prevailed. Thereafter, the schools were caught up in
controversies about selection and comprehensive
education. Policies in the decade after 1945
remained outwardly confident and committed to technical
schools. Selection difficulties were glossed over.
Technical schools became a stage prop in a system of

differentiated secondary schools.

These objects were not always accompanied by a firm grasp of the educational issues involved.

(iii)   Problems of 'Delivery'.

The technical schools represented one of the most notable attempts to give expression to an education based on the principle of 'Knowledge in action'. Collectively they encouraged learning through observation, experimentation and making as a means of helping pupils to

> "integrate .. into the various occupational
> and other adult roles required by an expanding
> economy and a stable polity."[1]

The curriculum was focused around the consideration of questions about usefulness, purpose and design in a range of craft and engineering specialisms. In so doing, ideas about vocation were introduced into the school. However, their impact was limited, and the educational coherence of their courses is sometimes exaggerated

Secondary technical education was best defined negatively as an expression of dissatisfaction with academicism. The 'practical' curriculum offered the possibility of using direct methods to solve 'real' problems. It was pupil centered. There was, however, an absence of vertebrate subject matter on which practitioners were agreed, and widely different approaches characterized institutional practices.

To speak therefore of curriculum policy is to denote an agreement which was lacking. Conflicting interpretations of vocationalism existed, which stemmed from the emphasis placed on instrumental objectives or

educational values.   There were also different
educational emphases which corresponded to earlier
('association') or later ('integration') views of the
role of practical subjects in the curriculum.   .

This may be represented diagrammatically:

Models of the Technical School Curriculum

Role	Curriculum Model	Examples
Occupational – 'Industrial Institutions'	Work related skills. Particular techiques for limited group of industries (engineering, construction) or single trade (Boot and shoe, Upholstery, Plumbing). For pupils 13+, unselected or on result of qualifying test; early vocational choice.	Trade schools; Housewifery Schools: many Junior Technical Schools; some Secondary Technical Schools (especially in London). 1890's–1960's.
	Curriculum as 'timetable'; association of practical and general subjects e.g. science and technical and general. Justification: usefulness. Applicability: 'types' of pupils 13-15/16. Selected in a variety of ways, (fees, ability, availability of other school places etc.)	'early' 1890's – 1960's. Higher Grade Schools; Many Junior Technical Schools; most Secondary Technical Schools.
Educational 'Schools'	Curriculum as 'method'; vocationalism as integrating principle of the curriculum. Derivation of principles from practice – science from technology. Justifications: development of abilities and personality by use of interests; education in a modern (scientific) idiom; development of generic skills. Outlook: growing 'purity' to meet professional/industrial demands, enhance status. Applicability: Selected pupils (I.Q.). Claim: Universal, 'for all.'	'later' 1930's – 1960's. Some Junior Technical Schools; Secondary Technical Schools corresponding to Technical High Schools.

The curriculum of the technical schools was typified by localism which reflected widely different administrative objectives. Opportunity for the exchange of good practices was limited. In the 1920s there were some regional attempts at staff development sponsored by the Board of Education, with the object of promoting instrumental aspects of junior technical education. In the 1940s and 1950s the case for secondary technical 'education' was made by dedicated professionals with informal opportunities for the exchange of views, working in diverse settings. The AHSTS, meanwhile, exhibited its own divisions, and was unable, in any case, to command wide attention. Without formal mechanisms to keep curriculum issues in the forefront of discussions about the schools, elucidation proceeded slowly, locally and without co-ordination.

There were three major periods during which the technical curriculum evolved. The first, roughly corresponding to the period between 1889 and 1917, was an age of relative openness to experiment with the subjects and methods of the secondary curriculum. Practical subjects found a place in the curriculum, associated with general subjects. This was succeeded by a period (1917-44) during which practical education was driven from the secondary curriculum. Vocationalism was confined to the margins of school practice. After 1944 there was a revival in the fortunes of practical secondary education. This was encouraged by the demise of a system of school organization based essentially on occupational classification,

reinforced by the tenets of   educational psychology, and
rooted in notions of differentiation and aptitude.
Instrumental attitudes remained. They were an impediment
to the projection of practical education. The result was.
that the secondary technical schools-set to find their
way after years of official disapprobation of vocationalism -
found it difficult to exploit their new environment.
The schools were clearer on outcomes than inputs to the
curriculum. They were increasingly obliged to enter pupils
for external examinations which were distinguished by
traditional forms of assessment and 'purity' of subject
matter.

It was clearly impossible, in these changing
contexts, for the interest in practical education to be
sustained and nourished at 20 year intervals by right-
minded national reports (Spens, Crowther), which overlay
a multiplicity of practices. There was a notable absence
of administrative support for secondary technical education
in the second and third periods delineated here (1917-65).
The case for practical education was made in response to
crises about institutional survival, which deflected
attention away from curriculum issues. The coherence of
administrative policies was, in any case, lacking.

In this way, technical schools were often locally
respected but did not fit easily into national priorities
for secondary education.

By 1939, the technical high school was established
as the ideal type of secondary technical school. The merits
of vocationalism had been established on grounds of its
general applicability. However, accommodation, the tenets

of psychology, and the desire to enhance the status of practical education meant the technical high school was its favoured institutional expression.

Schools which approximated to the technical high school were not widely established. The dissonance between ideal and practice meant that no single curriculum policy predominated. The technical schools between 1913 and 1965 subscribed to a variety of educational philosophies and displayed widely different institutional characteristics. The result was that vocationalism was undermined by its instrumental associations, and was unable to command the prestige of academic secondary education.

Not least, discussions about vocationalism were intermittent. They lacked perspective. Through changing contexts, circularities. of argument abounded. Practical education was regarded in terms of its instrumental value or its place in assisting personal development. Education and training were seen as mutually exclusive categories. The result was that unhelpful binary opposites - 'liberal' vs. 'vocational' endured Much indeed was context dependent and would require fresh interpretation in response to contemporary industrial and technological frameworks.

(iv) <u>Outstanding Questions</u>.

This research has identified related topics which now appear to be significant. They include:

a. <u>instructional issues</u>

This study has focused on the macro determinants of the practical curriculum. An account of instructional issues at the classroom level is also needed. Material is more scarce for such an approach, especially for the

early period. However, the use of institutional records
and oral evidence (including interviews with teachers and
pupils) would produce an account of the micro-determinants
of the curriculum. It would test the assertion that the
schools provided an education that united theory with
practice.

b. local case studies.

The difficulties of conducting local case studies
is discussed in the Introduction. Theses have sometimes
cast incidental light on local relationships, especially
between technical colleges and industry. For the most
part, however, detailed accounts are unavailable. The
success of such research would depend on institutional,
administrative, and local industrial records. The extent
to which the conclusions could be generalized would
depend on the area covered and preservation of material.
It is likely to be most successful where large employers
or well organized trades were served by the schools.

c. Practical Education in other Schools

A programme of investigation of other intitutions
contemporary with the technical schools should include
the curriculum policies of certain public schools. The
growth of engineering 'sides', for example, requires
investigation. Grammar school sixth forms, meanwhile,
underwent important changes of emphasis in the 1950s.
The extent and method of science teaching is in need of
examination. Service academies like Devonport and the
Admiralty Dockyard Schools were also exemplars of the
technical curriculum, and parallel the efforts of the
technical schools. Above all, the work of the modern

schools awaits detailed examination and assessment. The great majority of secondary school pupils received their education in these institutions after 1944, and they were important in pioneering practical education with unselected pupils.

d.   Past and Present.

The current re-discovery of the importance of non-advanced technical education has indicated some perennial issues most notably the tensions between the 'training' and 'educational' mentalities which have pervaded the subject down the years. So far at least, at the secondary level, educational and industrial criteria have been mutually exclusive in their demands of the curriculum. The possibility of developing generic skills through vocational education is novel and offers the hope of overcoming the objections to charges of utilitarianism. These initiatives are beginning to be examined. They are a new starting point in looking at past developments. Critical innovations like the Technical and Vocational Education Initiative (TVEI), and the Certificate of Pre-Vocational Education (CPVE) backed by resources and support offer a new framework for practical secondary education across a wider subject matter than was conceived in the technical schools. They have raised in new guises the issue of education vs. training - the two competing concepts of vocationalism that have been identified in this study.

Present day conflicts also replicate past concerns. 'Work Related Training' has a familiar ring and has been asserted as a cardinal principle of the Manpower Services Commission (MSC) Schemes. By contrast, the funds made

available in this way have been used for a number of
local experiments in curriculum development where the
training mentality of the MSC has been much amended by
educational criteria. These issues directly echo the
utilitarian vs. liberal interpretations of the technical
school curriculum.

APPENDIX I

Local Authority Estimates for Technical Schools submitted under the Education Act, 1944.

(i) English Counties

Date	County	% Technical Places	No. of Schools
June 51	Bedfordshire	15	7
n.d. 1946	Berkshire	7	5
Feb 47	Bucks	10	4
Mar 47	Cambs.	3	2
Aug 51	Isle of Ely	10	2
-	Cheshire	not known	
Aug 51	(Cornwall	4	1
	(Isles of Scilly)	-	-
n.d. 47	Cumberland	3	2
Oct 52	Derbyshire	8	9
Dec 46	Devon	6	5
n.d. 46	Dorset	7	2
n.d. 1949	Durham	6	11
July 52	Essex	10	18
Feb 52	Gloucs.	17	9
	Hants		
n.d.	Isle of Wight	9	1
Feb 50	Herefordshire	11	2
June 49	Herts	-	-
Aug 50	Hunts.	-	-
Feb 49	Kent	13	28
Feb 51	Lancashire	10	34
Sept 49	Leicestershire	-	-
-	Lincs. Holland	not known	
Jan 50	Lincs. Kesteven	7	1
53	Lincs. Lindsey	2	1
n.d. 51	Middlesex	-	-
Mar 47	Norfolk	3	2
Feb 47	Northants.	-	-
59	Northumberland	1	1
n.d.	Notts.	13	12
n.d. 49	Oxfordshire	12	2
-	Peterborough JEB	not known	
May 46	Rutland	-	-
n.d. 47	Salop	-	-
n.d. 48	Somerset	5	6
Sept 47	Staffs.	1	2
n.d.	Suffolk, E	-	-
July 49	Suffolk, W	-	-
July 47	Surrey	-	-
Nov 49	Sussex, E	-	-
March 47	Sussex, W	7	3
n.d.	Warwickshire	5	4
July 46	Westmorland	-	-
Mar/June 46	Wilts.	7	4
46-48	Worcs.	8	6
Oct 48	Yorks., ER	-	-
Dec 47	Yorks., NR	1	1
n.d. 46	Yorks., WR	-	-
47	London	-	-

(ii)   Welsh Counties

Date	County	% Technical Places	No. of Schools
n.d.	Anglesey	-	-
Jan 54	Breconshire	-	-
n.d.	Caernarvonshire	-	-
Mar 47	Cardiganshire	9	1
Apr 52	Carmarthenshire	-	-
n.d. 51	Denbighshire	-	-
July 47	Flintshire	-	-
-	Glamorgan	not known	
Dec 46	Merionethshire	-	-
-	Monmouthshire	not known	
July 46	Montgomeryshire	6	1
n.d. 47	Pembrokeshire	-	-
Sept 49	Radnorshire	-	-

(iii)   English County Boroughs

Date	County Boro.	% Technical Places	No. of Schools
Jan 47	Barnsley	16	2
Mar 46	Barrow	11	1
Oct 46	Bath	9	1
Sept 46	Birkenhead	7	2
46-47	Birmingham	13	20
Jan 47	Blackburn	10	1
49	Blackpool	13	2
Apr 47	Bolton	12	3
Oct 50	Bootle	-	-
n.d. 46	Bournemouth	6	1
Oct 48	Bradford	-	-
Mar 50	Brighton	-	-
June 46	Bristol	-	-
Jan 49	Burnley	16	2
Apr 49	Burton	14	1
June 50	Bury	15	2
n.d.	Canterbury	22	2
June 52	Carlisle	5	1
-	Chester	not known	
Oct 48	Coventry	-	-
n.d.	Croydon	9	4
Sept 47	Darlington	-	-
July 46	Derby	14	4
Dec 50	Dewsbury	10	1
Nov 49	Doncaster	16	2
Oct 47	Dudley	18	2
Sept 48	Eastbourne	-	-
Feb 47	East Ham	13	1
Oct 45	Exeter	14	2
May 51	Gateshead	21	3
-	Gloucester	not known	
n.d. 47	Great Yarmouth	12	1
Nov 48	Grimsby	16	2
n.d.	Halifax	14	2
May 50	Hastings	15	2
n.d. 50	Huddersfield	9	1
n.d.	Ipswich	-	-
Apr 48	Kingston-upon-Hull	15	8
Sept 46	Leeds	15	9
-	Leicester	not known	
n.d.	Lincoln	-	-
Jan 48	Liverpool	21	26
n.d.	Manchester	5	9
June 49	Middlesbrough	-	-
May 49	Newcastle-u-Tyne	6	6
n.d.	Northampton	9	1
n.d.	Norwich	11	3
n.d.	Nottingham	4	3
n.d.	Oldham	-	-
Aug 51	Oxford	17	3
Dec 49	Plymouth	16	6
n.d.	Portsmouth	8	3

Date	County Boro.	% Technical Places	No. of Schools
47	Preston	-	-
July 46	Reading	-	-
Oct 51	Rochdale	17	2
Apr 48	Rotherham	14	2
Jan 49	St. Helens	-	-
Mar 46	Salford	5	1
n.d. 46	Sheffield	8	5
-	Smethwick	not known	
n.d.	Southampton	-	-
July 48	Southend	-	-
-	Southport	not known	
July 54	South Shields	-	-
n.d. 47	Stockport	9	2
51	Stoke-on-Trent	19	7
June 48	Sunderland	13	3
46	Tynemouth	20	1
n.d.	Wakefield	-	-
-	Wallasey	not known	
June 49	Walsall	12	2
Aug 48	Warrington	12	1
Jan 52	West Bromwich	-	-
July 48	West Ham	11	2
n.d.	West Hartlepool	13	2
n.d. 48	Wigan	6	1
July 46	Wolverhampton	17	4
Nov 46	Worcester	18	3
Mar 48	York	-	-

(iv)   Welsh County Boroughs

Date	County	% Technical Places	No. of Schools
Sept 51	Cardiff	10	4
Aug 47	Methyr Tydfil	-	-
Apr 50	Newport	-	-
-	Swansea	not known	

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Abbreviations

The method adopted in referring to Hansard (Parliamentary Debates) is as shown in the following example:-

Volume	house	series	date	column
391	h.c. deb	5s	30th June 1943	1955

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