



EDUCATION IN 1964

BEING THE REPORT OF
THE DEPARTMENT OF EDUCATION AND SCIENCE

*Presented to Parliament by the Secretary of State for Education and Science
by Command of Her Majesty
March 1965*

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**REPORT OF THE DEPARTMENT OF
EDUCATION AND SCIENCE**

To the Queen's Most Excellent Majesty

MAY IT PLEASE YOUR MAJESTY

I submit to Your Majesty the Report on Education of the Department of Education and Science, which Your Majesty brought into being on 1st April 1964 and to which were transferred all the functions of the Ministry of Education together with certain other responsibilities including those appertaining to university matters in Great Britain. The Report is for the year 1964, during which the Rt. Hon. Sir Edward Boyle, Bt., M.P., was Minister of Education for the first three months, the Rt. Hon. Quintin Hogg, Q.C., M.P., was Secretary of State for the next six-and-a-half months and the Rt. Hon. Michael Stewart, M.P., for the final two-and-a-half months. In the last two months of the year responsibility for matters affecting the United Nations Educational Scientific and Cultural Organisation and the National Council for the Supply of Teachers Overseas was transferred to the new Ministry of Overseas Development.

Anthony

Quintin Hogg

Secretary of State.

Herbert Andrew

Permanent Under-Secretary of State.

31st March 1965.

TABLE OF CONTENTS

PART ONE	PAGE
A GENERAL SURVEY	9

PART TWO
THE YEAR'S EVENTS

SECTION I—THE SCHOOLS (ENGLAND AND WALES)	34
INTRODUCTION	34
1. MAINTAINED SCHOOLS	34
a. Population	34
b. Supply of Schools	35
c. Supply of Teachers	38
2. SCHOOLS NOT MAINTAINED BY LOCAL AUTHORITIES	43
a. Direct grant schools	43
b. Independent schools	43
3. EXAMINATIONS AND THE CURRICULUM	45
a. Schools Council for The Curriculum and Examinations	45
b. Secondary School Examinations Council	45
c. The Curriculum Study Group	46
4. HANDICAPPED PUPILS, SPECIAL EDUCATIONAL TREATMENT AND SPECIAL SCHOOLS	47
5. THE SCHOOL HEALTH SERVICE	51
6. GENERAL	52
a. Central Advisory Council for Education (England)	52
b. Nursery Education	52
c. The School Meals Service	52
d. Milk in Schools Scheme	53
e. Licences for Children in Entertainment	53
SECTION II—FURTHER EDUCATION (ENGLAND AND WALES)	54
INTRODUCTION	54
1. TECHNICAL EDUCATION	54
a. General	54
b. Education for Industry and Commerce	55
c. Reorganisation of Courses	58
d. Higher Technical Education	64
2. TEACHER TRAINING	66
a. Colleges and Students	66
b. Courses of Initial Training	69
c. Courses of Further Training	70
d. Administration	72
3. ADULT EDUCATION AND THE YOUTH SERVICE	75
a. Adult Education	75
b. Public Libraries and Museums	78
c. The Youth Service	79
d. Physical Training and Recreation	82

TABLE OF CONTENTS—*continued*

	PAGE
SECTION III—THE UNIVERSITIES (GREAT BRITAIN)	84
INTRODUCTION	84
a. Ministerial Responsibility	85
b. University Institutions	89
c. Grants and Building Programmes... ..	90
d. Publications	90
SECTION IV—WALES AND MONMOUTHSHIRE	92
INTRODUCTION	92
a. Administration and Advice	95
b. The Schools	97
c. Further Education	97
SECTION V—FINANCE AND GENERAL	101
INTRODUCTION	101
1. FINANCE	101
a. Public expenditure	101
b. Teachers' Salaries and Superannuation	105
c. Grants to Students	108
d. Educational Building	111
2. GENERAL	115
a. Educational Research	115
b. Audio-visual aids	117
c. Statistics	119
d. Automatic Data Processing	121
e. Information Services	122
3. INTERNATIONAL RELATIONS	124
a. The Third Commonwealth Education Conference	124
b. Commonwealth Bursary Scheme	129
c. The National Council for the Supply of Teachers Overseas	130
d. Commonwealth Institute	131
e. Other International Co-operation	132
f. Interchange of Teachers	134
g. UNESCO	136
h. Architecture and Building	142

APPENDICES

A. Grants offered in 1964-65 to National Voluntary Youth Organisations under the Social and Physical Training Grant Regulations, 1939	143
B. Grants to National Voluntary Sports Organisations under the Physical Training and Recreation Act, 1937	145
C. Grants to National Associations under the Further Education (Grant) Regulations, 1959	146
D. (i) Overseas Assistants Serving in England and Wales	146
(ii) Assistants from England and Wales serving in Europe and Tunisia... ..	146
E. Grants to Voluntary Bodies for Educational Services (under the Educational Services and Research Regulations, 1946, Grant Regulations No. 4)	147
F. (i) Orders under Education Acts, etc.	147
(ii) Orders under Charities Act, etc.	148
(iii) Schemes under the Endowed Schools Acts	148
G. Statutory Instruments made by the Secretary of State during the year 1964	149

TABLE OF CONTENTS—*continued*

	PAGE
H. Publications: (i) Command Papers	150
(ii) Non-Parliamentary Publications	150
(iii) Circulars and Administrative Memoranda	151
I. Research projects accepted for grant by the Department between 1st April, 1962 and 31st December, 1964	152

LIST OF TABLES

1. Numbers of pupils on the registers of maintained primary and secondary schools (other than nursery and special schools)	34
2. Numbers and proportions of 15, 16 and 17 year-old pupils	35
3. Places started in major building programmes for primary and secondary schools	35
4. Proposals for new schools approved under Section 13 of the Education Act, 1944, as amended	36
5. Schools closed under Section 13 of the Education Act, 1944, as amended	36
6. Voluntary school projects included in building programmes 1945 to 1964-65	37
7. Grants and loan advances during 1964	37
8. Teachers in service	38
9. Graduate teachers in service	39
10. The return of qualified women teachers	39
11. Part-time teachers in service	40
12. Temporary teachers approved by the Minister of Education or Secretary of State, 1962 to 1964	41
13. Progress of building work since 1956	55
14. Diploma in Technology awards	66
15. Admissions to teacher training courses	67
16. Capital grants offered to local voluntary bodies	82
17. Summary of public authorities' educational expenditure	101
18. Expenditure and receipts	102
19. Costs per pupil	103
20. Costs per student hour	104
21. Value of educational building, 1946-64	111
22. UNESCO, 1965-66 Budget	140

PART ONE

A GENERAL SURVEY

The general survey of education in 1964 with which this report opens is in three parts. The first records the administrative events of the year. The second deals with supply problems—teachers, buildings, and finance. The third gives some account of developments in what is taught and how it is examined.

Administration

From 1st April 1964 the powers and duties of the Minister of Education in England and Wales became those of the Secretary of State for Education and Science, together with departmental responsibility for university matters in Great Britain. Among the duties was that of making an annual report, which now includes references to university developments and relates therefore for the first time to all stages of education. (The responsibilities of the Secretary of State for science are not dealt with in this report; nor are those of the Secretary of State for Scotland, who is responsible for education in Scotland.)

From April the new Department of Education and Science was organised in two administrative units, one dealing with universities in Great Britain and with civil science, the other with schools, further education, teachers and kindred subjects in England and Wales; and each had its own accounting officer. Specialist branches, e.g. on building and statistics, were available to provide both administrative units with professional advice.

The Schools

The advice tendered in 1963 by the Central Advisory Council for Education (England) in its report *Half our Future* was carried further into effect in 1964: by an announcement that the school-leaving age would be raised to sixteen in 1970; by the launching of a further phase of school building; and by the establishment or support of new research projects into socio-economic aspects of education. In recognition that the full implementation of the report would go beyond the educational sphere, the Ministry of Labour, D.S.I.R., the C.O.I. Social Survey, the Ministry of Housing and Local Government, and the Home and Health Departments joined the Education Departments in forming a committee to co-ordinate research in the several interlocking spheres of schools and society.

Meanwhile the Central Advisory Council—under the chairmanship of Lady Plowden and with new terms of reference, “to consider primary education in all its aspects and the transition to secondary education”—commissioned a number of research projects, including a Social Survey by

the Central Office of Information on the relationship between the home and school. This is one of four major aspects of the Council's work, on each of which the Council has set up a working party. The others are the physical, mental and emotional development of young children and its relationship to educational organisation; the overall organisation of primary education and the transition to secondary education; and the internal organisation, staffing, methods and curriculum of primary education. Other research projects commissioned by the Council are concerned with the relationship between circumstances surrounding birth, social factors, and subsequent educational development, with the relationship between environment and educational performance, the organisation of classes in small primary schools, and the effect of the social services on the primary school child. The Council has also had under review such aspects of the training of primary school teachers as fall within its terms of reference. In October the Council announced that it would be seeking the opinions of individual teachers in all kinds of schools and for this purpose had selected a sample of 2,500; a questionnaire would be sent based on some of the more controversial issues. At the same time the Council invited evidence and statements of view from members of the general public.

In April the membership of the Central Advisory Council (Wales), with the same terms of reference, was announced. The chairman is Professor C. E. Gittins. The Council has established three working parties, one concerned with Welsh language in the schools, another with the supply, training and development of teachers, and the third with the curriculum and organisation.

A three-year study of the part played by the governing bodies of county secondary schools in England has been commissioned by the Department and is being undertaken at the University of London, Institute of Education.

A major study in the field of constructive education has been undertaken by the National Foundation for Educational Research on the joint sponsorship of the Department and the Home Office. Lasting eight years and costing £125,000, it will investigate the factors affecting the attitudes, behaviour and attainment of pupils in primary and secondary schools.

The biennial report of the Chief Medical Officer on the health of the school child in 1962-63 was published in October. Never better than in the last ten years, was the general conclusion; and the report had some particular things to say about the changing pattern of disease and disability, the changing attitude to children with defective hearing, the progress of handicapped children in special schools, the work of child guidance clinics, health education, and the School Dental Service. There was a conference in July on the handicapped school leaver, at which it was announced that the Department would be calling an inter-departmental conference to consider a joint approach to possible new legislation or administrative decisions. In November a short residential conference was called to bring together workers in each of the professional disciplines involved, so that they might exchange information and experience and consider how these were relevant to the education of psychotic or autistic children. The conferences were part of a broad re-appraisal of the education of handicapped pupils, extending into the nature and degree of the support that might be given to the

educationally sub-normal when they have left school. It was announced in September that a Committee had been appointed to consider whether there is a place for manual methods of communication in the education of the deaf, a subject which has become highly controversial in recent years.

One of the educational pamphlets published by the Department during the year was concerned with aspects of special education. *Slow Learners* is likely to be of wide interest for the term has "come to be widely applied to all children who are, to a greater or lesser degree, failing in school". The book describes some of the characteristics of such children and—since "the greater number will always be taught in ordinary primary and secondary schools"—the provision for them in the give-and-take of school life. It then discusses remedial education, day and boarding schools, curriculum, employment and "after care". A final chapter concludes that there are "solid" grounds for satisfaction, but a good deal remains to be done, and interesting developments lie ahead.

In June the Secretary of State (Mr. Quintin Hogg) was asked by a widely representative meeting to set up a Schools Council for the Curriculum and Examinations, an independent representative body to be charged with the task of keeping under constant review the curricula, teaching methods and examinations in the primary and secondary schools. The Council came into being on 1st October, under the chairmanship of Sir John Maud. On that date it took over the functions in relation to secondary school examinations hitherto undertaken by the Secondary School Examinations Council, whose subject panels continued in being pending the setting up of the full committee structure of the new Council.

Secondary Re-organisation

In a statement to the House of Commons on 1st July the Secretary of State (Mr. Quintin Hogg) explained that his powers to influence local schemes of secondary school organisation were confined to the specific matters in section 13 of the Education Act of 1944 and the powers—more general in character but more limited in application—under section 68. In the same month the Royal Assent was given to the Education Act 1964, which was intended to allow for the establishment of a relatively small number of schools catering for children of ages straddling the division between primary and secondary schools.

On 12th November the Secretary of State (Mr. Michael Stewart) told the House of Commons that the Government would encourage secondary education on comprehensive lines. The method and timing would vary from one area to another, but in general entry to grammar schools will no longer be restricted to certain selected children at the age of 11-plus and the range of studies will be widened. It would be the aim of the Government's policy to preserve what was valued in grammar school education for those who now received it and to make it available for more children. Local education authorities all over the country, of many different political complexions, were proceeding or were anxious to proceed with re-organisation. This created a situation in which it would become necessary for some general statement of principles to be made. On 27th November the Secretary of State told the House that the Government accepted that the re-organisation of secondary education could not be accomplished overnight and could not be done by

any one method. He defined a comprehensive system as one in which secondary schools comprehended a range of courses suited to the needs of all normal children, and said that nearly two-thirds of the secondary school population was already living in the areas of authorities who were either implementing or making concrete plans for re-organisation on comprehensive lines.

The 1944 Act, which required provision to be made for secondary schooling, did not specify any particular pattern for secondary schools. The plans subsequently prepared by local education authorities were, however, much influenced by the White Paper which had preceded the Act (*Educational Reconstruction*, 1943) and which recommended "three main types of secondary school to be known as grammar, modern and technical schools". But the White Paper suggested that "it would be wrong to suppose they will necessarily remain separate and apart"; and there have over the last twenty years been various experiments in combining different types, up to fully comprehensive schools. After more than a decade of post-war experience another White Paper (*Secondary Education for All*, 1958) found "a wide range of possibilities" open. These included "comprehensive or similar schools proposed on genuine educational grounds", particularly in country districts where population was sparse, and in areas of extensive new housing with no existing schools with a well-established tradition as grammar or technical or modern schools. There was still "plenty of room for variation in the precise pattern of organisation", and the aim "must be to provide the widest possible range of opportunities for boys and girls of different capacities and interests".

For purposes of statistical analysis secondary education has been treated as being provided broadly in secondary modern, secondary grammar and secondary technical schools. In addition a bilateral school has been recognised as one which provided two of the main types in separate streams, a multilateral school as providing all three types in separate streams, and a comprehensive school as being intended for all secondary pupils in a district. The number of comprehensive schools doubled between 1958 and 1963, providing then 175 out of a total of 5,891. The number of unclassified schools rose meanwhile from 200 to 245, a minor consequence of the increasing difficulty of precise categorisation. Broadly what emerged during this period was a bilateral system of secondary education over most of England and Wales, provided in about 4,000 modern schools and 1,300 grammar schools. This system has come under fire from a variety of emplacements—social and political as well as educational—and in 1964 a number of authorities had departed or were considering departing from it. The main target of the critics has been the fact of segregation at 11-plus, whatever the system, and a number of methods of avoiding it have been adopted or proposed.

At one end are what might be called the orthodox comprehensive schools, which can in practice differ a good deal among themselves. In scope they can cater for the whole ability range and the whole age range from eleven to eighteen. The newer variations of the comprehensive idea involve splitting up the age range, for example at fourteen, with a lower and an upper school. Both lower and upper schools may continue to be fully comprehensive in ability range. Or there may be selection for the upper school: competitively

or by parental choice. There is also some support for the notion of beheaded comprehensive schools: an age range, that is, up to sixteen, with a sixth-form college elsewhere for those staying on.

A blurring of the edges between nominally different types of secondary school has meanwhile been brought about by a wider provision of courses in all types of school, and particularly by the inclusion of academic type courses in non-selective schools—a development foreseen in the 1954 C.A.C. report, which recommended "comparable courses for pupils of similar ability in grammar and modern schools". This has been reflected in the increasing trend to staying-on in modern schools beyond the minimum school-leaving age and in the G.C.E. results obtained. In the G.C.E. summer examinations of 1963, for example, the modern schools (including all-age schools) were represented by 56,000 candidates at Ordinary level out of a total of 312,000 candidates, and by 1,480 candidates at Advanced level.

Further and Higher Education

It was announced in December that an urgent assessment was to be made of progress in the five years since the Albermarle report on the youth service was published. The assessment will be made by a committee of the Youth Service Development Council under the chairmanship of Lady Albemarle. The committee was asked also to chart the lines of future development.

The National Advisory Council on Education for Industry and Commerce issued two reports during the year: one (the Crick report) proposing a new nationally recognised qualification in business studies at honours degree level, the other (the Alexander report) on the public relations of further education. The former, which was concerned with courses offering an advanced general education for business combined with practical business experience, concluded that the demand from industry and commerce was sufficient to justify its early establishment, and suggested the new Council for National Academic Awards as a suitable instrument. The second N.A.C.E.I.C. report recommended the establishment of systematic arrangements—at college, local authority, regional, and national levels—whereby the responsibility for co-ordinating and overseeing public relations activities, including the dissemination of information, should be assigned to specific individuals.

The N.A.C.E.I.C. also established two further committees during the year. The first, in March, was to advise on further education for agriculture, following the decision to transfer responsibility for the agricultural colleges to the Department as from 1st April. The second, also in March, was to suggest ways of making the most effective use of technical college resources. Sir Harry Pilkington, who is chairman of the Council, is chairman of both committees.

Close interest was taken by the Council in the proposals which led to the passing of the Industrial Training Act, 1964, and in the report of a committee set up by the Minister of Education on day release. The three main objectives of the Act were: to ensure an adequate supply of properly trained men and women at all levels in industry; to secure an improvement in the quality and efficiency of industrial training; and to share the cost

more evenly among firms. The first boards to be established were for construction, engineering, iron and steel, wool textiles and shipbuilding. In November the Minister of Labour announced a new inter-departmental committee, on which the Department was represented by the Joint Parliamentary Under-Secretary (Mr. Boyden) to advise on the means of encouraging more rapid development of individual training and associated technical and other forms of further education.

The report of the Committee on Day Release (the Henniker-Heaton report) was published in May and recommended a national target of an additional 250,000 young people obtaining day release for further education (a doubling of existing numbers) by 1970. The report welcomed the provisions of the Industrial Training Act as being likely to be of major assistance in achieving its objectives. The committee believed that a substantial expansion of day release could be secured by voluntary means and envisaged a sustained campaign by each local authority, with the active support of employers and trade unions, directed at achieving local targets set in relation to the national target. The Government announced its readiness to accept the committee's proposal, asked the N.A.C.E.I.C. for advice on launching the campaign, and in October remitted the Council's advice to the regional advisory councils for further education and to the local authorities.

The first report of the National Council for Diplomas in Art and Design, constituted by the Minister of Education in 1961, was published in February and was wholly concerned with the review of courses submitted by schools and colleges. In October the National Advisory Council on Art Education recommended the provision, in a few colleges already authorised to offer courses leading to the Dip. A.D., of post-diploma courses leading to a new nationally recognised higher diploma in art.

In the autumn a Royal Charter was granted to the new Council for National Academic Awards and the Council met for the first time on 30th September. An autonomous body, as recommended in the Robbins report, the Council has been set up to award degrees and other academic distinctions to higher education students in technical colleges and other institutions which do not award their own. The work of the National Council for Technological Awards, which has awarded the Diploma in Technology since its institution in 1955, is being handed over to the new Council; and the chairman of the old Council, Sir Harold Roxbee Cox, is the first Chairman of the new one. There are 21 other Council members, five from industry and commerce, two from local authorities, seven from universities and colleges of advanced technology and seven from other colleges of further education.

In its first statement, issued in November, the Council announced the setting up of boards of studies, to be known as the Committees for Science and Technology and for Arts and Social Studies, and to be concerned with the setting and maintaining of standards. It invited colleges to submit proposed courses for a higher award in business studies, asked for comments on the possibility of courses extending over more than one field of study (for example, over technology and a social science), and announced its intention to examine the case for science and technology courses at ordinary degree level (the Dip. Tech. being an honours award only).

In all matters relating to the universities—and in particular in the framing of building programmes to implement the proposals of the Robbins report of 1963—the Department has had the continuing advice of the University Grants Committee, whose structure has been strengthened by the appointment of Sir Harold Sanders as deputy chairman and by the authorisation of additional professional and administrative staff. The chairman of the Committee, which now numbers twenty-two, is Sir John Wolfenden. New appointments to fill eight vacancies and two re-appointments were announced in January 1964. In February, because of added responsibility resulting from the recommendation that the Colleges of Advanced Technology and certain Scottish institutions should have university status, two additional appointments were made.

On the advice of the U.G.C. the Government welcomed, in May, the proposal of an independent working party that the cost of developing two new business schools (which Lord Franks had recommended should be established in Manchester and London) should be shared equally between business and the Government. The Government said it was willing to make provision for its share of the capital and recurrent expenditure within the framework of future university programmes. At the same time it indicated that management studies elsewhere, whether at universities, C.A.T.'s, technical colleges or other institutions, were needed and would require continued support.

During the year Charters were granted to the Universities of East Anglia and Lancaster. In July the Government accepted the advice of the U.G.C. that the new Scottish university—the eighth to be established in Great Britain in the last five years—should be at Stirling; and that a new medical school should be located at Nottingham. The Royal College of Science and Technology at Glasgow was granted a Royal Charter and became the University of Strathclyde. Final plans were approved for the rebuilding of the Brunel College (one of the ten C.A.T.'s which are receiving university status) on a site at Uxbridge; it was announced in May that the Battersea College of Technology would be moving to Guildford; and in June that the Bristol College of Science and Technology would be moving to a new site at Bath.

In October two more appendices were published to the Report of the Committee on Higher Education. Appendix Two, in two volumes, gave a detailed picture of British higher educational life in 1962. The material, which is not normally available from routine annual statistics, was obtained by the Committee during the preparation of the report published in October 1963. Appendix Five brought together for the first time in one volume a comparative study, including statistics, of higher education in eleven developed countries.

Teachers and Salaries

The Secretary of State told the House of Commons on 11th December of plans for the future of the teacher training colleges in England and Wales. These included the proposal to re-name them colleges of education, and this title is used in the remainder of this survey. The Government agreed with the Robbins Committee on Higher Education that wider opportunities

should be provided for suitable students to obtain a degree, together with a professional teaching qualification, by means of a four-year course. The academic relationship between the universities and the colleges of education should be further extended through the institutes of education, and the Government welcomed the readiness expressed by most universities to consider making degrees available to suitable students. The Government had decided that fundamental changes should not be made in the administrative and financial structure of the teacher training system, particularly at a time when the colleges were engaged in a very large and rapid expansion and when the problems of teacher supply were especially difficult. But they intended that the present arrangements for the internal government of colleges should be reviewed.

The short-term supply situation and the long-term prospect were the subject of study during the year by the re-constituted National Advisory Council on the Training and Supply of Teachers.

In the current expansion principals of colleges are encountering new problems of management, and week-end conferences were held in March and October to consider the three broad interlocking problems of personal relations, communications, and organisation. A three-year research project at the Keele Institute of Education will explore local conditions affecting the output of teachers; a number of areas of similar size, with and without dominant industrial traditions, will be studied.

In March the Ministry launched a new campaign, in which local education authorities and others co-operated, to encourage a return to service of the large number of qualified married women teachers who had left in earlier years, usually to marry and have children of their own. Between mid-April and end-July more than 3,000 women returned to teaching, rather more than half of them full-time. Local authorities were notified in December that there would be a further campaign in 1965. In July a circular drew attention to a limited exception to the general ban on extending nursery provision: the establishment of new nursery classes would be welcomed where they would produce a net increase in the teaching strength, by enabling qualified women with young children to return to teaching.

There were increases in 1964 of a fifth in the number of teachers attending short courses organised by the Department (to over 6,600) and a quarter in attendance at one-year advanced courses. In May a circular was issued on the further training of serving teachers to meet the needs of the greatly enlarged teaching force of the future. It emphasised that as the teaching profession grew in size it might be expected to take an increasing share in the work of improving standards and making new methods more widely known. In November the Department announced two programmes providing between them over three hundred courses that will be available to serving teachers in 1965. Sixteen high-level short courses are being held to bring together for discussion groups of experienced teachers who could be expected to take a leading part in local courses in their areas.

In March the Minister of Education addressed to all the constituent bodies of the Burnham Committee a letter outlining the framework for possible new arrangements for determining the salaries of teachers. Discussions followed, and in July the Secretary of State (Mr. Quintin Hogg) wrote

suggesting that the main features had found general acceptance: namely that there should be negotiating committees of which the teachers' representatives would form one side and the representatives of the Secretary of State and of the local authorities jointly the other, and that provision should be made for independent arbitration in the event of disagreement. At a meeting of the parties in September there was a wide-ranging discussion of the proposals, in the light of which Mr. Hogg referred to the possibility of a Parliamentary Bill.

Early in November the Secretary of State (Mr. Michael Stewart) met representatives of the authorities and of the teachers for discussion and on 12th November published a Bill which was given its first reading in the House of Commons on 19th November. The Bill provided for the setting up of negotiating committees consisting in each case of an independent chairman and two sides, one representative of teachers and the other comprising representatives of the Secretary of State and of local authorities. It was an important departure from the previous arrangements that the Secretary of State would thus be represented in the negotiations. The Bill required each committee to review the remuneration of teachers with whom it was concerned and to transmit their agreed recommendations to the Secretary of State, who would then be required to give them effect. Another important innovation was that under the Bill matters on which a committee failed to agree could be referred to arbitration. The Bill required the Secretary of State to give effect to the recommendations of the arbitrators unless each House of Parliament resolved that national economic circumstances required that they should not be implemented. In that event the Secretary of State would, after consultation with the appropriate committee, determine what the new salary provisions should be. The Bill also provided that salary changes might be made with retrospective effect.

In March a working party was established, under Ministry chairmanship, to prepare pension schemes for widows and dependants of teachers, for the consideration of the Minister, the local authorities, and the teachers' organisations. Another working party, with an independent chairman, Sir George Maddex, was set up in September to review the superannuation arrangements for university teachers.

The Government accepted in March a report by the National Incomes Commission on the remuneration of academic staff in universities and in colleges of advanced technology and asked Parliament to provide additions to grants so that the new rates could operate from 1st April.

Twenty Years of Advice

The preceding sections have been largely concerned with developments in 1964 within the structure of advisory councils and committees on various aspects of the education service. As 1964 was the year in which the Ministry of Education ceased to have a separate existence—twenty years after its creation by means of the Education Act of 1944—the moment may be opportune to look back over two decades of advice and its implementation. By the end of the forties the now familiar advisory structure had taken shape, with the C.A.C.'s (England and Wales), the N.A.C.E.I.C. and the N.A.C.T.S.T. already in being and the first reports of the C.A.C.'s already in print.

The C.A.C. (England) began by considering first the transition from school to independent life (*School and Life*, 1947) and then (*Out of School*, 1948) the pursuits of children out of school hours. The first report began by asking for more school buildings and went on to talk about the curriculum in ways that would not sound odd today to the founding fathers of the Schools Council. The interaction of school and the larger society has never been wholly absent from the deliberations of the C.A.C., as the briefest of references to Gurney-Dixon (*Early Leaving*, 1954), Crowther (*15-18*, 1959) and Newsom (*Half Our Future*, 1963) will make plain. The 1954 report, as well as setting a new standard in its regard for statistical evidence, was a full ten years ahead of its time in being "impressed above all with the far reaching influence of a child's home background" and in recommending "a great deal of research, which is beyond our means". The point having been repeated (with a still greater respect for statistical evidence) in the 1959 report, the Ministry's research fund was established and provided in its first few years of life for a number of environmental studies.

The reports also burrowed deeper into the educative process itself, and those signed by Sir Geoffrey Crowther and Mr. (later Sir) John Newsom were as much handbooks for practising teachers as essays in political programming. Of these two reports the former had most to say to the Government of the day in its plan for a twenty-one year programme of educational development. It asked for two annual leaving dates instead of three, a school-leaving age of 16 by 1966-68, an experiment in compulsory part-time education at 16 and 17, the development of a "coherent national system of practical education", a new fifth-year examination for modern schools, and more teachers. By 1964 two annual leaving dates had been introduced, there was a more coherent system of technical education, preparations were being made for a new examination (the C.S.E.), and 1970 was announced as the year for raising the school-leaving age. There were more teachers, but not enough. There was no compulsory education at 16 or 17, but there were signs of a slow increase in day release and some new plans for industrial training. Most of these had become subjects in their own right and had been reported on by separately constituted bodies.

The question of another examination, for example, was referred in 1958 to a special sub-committee by the Secondary School Examinations Council which, seven years earlier, had created the General Certificate of Education. (The Council, established in 1917, had been reconstituted in 1946 and had reported in favour of a G.C.E. in 1947. Its work is now subsumed in that of the new Schools Council.) Between its first report on the possibility of a new examination in 1960, and the formal promulgation of the Certificate of Secondary Education in 1963, the idea was thoroughly examined. When finally accepted it was on the clear understanding that the new examination should follow the curriculum instead of dominating it, and that for that purpose should be controlled by the teachers. The last act of the S.S.E.C. was to publish bulletins that might help them in this important addendum to their professional skill and responsibility.

The training and supply of teachers was the subject of separate remit in 1949 to a National Advisory Council set up for this purpose. After looking at prospects for graduate teachers and youth leaders and the teachers of handicapped pupils, the N.A.C. in its fifth and sixth reports (1956 and 1957)

first argued the case for a three-year training for teachers and went on to discuss its scope and content. The Government accepted the recommendation, fixed 1960 as the first year of the three-year course, and in 1958 initiated a programme of college expansion to cater for the consequential increase of 50 per cent. in the student population of the general colleges. Decisions taken in 1959 and 1960, in the light of the worsening teacher supply prospect, doubled the total size of this expansion programme. The seventh report in 1962 revealed still gloomier prospects. It was followed first by immediate measures to increase student numbers and later by the decision to raise the figure to 80,000 by 1970. The eighth report, on the future pattern of the training and education of teachers, was forwarded by the Minister to the Robbins Committee. The Council also devoted much attention to the supply and training of teachers for further education institutions.

Advice on technological education was forthcoming within months of the end of the war in Europe and continued in a fairly steady stream into the early fifties. Several important changes of the last twenty years were prefigured in the report of the special committee on higher technological education (the Percy report, 1945). Its point of departure was: "first, that the position of Great Britain as a leading industrial nation is being endangered by a failure to secure the fullest possible application of science to industry; and second, that this failure is partly due to deficiencies in education". Ten C.A.T.'s were to emerge out of the recommendation for "a strictly limited number of technical colleges in which there should be developed technological courses of a standard comparable with that of university degree courses", while the suggestion for "a single institution for specialisation in a particular branch of technology" led direct to the national colleges, and a "technological qualification which will correspond with the university first degree" became in due course the Diploma in Technology.

The 1945 report also recommended regional advisory councils for all areas with a national counterpart, a framework completed in 1948 when the National Advisory Council on Education for Industry and Commerce came into being. The new N.A.C. reported on the future development of higher technological education in 1950. It recommended that increased financial assistance should be given to colleges engaged in advanced technology; that new courses should be developed in technical colleges in close association with industry; and that a Royal College of Technologists should be established to encourage the development in suitable technical colleges of advanced courses.

It was such studies as these—and the subsequent growth of experience and raising of standards—which provided a basis for the policies announced in the White Papers of 1956 and 1961 (*Technical Education* and *Better Opportunities in Technical Education*) and their implementation in terms of colleges and courses, not only at the level of technologists but also for supporting technicians, craftsmen and operatives. In 1959 the Advisory Committee on Further Education for Commerce recommended matching provision for careers in commerce, and developments since that date have brought facilities for business studies into line with those for scientific and technological studies.

Other advice tendered during the twenty years of the Ministry's existence was by the Ashby committee in 1954 on the organisation and finance of adult education, the first systematic review since 1919, and the basis of subsequent administration; by the Underwood report of 1955 on the education of maladjusted children, leading to a considerable expansion in the provision for this handicap; the Willis Jackson report of 1957 on the supply and training of teachers for technical colleges; the Roberts report of 1959 on the structure of the library service, which bore fruit in the Public Libraries and Museums Act 1964; and in 1960 the Albemarle report leading to a great increase in Government assistance to the Youth Service, the Anderson report on grants to students leading to legislation in 1962, and the Coldstream report on art education leading to the introduction of a diploma of graduate status.

This twenty-year flow of advice forms a corpus of developing educational doctrine, dedicated to the unspoken proposition that a society and its education cannot sensibly be considered, nor their interests properly advanced, save in terms of each other. The title of the 1947 C.A.C. report—*School and Life*—might well be taken as the title of the whole series, little as the range of future reports could then be foreseen. This has been the official educational literature of a generation, and to its successors it may appear to have been both realistic and consistent. Santayana once wrote that "to turn events into ideas is the function of literature". It may not unfairly be said of this literature that it has helped to turn ideas into events; for one of the most striking facts about the reports in retrospect is the debt which Government action has owed to them and their continuing potential to influence the educational events of the sixties.

Logistics

This part of the survey is not only about education. It is also about demography and economics: demography because where people and houses go, there must schools and teachers go also; economics because investment in educational plant is one among many claimants for limited resources. Beyond a certain point demographic forecasting is hazardous: birthrate trends can change without warning and population can move in answer to unforeseen industrial mutations. Educational plant on the other hand is likely to be long-lived and can be in the wrong place or in the wrong style, or both. Only a population stable in size and situation over a long time is likely to find a perfect match between the schools and colleges it needs and those which it has or can provide.

Britain's population since the war has not been stable either in size or in distribution and the consequences for educational planning have been considerable. But this was not all. Economic considerations as well as educational need have determined the rate of school and university building. Resources have been smaller than the education system would have wished and the central authorities have had difficult decisions to make. In the field of teacher supply the rising birthrate, coupled with the growing loss of young women teachers to marry and have families of their own, have posed the most stubborn problems. A quota system has helped to secure a more equitable distribution of the available teaching force.

Pupils, Students and Teachers

As the sixties approached mid-point all of these factors in a complex situation continued to operate. In January 1964 there were over seven million pupils in the maintained schools in England and Wales, 108,000 more than a year before and 660,000 more than ten years before. During the previous year the number of new houses completed was again around 270,000 and in 1964 was well above that. From the estimates of future births prepared by the Government Actuary's Department, in consultation with the Registrar General, it would appear that in the next ten years another two million could be added to the maintained school population. This estimate is of course swollen not only by the birth rate (on a number of important assumptions which may possibly not be wholly fulfilled), but also by the raising of the school leaving age in 1970-71 and by an expectation that considerable numbers will choose to remain at school beyond the minimum leaving age. For example, of the 17-years age group the proportion at school rose steadily from 7.86 per cent in 1954 to 12.52 in 1963 and could reach over a quarter by 1987. The furthest reach of the figures suggests that the maintained schools will have topped ten million (double the 1954 figures) by 1983 and 10½ million by 1990.

The demand for education beyond school level has continued to grow. In further education in England and Wales (other than in universities or in colleges of education) the number of students rose by nearly half in the ten years to November 1963 from 1.8 million to 2.65 million. Of special interest was an almost threefold increase in full-time students and the rapid development of the sandwich course. The number of day students rose from 361,000 to 613,000, a result mainly of the growth of day release.

There has also been a big expansion of the colleges of education, where the needs of the schools for teachers, arising from the growth in the school population, profoundly influenced the rate of growth. To maintain the staffing standard of 1963 an extra 120,000 teachers will be needed by 1981. To eliminate secondary classes over 30 and primary classes over 40 would increase this figure to over 200,000. In the ten years to 1964 the number of students in the colleges in England and Wales rose from 25,000 to over 60,000. In 1963 the Government announced an objective of 80,000 students in 1970, equivalent to an increase in the number of entrants from 16,000 in 1961 to over 27,000 in 1968. The Robbins Committee recommended that the colleges should be expanded still further to admit 40,000 students by 1974. The university population in Great Britain increased from 82,000 to 135,000 between 1954 and 1964, and in 1963 the Government accepted the Robbins Committee's recommendation that (including the colleges of advanced technology) it should reach 218,000 in 1973.

In the next few years, although the size of classes in secondary schools should continue to fall steadily, the primary schools are likely to be hard pressed. They will encounter first the numerous children born in the late 1950's, they are likely to suffer most from the high wastage rates of young women teachers, and they may be expected to gain less than the secondary schools from the growth in the number of graduates. On the other hand, they should be getting an increasing share of the output from the colleges

of education and will benefit from the growing return to full-time or part-time service of married women teachers.

Other parts of the education service will have their staffing problems, though none so intense as those of the schools. The Robbins estimate was that universities and colleges of education together would need 33,000 teachers in 1973 compared with 20,000 in 1963. The committee thought that after a few years of considerable difficulty the needs of higher education for teachers would be met by a plough-back proportionately no higher than in the previous four years. In the rest of further education it was the opinion of the Day Release Committee that 250,000 additional students by 1970 would require more than 5,000 teachers. The committee drew attention to the extent to which colleges draw on sources which did not conflict with the needs of the schools, pointing out that the experience of recent recruitment in a number of colleges suggested that more than half the full-time staff recruited from outside the further education system were drawn from industry or commerce.

Buildings

Just as most of the increase in the teaching force has gone to match the growing school population, allowing little over to reduce class sizes, so have many of the new school places been occupied by additional pupils, leaving little over to replace old and unsatisfactory buildings. Old buildings may be structurally sound and well maintained but ideas on the best environment for education have changed a good deal. Since 1962 an attempt has been made, on the basis of a questionnaire completed by local education authorities, to find out how much it would cost to bring all schools up to standard. It is much more difficult than it looks to get an answer that means very much, though there is no doubt that the amount of work required would be formidably large. The result was a figure of £1,368 million to bring all schools up to standard "on the Utopian hypothesis that it could somehow be done overnight".

Since 1962 major school building programmes have been authorised amounting to £350 million for the period up to 1966-67 and some further authorisations have been made for 1967-68. In November 1963 it was announced that in future programmes would be announced for two or three years at a time to assist forward planning. By Easter 1964 the greatest part of the £200 million school-building programme for the two-and-a-half years 1965-68 had been notified to local education authorities; and approval for further projects in the first two years was given later in the year. The starts authorised were to amount to £80 million in each of the two years 1965-66 and 1966-67 and to £40 million as a first instalment for 1967-68.

In the first of these years 787 projects were notified to be started at a cost of £79.2 million. Of these 542 were primary schools (£34 million) and 255 secondary (£45½ million). Most of the new primary schools and about half of the new secondary schools will provide essential new places in order to meet the increasing numbers of pupils and to serve areas of new housing. Such projects represented about 62 per cent of the total programme, the rest being for the improvement or replacement of existing school buildings. For 1966-67 there were 653 projects approved at £69 million, made up of 434 primary and 219 secondary (costing £27 million and £42 million). Basic

needs will again absorb most of the primary and half of the secondary projects. Projects so far announced for the third year total 142 (74 primary and 68 secondary) at a value of £18 million. A half of the primary and about a third of the secondary were for the provision of essential new places.

New building programmes for special schools were announced in April, providing for 75 new schools and ten major extensions in the two-and-a-half year period. This will yield 8,000 new places, including 6,600 for educationally sub-normal children and nearly 900 for maladjusted children. The cost of the programme was put at £10½ million.

In September, the Secretary of State (Mr. Quintin Hogg) announced that the value of the building programme for further education (not including the universities, the C.A.T.'s, the College of Aeronautics, the Royal College of Art, or the colleges of education) for 1966-67 had been settled at £27 million.

In the same month a building programme for universities and C.A.T.'s was announced covering the three years 1966 to 1969. This was the third announcement on university building programmes in the course of the year. The first, in February, was to the effect that building work started in 1964 would be increased from £33½ million to £48½ million. The second, in May, covered a 15-month period to March 1966 and provided for starts totalling £54½ million. The September announcement extended the programmes authorised to 1969 at a cost of £83 million for the additional three years. This programme was intended to produce buildings for use in the academic years 1968-69 to 1970-71. The statement containing these figures referred to exceptionally large programmes authorised in recent years which would not be required for the three years up to 1969. The opportunity would present itself for an orderly making good of obsolescence, for the further development of the new universities, for special allocations to technology, and for more student residence. It would also allow for preparations for the steep climb which would have to be resumed in later years. The figures for the second and third years of the 1966-67 to 1968-69 period (£25 million in each compared with £33 million in the first year) were described as provisional "until the University Grants Committee are in a position to advise more precisely than is at present possible".

The money value of all these educational building programmes together doubled in less than ten years. Continuous effort has been made to secure value for money, and further steps in this direction were taken in 1964. Measures to promote greater productivity in school and college building, in particular by the use of industrial methods, were described in a circular issued in February, in which local authorities were told that unless such methods were more widely used building programmes would become seriously delayed. It was pointed out that the demand for building was expected to rise by over 50 per cent in ten years with only a slight increase in the size of the building labour force: hence the urgent and continuing need for higher productivity. The circular referred also to the setting up of a building productivity group in the Department to give technical assistance with new and developing constructional systems and to work on such problems as dimensional co-ordination and the interchange of components between different systems.

A bulletin on controlling dimensions for educational building was published in July, with proposals for structural zones, ceiling height, floor and roof depths, changes of level and spacing of structural supports, as well as for staircases, doors, partitions, screens, windows and cladding. Another building bulletin, *Primary Schools Plans: A Second Selection*, discussed nineteen projects, all built within the primary school cost limit current at the time they were approved. A striking economy, the bulletin pointed out, had been achieved without surrendering the physical standards. In fact the latest primary school designs, while more economical in total area, were more generous and adaptable in the teaching space provided. It was noted that 16 per cent of major school projects started in 1962-63 used prefabrication systems.

Finance

Teachers' salaries are the main element in educational expenditure and loan charges for buildings and maintenance costs are other considerable items. It follows therefore from the foregoing chronicle of recruitment and expanding building programmes that educational spending has increased considerably. In 1963-64 total educational spending by public authorities in Great Britain (including school meals and milk) was £1,402 million, compared with £546 million ten years earlier. In money terms therefore expenditure was two-and-a-half times as large. The gross national product increased only half as fast as this, with the result that education increased its share of the total resources from just over three per cent to about five per cent.

Allowing for the increase in prices over the ten years, the actual provision of educational facilities and resources was about 75 per cent greater in 1963-64 than in 1953-54. Of this increase about half is attributed to an increase in the numbers of pupils and students, and about half to improvements in the standard of service provided.

In the financial year 1963-64 local authority expenditure on education (excluding meals and milk) increased from £809 million to £892 million. This rise of 10 per cent was again attributed in part to higher costs, in part to bigger numbers, in part to increased provision per head. The major increases were in the training of teachers, in awards to students at universities and in other further education, and in the provision of further education itself. The increase in teachers salaries was the main reason for a 7 per cent rise in the cost of primary and secondary schools; and the provision of new or improved buildings and equipment led to an 11 per cent increase in loan charges. Local authorities were re-imbursed from the Exchequer, via general grant and rate deficiency grant, to the extent of about 62 per cent. At negotiations with the local authorities in the autumn it was agreed that the estimated expenditure on education to be taken into account in determining the level of general grant for 1965-66 and 1966-67 should be £1,023 million and £1,081 million. During the year an internal review was in progress on the balance of central and local Government expenditure, including the rating system.

The direct expenditure of the Department, which rose from £159 million in 1962-63 to £177 million in 1963-64, is estimated to have risen further to £197 million, the increase being mainly in grants towards meals and milk,

direct grants, and teachers superannuation. In 1964-65 the Department became responsible for the Vote for universities and colleges which showed a rise from £110 million to £139 million. These expenditures (excluding meals and milk) raise the Exchequer's total participation to about 70 per cent of national public expenditure on education.

The acceptance in October 1963 of the Robbins target of 197,000 full-time university students in 1967-68 necessitated increases in the recurrent grants to existing universities for the remaining three years of the 1962-67 quinquennium. The effect was to raise the total estimated provision for the three years, including rates and salary supplementation, to about £275 million. The Standing Advisory Committee on Grants to Students, which last reviewed the standard maintenance grants in 1962, was asked to consider whether any charges should be made with effect from September 1965. Questionnaires about student expenditures were sent to all universities in May and to a representative selection of colleges of further education and colleges of education. Analyses of the replies were being considered at the end of the year.

The cost investigation unit engaged in a number of studies of establishments of varying type. Recommendations were made which would result in increased efficiency and a better use of resources. A research project was commissioned into the use of costing and other financial techniques in establishments of further education as aids to the most effective and economical use of available resources. It is apparent from inquiries reaching the Department that school and college authorities generally are giving more thought to the whole question of the efficient management of their institutions.

Expenditure on current research projects exceeded £100,000 in 1964 and the total commitment from the Department's research fund by the end of the year was £900,000. The range of research projects widened during the year and now reaches across all stages of the educational system. The finance of education, the relationship between sociological factors and education, and development in television and programmed learning are also being investigated. As the volume of research has grown the Department has made increasing use of the National Foundation for Educational Research and, as well as commissioning specific projects, has increased its annual contribution to the Foundation funds.

A joint study by the Department's Statistics Branch and the London School of Economics is seeking to create a computable model of the educational system, describing it both as it now exists and as it may develop. Such a model would assist forward logistical planning, enabling the implications of specified targets on stated assumptions to be more precisely foreseen.

Pedagogy

In the year in which final arrangements were being made to launch the Certificate of Secondary Education, and the Secondary School Examinations Council was making ready to hand over to the Schools Council for the Curriculum and Examinations, there was a mood of re-appraisal throughout the schools and universities on what is taught and how it is taught and how it ought to be examined.

What is Taught

It was in the primary schools (and perhaps before that in the nursery classes) that changing ideas were pioneered a generation ago, and it may have been some of the effects—moving up with the scholars—that touched off new thinking in the secondary schools. Not that the revolution in the primary schools has spent itself: in 1964 mathematics and science and language teaching were all—through the work of teams sponsored by the Nuffield Foundation—getting a new look. In a number of selected areas, for example, children were purposefully looking at trees in parks and walking around building sites, in preparation for what may issue as a new handbook of introductory science for five-to-thirteen year olds. The mathematics programme, too, was using the “discovery” approach to learning, and new material for both mathematics and science was being tested in “leader” courses and is expected to be generally available in September. Meanwhile the first-year material for primary school French is being used by nearly 6,000 children in thirteen different localities, selected teachers having completed the first series of in-service courses of training. Another 48 local education authorities joined this scheme as associate members; and the National Foundation for Educational Research with finance provided by the Department took over its objective evaluation. An experiment in teaching children their own language by means of the Initial Teaching Alphabet had so far progressed as to encourage the Department to put £9,000 into further investigations. Above all of course the C.A.C. was acquainting itself at first hand with the work of the primary schools in a variety of settings and had commissioned a number of research projects.

In the secondary schools meanwhile a complex of factors was pressing educationalists to a re-examination of the curriculum. The pace and direction of change in society itself was one. The lengthening of school life—voluntarily at present and compulsorily by the next decade—was another. The need for more school-leavers to possess a leaving certificate, without having paid the price of following courses for which they were unsuited, was perhaps the most compelling. So questions were being directed at almost every subject in the syllabus.

What account should be taken of a pupil's environment in developing the relationship between language and literature? How would foreign language teaching respond to the facts of foreign travel and new pieces of teaching hardware in the schools? Is a growing variety in mathematical syllabuses consistent with the conferment of a common corpus of mathematical ideas and methods? To what major themes of science should the younger school-leavers be exposed? How up-to-date are science syllabuses in the age of atomic power and the latest breakthrough in biology? Should history

teaching end with the nineteenth century, or begin with the twentieth? Should divinity take account of the new knowledge of the psychological development of children and of the changing perspectives of theologians? Should economics have a place in the syllabus as more children become aware of affluence and ought to know more about its basic conditions?

Further work was done during the year on the three separate Nuffield projects—in physics, chemistry, and biology, leading to the “O” level of the G.C.E.—for which planning was begun in the Spring of 1962. Classroom trials of the material began in September and are planned to continue throughout the present school year. About 150 widely scattered schools of varying kinds are taking part in feeding back comment and criticisms. Publication of the material in developed form (including class texts, teachers' guides, laboratory notes, apparatus and visual aids) is expected early in 1966. Meanwhile there have been preliminary reports of experimental work on aspects of modern physics with particular reference to atomic structure, undertaken by thirty schools under the auspices of the Association for Science Education and the S.S.E.C. Preliminary planning of new material for “A” level science began, with an eye to the possibility of some common course work for chemistry and physics and some study in depth of subjects from non-scientific disciplines.

All told there are a dozen or so sizeable projects of curricular development in progress in relation to primary and secondary schools, two-thirds sponsored by the Nuffield Foundation or by the Foundation jointly with the Department. In general sponsorship of curriculum development projects will in future be exercised by the Schools Council and not directly by the Department. In association with the Secretary of State for Scotland and the Nuffield Foundation, the Secretary of State announced in October the setting up of a Committee for Research and Development in Modern Languages. The committee is representative of the whole field of education and is expected to play a major part in guiding future developments ranging from fundamental research into linguistics to the teaching of languages.

In the technical colleges some—but not all—of the current questions had a strong vocational ring. To what extent should industry determine the content of the curricula or decide which courses should be provided at local colleges? Where does the specifically educational task of the college shade off into the specifically training task of the employer? What does it mean to improve the general education of college students, and are employers to be persuaded of its worthwhileness in limited economic terms? In the year of the Industrial Training Act and the Report on Day Release questions such as these were being asked with a new urgency. The National Council for Technological Awards pointed out, in the year in which it was making ready to hand over to the new C.N.A.A., that the Dip. Tech. courses had been developed “so as to attract good students who prefer a course which brings them into contact directly with industry during their undergraduate days”. A related train of thought was expressed by Sir Willis Jackson at the third Commonwealth Education Conference in Ottawa. “The successful pursuit of technology,” he said, “demands characteristics and attitudes of mind and concepts of purpose which may be inhibited, rather than stimulated, by the emphasis on research for its own sake which, no doubt rightly, characterises the university science schools”. For students on technological

and technical courses "it is of great importance . . . to appreciate that they must be able to deal not only with the technicalities of new situations, but also to handle the human problems which flow inevitably from the processes of change of which they will be the agents if not the initiators".

In the universities (to quote from the annual report of one of them) there was "a growing realisation that degree schemes which are more broadly based than the traditional single-subject schemes are both educationally and academically worthwhile, that there is a demand for them and that they provide a good preparation for a variety of careers"; and experiments were continuing in the introduction of arts subjects into the science curriculum and *vice versa*. Writing of the new universities in its quinquennial report on *University Development* the U.G.C. drew attention in February to the fact that all the academic planning boards showed the same desire to guard against the dangers of excessive specialisation. The Committee commented: "Perhaps the clearest indication of the new universities' determination to broaden curricula is seen in the efforts which they have made to break down the departmental barriers that have characterised some of the older universities and which have often stood in the way of an integrated selection of courses from a number of departments to provide some breadth in education". But it was not only in the new universities that new approaches were being made. When a Cambridge historian says "the prime activity should be to teach non-historians", and classicists are counselled to revise their teaching programme "to meet the needs of youngsters who will become engineers or historians or academic scientists or civil servants", and the professors of English literature are commended to a much wider and livelier role in spreading literary sympathies and interests among a much larger body of students who are not specially engaged with literature at all, it is not difficult to discern a direction in the movement of the waters—or at least a hint that the tide may be on the point of turning*.

A similar concern for wider contexts was being commended also in relation to courses as far apart in subject as art and business. "Somehow", said the first report of the National Council for Diplomas in Art and Design, published in February, "the atlas of historic time has to be made valid and comprehensible while at the same time the student's interest must be engaged at once in the real stuff of art history—the objects of art with which it and he are concerned". And the Crick report in March, recommending a national honours degree award in business studies, said the basic disciplines were economics, sociology and mathematics, and added: "But in studying and using these disciplines the student must be helped to develop qualities of imagination and enterprise, and powers of understanding, criticism and judgment if he is to be successful in a business career".

How it is Taught

The line has already been crossed from the "what" of the curriculum into the "how". Indeed the line becomes less and less real as the walls between subjects are scaled or breached and free trade sets in across the syllabus. It is perhaps a signpost to the new territories we must explore that the Schools Council, at its first meeting in October, chose two inquiries that concerned approach rather than subject and a third that concerned all

* These quotations are from a symposium published during the year with the title "Crisis in the Humanities" (Penguin Books).

subjects. The first was the work of the sixth form and its relationship to entry into higher education. The second was to follow up the recommendations of the Newsom report in preparation for the raising of the school-leaving age. The third was a major study of English language teaching from nursery schools to university entry, with particular reference to the difficulties in communication leading to educational and social wastage.

It is an interesting reflection that in the same year—indeed in the same few weeks—in which the Schools Council began to look at approaches to the curriculum in schools there was published, not one, but two reviews of teaching methods in higher education. The first, which covered colleges of education and the technical colleges as well as the universities, came in Appendix Two (B) of the Robbins Report. The second was the work of a sub-committee appointed by the U.G.C. under Sir Edward Hale and related to universities alone; but it contained one statement applicable to all stages of education. If, it said, the projected expansion is to take place and the standard of teaching is to be maintained during the expansion, "with no more than legitimate claims on national revenue and on the limited pool of ability, ways will have to be found of making better use of university buildings and plant and of the time of university teachers".

Meanwhile against that criterion it may have seemed startling that students in all forms of higher education were (according to the Robbins Appendix) practically unanimous in wanting more time devoted to tutorials and seminars, which of all forms of teaching are the most expensive in the use of teaching time. No doubt if asked the same question, in terms they could understand, primary school children in classes of forty and more would also have voted for more of the teachers' time to be devoted to their individual needs. An analysis of students' views of supervision arrangements showed (in the words of the Appendix) "that students attach considerable importance to having access to an individual supervisor". Those words also would be willingly echoed at other stages.

So far as buildings are concerned an N.A.C.E.I.C. inquiry was on foot in 1964 into the utilisation of space in the technical colleges, and the colleges of education were planning to use their teaching facilities more intensively as part of the process of raising their student population to 80,000 by 1970. At Manchester a study was being made to assess the effectiveness of selection, training and examining in the light of subsequent teaching performance. At Keele there was a comparative study of the three-year concurrent and the one-year post-graduate courses in education. On teaching aids the Department was supporting from its research fund a dozen or more projects. The potentialities of audio-visual aids in higher scientific education are being investigated by a committee under Dr. Brynmor Jones.

It was as recently as 1961 that the first language laboratory to be commissioned by a local authority went into action in Ealing. Yet already nearly twenty manufacturers are said to be interested in the British market and the laboratories are being spoken of as education "status symbols". The change has been wrought by a convergence of technical innovation, pedagogic questioning, and economic challenge. In its pamphlet on *Modern Languages* in 1956 the Ministry noted that the tape recorder was "frequently used in language teaching today as a means of enabling pupils to listen to their own voices". At the same time dissatisfaction was growing with the grammatical

and literary approach to language learning. Finally the growing importance of foreign trade and foreign travel lifted the subject out of the classroom and into the lives of businessmen and housewives. But what may in the long run be the most significant aspect of the innovation is that the arrival of the language laboratory is prompting teachers to ask basic questions about the whole purpose of language instruction, indeed about the nature of language and the nature of learning. At university level the Hale Committee was surprised to find only one teacher of French in three using recorded material, but added that "the use of language laboratories serving a variety of purposes is spreading rapidly among the universities".

Closely associated with the language laboratories is programmed learning, which was the subject of a memorandum by the Ministry in March. As then recorded the number of local authorities experimenting in this field had risen in twelve months from fourteen to thirty-eight, as more came to realise the useful part this technique may play in freeing teachers from repetitive work to use their professional skills to greater effect. In the words of an American observer: "If through new technical devices, such as audio-visual aids and programmed learning, we free the teacher from routine instruction, from imparting information and questioning about facts and computations, then the teacher can face up to the essential tasks of inspiring, stimulating, and encouraging students to bring out the best they have to offer". The use of programmed learning in universities was thought by the Hale Committee to be more limited than in schools yet worthy of further investigation by way of inter-university co-operation. A proposal is under discussion with a university department of education for the development of an information and research centre, supported by the Department's research fund, over the whole field of programmed learning. Meanwhile the London University Institute of Education, in collaboration with the L.C.C., is investigating the classroom conditions under which programmed learning techniques can be used with maximum effect.

A survey by the Educational Foundation for Visual Aids, published by the National Committee in July, showed that closed circuit television would be installed by September in seven secondary schools, thirteen colleges of education, and 33 establishments of further education. Among the uses are close-up views of small-scale operations and of dangerous or noisy experiments and workshop practices, transmission of a single teacher's lessons to linked classes, and class observation by student teachers. Two authorities were thinking of linking their schools and colleges to a central studio.

In 1964 about 8,500 schools were receiving broadcast television (compared with 6,000 a year earlier) and hundreds of programmes were broadcast by the BBC and ITV aimed at age groups from six to eight to school-leaving age and beyond, catering in varying ways for all types of secondary school over a wide band of the syllabus. New programmes in 1964 included a history series for primary schools, social and economic history for sixth forms, and a science programme for the sixth form arts specialists. In technical colleges the series on engineering science was becoming established, and a new series began on social pressures. There were also new experimental series in adult education, including one for primary school mathematics teachers and another on elementary mathematics. The scope for develop-

ment remains to be fully explored; there are problems of timetabling and follow-up—and in the longer term of school architecture—where fuller experience is required. Meanwhile a useful and informative assessment based on a study in maintained schools of all types in Nottingham was made by Professor Becker, one of five American television experts visiting this country on Fulbright Fellowships. An interesting comment was that in general "one finds a greater tendency to be critical of the G.C.E. and C.S.E. among teachers who are using television than among those who are not, even within the same type of school", and "some feel that their freedom to adjust the syllabus for optimum utilisation of the programme is limited by the inflexibility of the examining syllabus".

How It Is Examined

This is the point at which every contemporary discussion about education sooner or later arrives. In a wider setting the problem was formulated in March by a working party under Sir John Lockwood which recommended the setting up of the Schools Council. "The schools, and particularly the secondary schools, find that the opportunity for independent initiative and experiment is being reduced by a complex of decisions and pressures which they cannot sufficiently control or influence. They consider, in our view rightly, that the underlying trend is towards an excessive standardisation of their work, and away from that variety of syllabus content and teaching methods which is desirable if our educational system is to be in any real sense alive."

In the last year of its life, before transmitting a living heritage of problems to the new Schools Council, the Secondary School Examinations Council published (as its eighth report) a strong criticism of English language examinations, a bulletin on experimental examinations in mathematics for the C.S.E., and two general bulletins designed to assist teachers in the art of examining.

Of the G.C.E. "O" level papers in English the Council said bluntly that a qualification in the subject was so generally required for entry to the profession and to higher education that there was "great pressure on the teacher to sacrifice all other considerations to the need to get the mass of his pupils through". The result, as the Council described it, was not a happy one (for example in requiring exercises in rules of grammar which "have had little relevance to usage at any past time and have even less to contemporary usage") and its committee of experts came very near to advising that such examinations should cease.

It was with the forthcoming examinations for the C.S.E. that the Council's three further bulletins were concerned. The "maths" experiment, drawn up with a view to avoiding cramming, was conducted in seven different areas of England and Wales and involved some grammar and technical schools as well as secondary modern schools. The aim was to find a method of testing which would at least reduce the danger that the new examinations would "dominate, control and ossify the work of the school by the imposition of rigid and restricted syllabuses", and—more positively—would test the candidates' grasp of mathematical concepts and their ability to apply them in a large number of different situations. The

Council was cautious in the conclusions it drew: other methods of discouraging guesswork were being considered and more experiment was needed. They did however draw one firm conclusion that should have warmed hearts in many schools: the experiment had shown "that pupils in secondary modern schools are already learning mathematics 'in the broad'; that they are assimilating concepts, and not only tricks and techniques . . . the pupils and the teachers . . . have therefore contributed evidence of a growth in the mathematical stature of the secondary modern schools which promises much for the future".

The other two bulletins were addressed to more general problems of examining: one summarising what is known about the techniques for making them more efficient instruments, and the other exploring the advantages and disadvantages of objective-type examinations (in which each question is set in such a way as to have only one correct answer). The former was as a whole an intellectually demanding document, but to ease the processes of assimilation the Department prepared also a precis of the main points as the first of a new series of notes under the general heading *Education Information*. Although written with the C.S.E. particularly in mind the bulletin and the precis may be of value to teachers and others concerned with the G.C.E. and other examinations. The bulletin on objective-type examinations, written by Professor P. E. Vernon, was published by the Council not as an expression of policy but to help teachers and examiners to reach their own decisions.

One of the last acts of the S.S.E.C. was to appoint a joint committee with membership drawn from the Syllabus and Standing Committees "to consider the future relationship between the examinations for the ordinary level of the G.C.E. and for the C.S.E., and to make recommendations". In particular the joint committee is considering how best to ensure that secondary school examinations are so organised and conducted as to assist the schools to base their choices on the sole criterion of the educational needs of the pupils.

Examinations are one respect, as the Hale Committee noted, in which universities differ from schools, namely in the extent to which teachers and examiners are the same people. It is true that, even in universities, the student's teacher and his examiner are not always the same, but "university teachers as a whole regard their examination arrangements with satisfaction, and this is perhaps only what might be expected when the great majority of teachers participate in the work of examining". The extension of teacher control of examinations at school level will, it may be hoped, yield a similar dividend in satisfaction. At the same time the Hale Committee noted and welcomed innovations and gave two reasons. "With so much depending on examinations, it is clearly of great importance that they should measure as well as possible, not only the knowledge which the candidate has acquired of his subject or subjects, but also the qualities and habits of mind for which a degree, and its class, may be expected to vouch. The second reason is that the form and content of the examinations for which he prepared cannot fail to have a considerable effect on the education of the student and on the ideas and habits of work that he acquires". The same thoughts may apply no less to examinations at earlier stages in the educational process.

Conclusion

On the events noted in this survey three concluding comments of a general character may be made.

The first is that in the administrative field it was a year crowded with incident and innovation. The Ministry itself was absorbed into a new Department of State, with wider responsibilities that included the universities. The Schools Council was established with full backing from all parts of the education service and embarked on a heavy programme of work. A Bill was presented to Parliament to provide new machinery for the determination of teachers' salaries. Throughout the country new schemes of secondary school organisation were being planned, and it was announced that national policy would be on comprehensive lines. The Industrial Training Act became law and the first training boards were established. The colleges of advanced technology prepared for university status. The teacher training colleges were renamed and invited with universities to prepare degree courses. A Council for National Academic Awards was created to award degrees to students outside the universities.

Secondly, the shortage of teachers and the limitations on new educational building continued—and are likely to remain—the subject of anxious thought on the part of all concerned for further educational advance. Neither the growth in the teaching force that has taken place, nor the resources that have been channelled into new schools and colleges, has been sufficient both to keep abreast of rising numbers and to meet the desire for higher standards and wider provision in all parts of the service. With the utmost that is likely to be accomplished in the years immediately ahead the pressure on building and staff is likely to continue. The use of the resources that are available, of skilled professional staff and of buildings and equipment, must therefore be flexible and imaginative and supported by increased use of auxiliary staff and audio-visual aids.

Finally, in the educative process itself the year has shown increasing concern with the aims of education and how the devices of curriculum and teaching method and assessment may better serve the interest of pupil and student. Teachers throughout the service are combating the danger, noted by the Hale Committee, "that the student will spend too much of the limited time at his disposal on memorising facts, and will have insufficient time to master the principles underlying his subject and to develop his powers of thought". There is evident a conscious striving after that pursuit of the balanced man which has engaged educationists at decisive stages in the evolution of the Western tradition.