FORUM

for the discussion of

NEW TRENDS IN EDUCATION

contents

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FORUM

Index to Volume 1

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Index to Volume 2

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CHIEF CONTENTS

A New Journal

With this number, a new educational journal is brought to birth. FORUM must be seen as an expression of the educational ferment of the present time. From the generous response to the summer publicity, it is clear that FORUM can act as a focus for discussion of new trends in education, and that many teachers, administrators and others feel the need for such a journal.

What are these new trends? The contents of this first number indicate a few of the most important: the new types of school developing in different parts of the country; the steps taken by modern secondary schools to transcend their earlier limitations; re-appraisal of such features of internal school organisation as streaming; new approaches to the content of education. It is with issues of this kind that this journal will be specifically concerned. Our aim is both to provide a basis of facts and ideas which may be helpful to those working in these fields, and to act as a forum for a lively discussion and exchange of experience among those most closely concerned.

We appeal to our readers from the outset not to hold back, but to send in their contributions so that FORUM can really fulfil its function. In future we hope to be able to devote a good deal of space to such discussion, and rather less to major articles. Since FORUM will appear only three times a year we do not propose to carry a correspondence column. Contributions to discussion, on the issues raised in this first number (or on other questions) should be written as articles or statements, and limited to 800 words. We should especially welcome accounts of the experiences of practising teachers. Major articles, which should not exceed 2,500 words, are also invited.

If FORUM is really to reflect current trends and meet the needs of its subscribers, it must rely more than most journals on the suggestions and criticisms of its readers. We hope that these will be forthcoming. Further, if it is to be kept in being, the journal needs active support and assistance. We calculate that we need a minimum circulation of 2,000 before we are economically secure—3,000 would enable us to expand the journal and build up some reserve against the second year's publication.

The response to our initial circularisation in the summer showed a great amount of goodwill, and many people have helped most actively to get the journal known. Even before publication, we had already close on 1,000 subscribers; of these some 33% are from modern schools, 12% from grammar schools, 11% from comprehensive and bilateral schools and 8% from junior schools; some 11% of our subscribers are administrators. The rest fall into miscellaneous categories. But it has not been possible systematically to circularise all assistant teachers, parents and others who might wish to support FORUM. There is, therefore, a vast field of potential subscribers still untouched.

We therefore must ask our readers to help us in making the journal widely known and in converting the goodwill that undoubtedly exists into many tangible eight and sixpenny subscrip-

tions. Elsewhere in this number is a subscription form which could be used for this purpose. We have, in addition, leaflets available for distribution which will be supplied free on request. Further, we will supply copies of this first number on sale or return to anyone who is prepared either to sell them as single copies (at three shillings), or, preferably, to use them to obtain annual subscriptions commencing with the first or second number (at eight and sixpence). Precise details of this scheme will be sent to anyone who is prepared to assist.

An effort of this kind, on a wide scale, is necessary to establish a journal which, we hope, will be felt by its readers to belong to them. We will report progress in the second number.

The London School Plan: The Present Stage

H. RAYMOND KING

THE LONDON SCHOOL PLAN was adopted by the London County Council in March, 1947, and approved by the Minister of Education in February, 1950. This far-reaching, long-term plan for primary and secondary education in London was published in 1947 in a large volume, accompanied by a series of area maps illustrating the proposed developments.

The most momentous educational feature of the plan was the bold and imaginative conception of reorganising secondary education in a system of comprehensive schools. It envisaged 103 comprehensive high school units, of which 67 were to be planned as county high schools. The remaining units were to be formed by associating " county complements " with 36 of the former aided secondary schools in order to realise the comprehensive idea as fully as possible; for the Council had no powers under the Education Act to make building grants to these schools if they became " voluntary aided " or to enlarge them to house county pupils if they chose " voluntary controlled " status. There remained 66 denominational secondary schools and one undenominational one which were left outside the comprehensive scheme. Finally, free places in independent and direct grant schools, initially to the number of 2,500, were to be taken up by the Council.

The plan for comprehensive secondary schools had been adopted by the Council as early as 1st August, 1944. It is remarkable that, in spite of accommodation problems due to the destruction of schools by bombing, the raising of the school leaving age and later the " bulge," as well as other difficulties, the original plan survived virtually intact. Further, violent attacks were launched which tended to blur the educational issues. It may well be, however, that sponsorship by the dominant party in the L.C.C., in a spirit rather toughened than tamed by the violence of the opposition, was necessary to carry the plan through the early critical and difficult years and to bring it to the stage it has now reached. The London comprehensive schools have had to make their way against much bitter opposition. It is only just beginning to be possible to see them, and their counterparts in the rest of the country, as the spearhead of a general trend towards a more comprehensive organisation of secondary education; a development now realised to be so necessary as to be inevitable, though it may take place in varied forms.

A strong sheet-anchor of the comprehensive principle has been the conception of the London School Plan as the educational complement of the County of London Plan with its sociological basis and implications. Recognition of the Education Act of 1944 as the first great instalment of social reconstruction after the war similarly buttressed the plan. The White Paper which heralded the Act had stressed that its main objects would be the promotion of greater equality of educational opportunity and the fostering through education of a " more closely knit society." These objects are clearly envisaged in the London School Plan. But the

L.C.C. Education Committee had no intention of achieving them at the cost of levelling down. They aimed at quality as well as equality, and to judge by the new schools they have clearly achieved this.

Within the limits of permitted expenditure, scaled down by the Ministry while the costs of labour and material were continually rising, London has made magnificent provision for its new schools. This is a remarkable and inspiring achievement. While economy in the sense of retrenchment has not been allowed too seriously to affect strictly educational facilities, economy in the true sense is achieved in the larger schools where facilities are available to the maximum number and deployed to the greatest advantage.

Buildings do not, perhaps, fully meet the social requirements of the large school, as the L.C.C. would have wished. To a considerable extent social amenities have had to be improvised, as has always been the case in the secondary school of traditional size and scope. Nevertheless, visitors to the new London schools are struck by their internal lay-out, beauty and design. These are places for gracious and spacious living, and the school communities are solving their problems of human and social relations in a variety of promising and effective ways.

Comprehensive re-groupings

A progress report on the London plan which dealt only with comprehensive schools proper would be inadequate and misleading. While the new comprehensive units are gradually being established in new or adapted buildings, the remaining secondary schools, still the majority, have demands which it is the L.C.C.'s policy to meet as fully as possible. Under the plan most of the secondary schools were included in comprehensive groupings for which, sooner or later, new, or extended and adapted, buildings were to be provided. But it was soon apparent that the new accommodation planned for the years up to 1960 would barely suffice to house the expected increase in the secondary population. This meant that existing buildings could not be dispensed with; in fact, they would have to be supplemented by any primary school buildings that became redundant.

This might have left many schools with the bleak prospect of continuing for an indefinite period in out-of-date buildings, inadequately equipped to provide the secondary education envisaged by the Act. But this problem—if not its eventual extent—had been foreseen. To meet it the L.C.C. began, in 1954, a complete survey of secondary school organisation and accommodation. There followed a rapidly devised plan for a series of minor comprehensive regroupings, co-ordinated area by area, to take effect with the least possible delay within the framework of the original project. By amalgamating, expanding and linking schools (other than grammar schools) into larger units capable of offering special courses, the Council endeavoured to provide pupils in existing buildings with opportunities approximating more closely to those provided by the new schools. In addition the older schools benefited, in common with the rest, from the Council's sustained effort to improve provision for science, libraries and general amenities.

To look at the total picture, then, is to find that a tremendous change has been effected in the organisation of London secondary education in the last four years. With the opening of Kidbrooke, in 1954, the comprehensive idea was at last embodied in premises adequately designed for their purpose. The major comprehensive plan now rapidly began to take shape while minor reorganisation continued.

Early arrangements

Experiments and interim arrangements in anticipation of the plan had already been in progress for some years. In 1946-47, five central schools were expanded by the addition of one or more neighbouring secondary schools; each group of schools was organised as a single unit, buildings and resources being pooled, though organisation often presented some difficulty. The following year three more central schools were transformed into interim comprehensive schools in the same way. The heads of the eight schools, and later some others in charge of similar experiments, were brought together in a small standing conference with members of the administration and inspectorate from County Hall, so that experiences could be exchanged and evaluated.

Though these schools suffered from obvious limitations, it was found that certain educational advantages associated with comprehensive

schools soon began to be manifested. Pupils who could normally have left school at 15 stayed on in significant numbers, a proportion of them successfully taking G.C.E. and building up sixth forms. Less able pupils also clearly derived both educational and social benefit from the arrangement. Of the eight interim schools—Battersea, Haverstock, two at Hammersmith, two at Peckham, Walworth, West Norwood—all but the first now have new or extended buildings and have developed further under the plan.

A list of the new comprehensive schools, in the order of opening, giving the number of pupils and whether single sex or mixed, may be of interest, since this information is nowhere readily available. (Those marked with an asterisk were formerly L.C.C. grammar schools).

LONDON SCHOOL PLAN, 1954-8

	Comprehensive Schools	*County Complements*
1954	Kidbrooke (2,160 girls)	
1955	Woodberry Down (1,250 mixed) *Holloway (1,350 boys) *Mayfield (2,130 girls)	Catfield (1,190 girls) Dick Shepherd (960 girls)
1956	Elliott (2,160 mixed) Eltham Green (2,160 mixed) *Parliament Hill (1,350 girls) Tulse Hill (2,160 boys) Forest Hill (1,320 boys) *Sydenham (1,650 girls) *Wandsworth (2,130 boys)	Hurlingham (910 girls plus 600 added later) Kynaston (810 boys) Samuel Pepys (1,150 boys)
1957	Sedgehill (2,070 mixed) Crown Woods (2,160 mixed)	Christopher Wren (1,110 boys) Hammersmith (1,110 girls) Spencer Park (810 boys)
1958	Mallory (1,700 mixed) Holland Park (2,160 mixed) Kingsdale(2,160mixed) Garratt Green (2,190 girls)	Peckham (1,590 girls)

Looking ahead, to the peak of the secondary school population curve in 1960-1, it is planned to add ten more comprehensive schools and five more county complements by this time; though the effect of the most recent cuts on this perspective is not yet clear. In addition, four more schools will be housed in buildings eventually to be used as county colleges.

Of the 27 fully comprehensive schools listed above, 15 are co-educational; but those expanded from grammar schools, or originally intended to develop from grammar schools, are single-sex, as also are the county complements associated with grammar schools. The newly-founded comprehensive schools are mainly co-educational.

The present stage

The technical secondary schools, which before the Act were junior technical schools for pupils of 13 to 16 and usually housed in the buildings of technical colleges, are now fully integrated with the secondary system and have either moved into a comprehensive unit or been amalgamated with modern schools. At Poplar, however, the school still remains in the technical college, while Borough Beaufoy, Ebury and Woolwich continue as separate units in their own premises. Provision for technical secondary education has been considerably increased as a result of the new facilities in comprehensive schools and county complements, and by the institution of courses in many other secondary schools, particularly the larger ones.

It should also be noted that, by the close of the period 1952-60, 20 voluntary secondary schools will have been opened in new buildings.

In sum, taking into account the comprehensive schools and the interim minor comprehensive regroupings in areas, the greater part of the secondary school population will be in larger schools of 700 to 2,000 or more by 1960. In seven noteworthy years, from 1954 to 1961, London will have opened some 40% of the comprehensive schools envisaged in the London plan. It will then be possible to take stock and look to the future. The passing of the ' bulge ' will create a new situation to be met by further plans, already in the making. But it is already assumed that, during the period 1960-65, most children over 11 will be in schools offering at least five-year courses.

Certain problems raised by the London comprehensive scheme are very relevant to a

progress report, and deserve attention. But within the limits of this article, only an outline of one problem can be given.

A balanced entry

The comprehensive schools are not being allowed to exploit their attractions so that they become in any way selective at the expense of the rest of the secondary schools. Each must conform to the principle of the " balanced entry," taking in children over the whole of the ability range from the " delimited area." This has the effect of restricting recruitment to a defined community or neighbourhood. It is calculated that, as a result of parental choice, at least 80% of the pupils transferred at 11 will come from this area. The rest are to be drawn from outside, according to the distance they live from the school and in order to preserve or rectify the balance of the intake.

This policy of enforcing what may be called the full doctrine, in what is only a partially comprehensive system, operates to the disadvantage of the comprehensive schools. At present there is no means of securing a " balanced output " from the primary schools. Not only is there no direction of pupils to the comprehensive school, but the high ability group has every inducement to contract out. By far the greater proportion of grammar school education in London is still provided in separate schools. As a result it is still expedient to award " grammar school " places, though not under that designation, according to performance in the Junior Leaving Examination. This perpetuates the idea that pupils " win scholarships " which entitle them to choose a grammar school. Neither they nor their parents, nor often the primary school heads, are by any means generally persuaded that " successful " children in this sense should go to the same school as the rest who have " failed ". There is no incentive to try for a place in a comprehensive school.

Under such conditions the comprehensive schools are clearly in a difficult position, in a highly competitive field, in their attempt to balance their intake in the upper ability range. Whether the comprehensive service eventually becomes complementary to the grammar school service remains an open question.

If the comprehensive plan is to be fully vindicated, there must be a joint effort of the whole service, primary and secondary alike; more permissive treatment from the administration, according to the local situation, during the critical years when the schools are becoming established; education of parents and the public generally as to their actualities and potentialities. It is probable that this battle could be won in the localities by vigorous initiative and enterprise on the part of the schools themselves, encouraged and supported by the authority. It might be best for a more widespread, acceptable and effectual operation of the comprehensive principle to come about in this way.

Successful pioneering

Internally the schools have shown great initiative and enterprise. They will certainly succeed, as schools, in their educational task. The large school has proved viable. The problems and difficulties which loomed so large in the imagination of the critics and opponents have found practical solutions. These cannot be described in terms of either teaching or social arrangements adopted in all the schools. No two are alike. But all pupils accept school uniform, homework and social responsibility as they do in the grammar schools; many more are staying on beyond 15, sometimes up to 80%.

The grammar school which has expanded to become comprehensive now finds itself where it should be; it is an integral part of a complete secondary service providing wider opportunities for its pupils without any deterioration in standards.

To teach in a London comprehensive school is an exhilarating and, it must be added, a strenuous experience. Such a school fully embodies the conception underlying the London plan and helps to spread it more widely. From the start, those who understand and sympathise with the comprehensive idea have realised that it involves far-reaching changes, not only in administration and organisation, but in the whole conception of the nature and purposes of education at the secondary stage.

A new film strip in colour, " The Water Babies," has been issued by Educational Productions Ltd. It is based on a puppet play version of Charles Kingsley's famous story. There are 23 frames, and the price is 25/-.

The Leicestershire Experiment: First Year at Hinckley

(1) F. OLDHAM, Headmaster, Hinckley Grammar School

THE LEICESTERSHIRE PLAN, adopted by the county education committee in April, 1957, is designed to eliminate the 11+ examination without bringing all children within a single comprehensive school. It envisages the transformation of modern schools into high schools, to which all children will go from the primary schools: the majority at 11, the cleverest 10% (internally selected) at the age of 10. After three years there, those children whose parents guarantee to keep them at school at least until 16 may enter the grammar school—thus fitted roughly end-on to the high schools—without examination. The remainder will stay in the high schools for their final year and leave at 15.

This plan was introduced in two areas of the county in September, 1957. One of these, greater Hinckley, with a population of 40,000, had four modern schools and one four-stream grammar school. It therefore provided an ideal centre for trying out the experiment, because present buildings could be used to house units small enough for the head to carry out those pastoral and teaching duties which distinguish him from the pure administrator. But, in order to make the transition smooth, to overcome staff problems during the change-over, and to meet the problem of the ' bulge ' in the birthrate, it was decided to introduce a modification: for three years the grammar school would take 12½% of the primary school leavers at 11 as well as entrants aged 14 from the high schools.

The high school

The first step was taken in the spring of 1957 when the heads of the high schools and the grammar school and representatives of the authority met to work out plans. After their adoption by the education committee it was necessary to convince parents that the new scheme would mark a step forward and to explain how it would work. Meetings were called of the parents of children aged 11 at which the modification of the plan was explained. The heads of the high schools interviewed all parents of children aged 14 who wished to transfer to the grammar school. Meanwhile changes within the schools were also discussed and arranged.

The high schools, which now had to cater for pupils of 10 to 11 who would formerly have won a grammar school place, found it necessary to introduce immediate changes: (1) a widening of the curriculum to include all subjects taken in the lower forms of the grammar school; (2) the appointment of staff to cover these subjects; (3) a modification of hours to come into line with the grammar school; (4) the introduction of homework. It was decided to stream all the entrants and to provide for the able pupils a course identical with that followed during the first two years at the grammar school. These are the different subjects in the timetable with the number of periods devoted to each: English language and literature (6), history (3), geography (3), French (4), Latin (4), mathematics (6), science (4), handicraft or domestic science (2), music (1), art (2), scripture (1), physical training and games (4).

This meant that specialist teachers must be appointed to cover subjects hitherto omitted from the curriculum. This problem was solved by the creation of posts of special responsibility. A series of joint meetings was held between the staffs of the high schools and of the grammar school to discuss the co-ordination of syllabuses, text-books and, in science, apparatus and schemes for suitable experiments. Here, as headmaster of the grammar school, I would emphasise that the grammar school staff acted only in an advisory capacity. No attempt was made to fit everything into a single mould but, on the contrary, there was freedom of action provided the final goal was reached.

In the outcome, the effect on the prestige and academic standing of the high schools has been quite marked. Parents have become convinced of the wider field of opportunity and the advantage of the closer link with the grammar school. School hours and holidays are now the same in

both types of school, and, having introduced homework for the top stream, the high schools have found it necessary to extend it to the other streams. This has brought an all-round improvement, particularly in the case of pupils from homes where the necessary encouragement is forthcoming.

The grammar school

The grammar school had the problem of evolving a curriculum to cover four-year or five-year courses for those still entering at 11, and of providing for the entrants now coming in at 14.

A modified selection examination was devised to select the top 12½% of primary school leavers for entry to the grammar school at 11; the head teacher's assessment of performance during the whole period at primary school was also taken into account. The group of pupils who entered in this way will act as a yardstick for the 'A' pupils in the high schools since they follow the same curriculum.

This curriculum (given above) constitutes the first two years of a four-year or five-year course in the grammar school. Thereafter a number of alternative choices are offered at the beginning of the third year of the four-year course, and at the beginning of the fourth year in the five-year course. This ensures that, to a basic core of twenty periods—devoted to English, French, mathematics, physical education, scripture, music—four additional subjects can be added in the two years before taking 'O' level of G.C.E. Here is the scheme of alternatives for the forms concerned. One subject (five periods) can be selected from each of the following groups, though not the same subject from two different groups.

A	B	C	D
Chemistry	History	Physics	Chemistry
Biology	Geography	German	Art
Latin	Biology	Scripture	History
	Handicraft *or*	Music	Geography
	Domestic Science		Greek

Most of these pupils are destined for the sixth form so that the choice made here governs bias towards arts or science, though the pupil who is undecided can 'sit on the fence.' It will be seen that the maximum number of subjects to be offered at 'O' level is eight (English language and English literature being included) and that both ability and interest can be deciding factors. Thus pupils with a real blind spot or with particular gifts (practical, mathematical, scientific, linguistic or cultural) can get the necessary encouragement and have a goal ultimately in view.

So far as the entrants at 14 were concerned, I received a report on each pupil from the head of the high school, indicating his ability, character, interests and rate of school progress. All the parents concerned, having completed a declaration to support the scheme and keep their child in school for at least two years, were invited to a meeting with their children; here the types of course available were described and the school regulations explained.

These entrants were divided into two forms. The first (4T) consisted of those likely to reach 'O' level in three or four subjects, the second (4H) those for whom this aim could not be set. Here are the timetables for these two forms, giving the periods allotted to each subject:

4T: English (5), French (5), mathematics (5), history (5), geography (5), physical education (4), scripture (1), science (6), handicraft, or domestic science, or art (4).

4H: English (5), mathematics (5), history (5), geography (5), physical education (4), scripture (1), science (3), handicraft or domestic science (4), art (including writing and lettering) (8).

Successful integration

Arising from our experience, we have decided to widen the curriculum of form 4H to include bookbinding and a greater allocation of time to general science, since they do not require so much time for handicraft and art. When they move into the fifth form in September next we shall give their curriculum a slant towards vocational training by providing for at least half a day a week at the College of Further Education in Hinckley. Here the boys will do workshop practice, the girls a commercial course. This is a tentative move with the aim of stretching the pupils' efforts to fit them for examinations under apprenticeship schemes.

All the transferred pupils have been absorbed very successfully into the full life of the school.

There is a large number of after-school activities —a literary and debating society (senior and junior) and societies covering history, railways, music, mathematics, photography, films, hobbies, science—which cater for their interests. They have also taken their full share in school games and athletics. A factor helping towards successful integration has been that 4H was fortunate in having a first class natural leader and athlete who set the tone by his loyalty to the prefects and the school as a whole.

One real initial difficulty for these pupils was adapting themselves to a greater number of specialist teachers in the grammar school. To meet this problem for next year's transfers we have appointed a "form teacher" who will take most of the basic subjects, leaving only science, handicraft, domestic subjects and music for the specialist teachers.

(2) G. BAXTER, Headmaster, Hastings High School, Burbage

HASTINGS HIGH SCHOOL was opened in September, 1956, as a new modern secondary school, comprising 456 boys and girls. Of these about 100 boys were transferred from a neighbouring and overcrowded modern school for boys, about 100 girls were transferred from an equally near and equally overcrowded modern school for girls and about 100 pupils came from a not quite so near and not quite so overcrowded mixed modern school. These pupils varied in age from 12 to 14 and joined a normal 11+ intake of about 150 pupils.

After a settling in period of about two terms, the director of education for the county of Leicester announced the new experimental plan and invited our co-operation.

My first reaction was one of acceptance. I welcomed the challenge of thinking afresh, I welcomed the opportunity of working independently within a collective scheme, I welcomed the chance to help in providing an education based, as I saw it, not on opportunity that in name was equal but on opportunity that in fact was unlimited.

My second thoughts centred around my own school, as I asked myself what I should lose. I should lose, I felt, sole responsibility for the pupils entering this school, since for many I should be providing but the first three years of a five- or seven-year course. I should lose the opportunity of setting up facilities within the school for what I had hoped would be an increasing number of pupils able and willing to complete here a five-year course leading to external examinations. I should lose many pupils who undoubtedly would have been outstanding in the school at work and games and would have provided the kind of example and leadership so beneficial and indeed essential. The school might in fact lack all incentive in the fourth year and one of the greatest problems of the modern school might be augmented.

The new intake

I must confess that for a time these two basic points of view seemed to quarrel, and indeed the quarrel was not resolved until I realised the source of the conflict. I was looking at the experiment from without and the school from within. What settled the issue was the realisation that I must view both the scheme and my part within it from the point of view of the pupil. Given all pupils at 11+ could I provide a scheme of education, could I provide an environment, in which each might flourish? I felt I could.

My first concern was that the staff should think likewise. An immediate staff meeting gave me new hope and subsequent staff meetings have proved heartening.

By September, 1957, we were ready to start. A series of joint consultations had taken place between heads of schools and subject specialists concerned. New staff had been appointed, new books for new subjects had been ordered, some new schemes of work had been written. We were ready to welcome to the school a new intake of 170 pupils of whom about 18 might never have come to us. All these pupils had taken the 11+ examination in the normal way. With this information available and, most important, a detailed report on each pupil from his junior school, five forms were organised. They are streamed. At the moment two forms are taking French, one form is studying Latin and one form is doing special remedial work.

The fourth year

In the second and third years no great alterations or modifications to the syllabus have been considered necessary but an immediate attempt has been made to tackle the problem of the fourth year pupils. It is essential for parent and pupil to realise that at the age of 14 the only choice open in the first place is a simple one—whether to transfer to Hinckley grammar school for a course lasting at least two years or whether to return here for a course lasting one year, two terms or one term. In either case it is essential for the pupil to work.

It was felt that what was needed was a course which would provide a stimulus, a course worth-while in itself, which by being different would place the fourth year pupil apart as rather special, a course which would leave plenty of room for initiative, for individual effort and unaided though supervised work. Thus three forms came into being. One consisted of boys staying a full year, one consisted of girls staying a full year, one contained Christmas and Easter leavers. Each was placed in the charge of an experienced member of staff for about 16 periods a week. The form of boys has attempted to come to grips with the environment in which it lives. It has studied in topic form the immediate neighbourhood and later Leicestershire as a whole. It has learned a little of the past each boy has inherited. It has looked at the present and has been tempted to think of the future. Deliberately the course has had running through it the desire to foster character and a sense of responsibility. Much of the work has been done in the field and a week under canvas in the Charnwood Forest area proved not only of interest but of value.

The course attempted with the girls was similar in outline but different in detail. Here the emphasis has been on the environment of the future. Most of the work has centred on the home and its importance in family and national life. It is hoped these girls have not only learned what is practical and utilitarian but have been tempted to consider what is attractive and beautiful.

We are approaching now the end of our first year. We are beginning to take stock and think in terms of next year and the future. Provisional figures show that in September, 1958, we shall be transferring to Hinckley grammar school 10% of our present third year pupils, while of the 90% returning here some 55% will be completing a course of study lasting the full year.

There is no doubt that in the future the numbers transferring to the grammar school and the numbers of those completing a full four year course at this school will increase. Interest among parents is high and at a recent meeting of parents of our third year pupils I found a real desire for extended education of all kinds.

There is no doubt also in my opinion that all schools within this experimental area will need to think and rethink. Indeed we are doing so. We need the freedom to experiment. Indeed we have got it.

Looking back

As I look back over this first year I find myself asking a series of questions. Is there any one outstandingly bright pupil in the school who is being held back? In fact there is an outstanding boy. Naturally he is top of his form, he is a member of the choir, he is appearing in our first school play, he belongs to the photographic club, he practises assiduously at the nets. Is this boy being held back ?

Is opportunity in fact unlimited? Evidently parents think so, for of the 14 pupils transferring this year to the grammar school nine are from our 'A' stream, three from our 'B', one is from our 'C' and one from our 'D' stream.

Is every pupil being taught the right things in the right way ? Here I am not so sure. It is here where experiment must take place. In September, 1958, we shall be trying to tackle these questions.

Only the future can tell us how this experiment as a whole has worked out. For the present one important action must be taken. Far too many students and practising teachers applying for posts in a school such as this know little or nothing of the experiment and the part the high school plays within it. Training colleges and university education departments must help here. We should like to feel that in future teachers were bringing into the school not only professional skill and training but a desire to take part in what I believe to be a worthwhile experiment.

Notable developments in secondary education are at present planned or proceeding in different parts of England and Wales. In each issue of FORUM we hope to present a " progress report " dealing with such areas in turn.—*Ed.*

Education Policies of Political Parties

ROBIN PEDLEY

"WHAT A PITY education's become a political issue!" Such is the conventional line. No doubt it is rooted in the old idea that politics is a dirty business; that most politicians are trimmers who can't be trusted out of one's sight.

Yet the increasing interest of political parties in education is really a heartening sign. For the first time in our history the nation as a whole is beginning to take it seriously. Now the approach of a general election has stimulated various political bodies to re-think their views on the future of education in this country.

Only the Conservatives have, at the time of writing, failed to produce a policy report for submission to this year's party conference. This scarcely matters: seven years of office have given them ample opportunity to show what they really stand for, and deeds are a better test than words. The promised statement of Conservative principles will none the less be welcome. Is one right in supposing that the Conservative stands for individual freedom, for the chance to get on unfettered by the regulations of officialdom? If so his party has allowed itself to be manoeuvred into a false position by defending (as its 1957 conference did) the restrictions of 11 plus and tripartite secondary education which were introduced by the 1945-50 Labour government. The attitude of capitalist America is very different.

Liberal zest

The Liberal revival has encouraged that party to do its policy spring-cleaning with refreshing zest. On many counts it is a pity that it has no foreseeable chance of translating its manifest goodwill into good works. Here is enthusiasm and sincerity: "we must fire the imagination of the people," says *A Liberal Policy for Education*, "and thrill them with the vision of the sort of educational system that we ought to have and can have." At present, they point out, our annual expenditure on education, in all its forms, is a mere two-thirds of that on alcoholic drink: less than two-thirds of what we spend on tobacco: two-fifths of the money which goes on armaments. It is left to the report of the London Co-operative Society, however, to show that while 9·8 per cent. of the national income went on education under the Liberal government of 1910-11, in 1949-50 that proportion fell to 7·7 per cent. under Labour, and still further in 1953-54 to a paltry 6·4 per cent. under the Conservatives. Is it any wonder that the radical socialists (Victory for Socialism), seeking to ensure that this Liberal aim is actually achieved, want "a Minister of great stature, equal in ability and influence—in both the government and the country—to the Foreign Secretary and the Chancellor of the Exchequer"?

The Liberals have some pertinent comments on administration and finance. Most notably they revive the idea of directly elected education authorities: for after nearly 60 years Morant's replacement of school boards by all-purpose bodies looks no better than it first did. They also draw attention to the fact that, while we clamour for more highly qualified teachers, the proportion of graduates in the total intake is actually falling; and of these some 45% have no professional training! This is a terrible indictment of the provision made in our university education departments, whose capacity could, in my view, be doubled.

Only in discussing secondary education does the official Liberal pamphlet fall from grace. It ignores the overwhelming evidence against 11 plus selection, alleging that "distrust and fear of the tests are fostered for political ends." Fortunately the young Liberals seek to correct their elders' blind spot in their own publication, *Opportunity in Education*. This constructive programme follows a British Psychological Society report in favouring a break at 13 rather than 11. It wants to see an improved form of primary school up to that age, and, without being dogmatic, is by no means averse from having comprehensive secondary schools from 13 to 18. Less convincingly it advocates entry to the public schools mainly on ability.

Much more important than the differences of view themselves, however, is their appearance from the same party headquarters. In these days of disciplining by party machines, how refreshing to find a small party which is yet big enough to sponsor two such statements!

A positive programme comes also from another minority party with no prospect of power: the Communists. *Education—Com-*

munist Party Policy hits hard at the class system of education, at miserly expenditure on the public sector, at 11 plus selection, and at the constriction of higher education caused by the shortage of university places.

Specialisation—when?

The Communists venture a definition of secondary education: " that all-round, general education which the citizen in any modern democratic society needs, and which is the best basis for later specialisation." This implies a common curriculum comprising " the natural and social sciences, as well as mathematics, language and literature (native and foreign) . . . the basic essentials of modern technology . . . physical training and the appreciation of the arts." Later they appear to concede the possibility of " bias or choice at the later stages of the secondary school course," but " only on the foundation of a common curriculum."

Here is a challenge, not only to the orthodox who want academic, technical and practical biases from the age of 11 or 13 onwards, but also to " new " educationists who reject the whole idea of an imposed pattern of studies throughout the secondary stage and who believe that freedom to choose one's favourite line, and to prefer depth rather than breadth, is essential to the proper development of adolescent personality. Are the Communists right or wrong in wishing to defer specialisation from adolescence to adulthood? This is a major issue, affecting the organisation of sixth form work, the size of secondary schools, the nature of undergraduate studies, the number of places at universities—indeed all our practical plans; and we must, as a nation, find an agreed solution.

And so we come to the Labour programme. In addition to the official statement, two publications deserve notice. The London Co-operative Society's report, *A Policy for Education,* is wise, thoughtful and detailed. Very properly it wants primary school classes to be at least as small as those in secondary schools, with a maximum of 25 for infants. It recognises the importance of integrating education with the social needs and services of each neighbourhood and asks teachers to reconsider their short-sighted wish to have done with school meal duties. While supporting the comprehensive principle it is uneasy about the large size of London's new secondary schools. Like the Liberals, these Co-operators want changes in the structure of local government which will permit greater local control. And they are deeply concerned about the failure of the 1944 Act to end " class and wealth privileges in education."

The Victory for Socialism group goes further. Its pamphlet *Equality in Education* contains a reasoned plan for integrating the public schools in the national system. It seeks to ensure a choice to parents where special conditions or beliefs make that important. It believes that this would mean an enlargement of freedom, replacing the present " freedom for the few " which " rests on the possession of wealth: . . . the same sort of freedom that anyone once had —in theory—of buying a rotten borough, or a colonelcy in the army."

Socialist ideals

The other notable feature of this pamphlet is its stirring call for a re-kindling of the fire, drive and moral conviction of the early socialists. It points out that ' equal opportunity ' is perfectly compatible with the idea of an individualist, competitive society, which would thereby become more efficient. " Labour must go further, and ask: ' Equal opportunity for what?' " We cannot, says Victory for Socialism,

> " expect educational reform to go deep so long as the society in which schools are rooted, and of which parents and teachers form a main part, is governed by other motives and values. Can the Labour Party of today sincerely preach the virtues of an educational system in which children will learn to work and play for their intrinsic worth? That must be a mockery if all the time its members seek or accept personal power and prestige, decorations and titles. These are essentially the same carrots as the more juvenile honours bestowed in schools, and have precisely the same purpose and result: the grading of society into different orders, and the sharpening of individual jealousies and competition within it. Nor can Labour convincingly urge the rightness of a fully comprehensive system while leading members seek for their own children the privileges at present bestowed by a ' public ' school education."

The justification (from a socialist viewpoint) of this vigorous, crusading appeal is best seen when one turns to the official Labour document *Learning to Live.* Its references to an underlying social and educational philosophy are brief, and might serve equally well as Conservative doctrine: " the healthy ambition of an individual to get on in the world; his natural desire to serve his fellows and enjoy their goodwill," and so on. Labour is certainly setting out its stall as a national party. In this process of evolution its

former socialist faith appears as vestigial as man's appendix.

Learning to Live is a thorough, comprehensive review of the main stages of English education and their needs. It is at once progressive and cautious. Commitment on all but the most obvious generalisations is usually and understandably avoided, for the expectation of office looms large over these pages.

The break at 11

Labour's real contribution lies in the decision to introduce comprehensive secondary education. The case against selection at 11 is cogently argued. Most encouraging, the party is no longer asked to plump only for large comprehensive schools (11-18), but to accept two-tier secondary education as an alternative which may be superior in certain areas. This greater flexibility will be welcomed on all sides. It is disappointing, however, that the 1944 division of schooling into distinct primary and secondary stages is not reconsidered. This division restricts the flexible development between 5 and 18 which in principle Labour wants to see; and with the end of selection, little remains to justify compulsory transfer between 10½ and 12. Independent preparatory schools have an 8/9—13/14 age range: are such ' middle ' schools, of whose existence the Prince of Wales himself is taking advantage, to be ruled out for local authorities?

There is another blunder: the proposal, while indicating no intention to amend the existing law, to *require* local education authorities to " adopt the comprehensive principle." The Minister's duty under the 1944 Act is " to secure the effective execution by local authorities . . . of the national policy for providing a varied and comprehensive educational service in every area." Section 8 (b) of the Act defines that national policy so far as secondary schools are concerned; and there can be no denying that it leaves room for both selective and non-selective patterns. For seven years Labour M.P.s have rightly objected to the restriction, by successive Conservative Ministers, of local authorities' freedom to organise secondary education as they wished within the limits of that section. Now, it seems, they propose to commit the same offence by putting the machine into reverse.

But perhaps this is to be, after all, only a sham reform? It is nonsense to say, as this document does, that " in many areas it may take substantially more than five years " to switch over to comprehensive schooling. And Mr. Gaitskell's subsequent explanations are disturbing. " Local authorities " (runs a report of his speech) " would be asked to submit plans to abolish the permanent segregation of children into different types of schools at 11, but they would have plenty of latitude as to the way in which, and the speed with which, they did this." Put that to any chief education officer in England or Wales today, and he will happily and confidently tell you that there is no "permanent" segregation of children in *his* area. How is " the comprehensive principle" to be defined? The electorate has a right to know this before it votes.

The public schools

Quite the most fascinating chapter, however, is that on fee-paying schools. The Labour lion roars its denunciation of privilege bought by money.

> " This system," it thunders, " distorts the choice of people for responsible positions; it damages national efficiency and offends the sense of justice. Further, it creates an irrational social cleavage which is a great injury to education as a whole. One reason why there does not arise a passionate demand from the whole nation for a first-class educational system is that a group of wealthy and influential people can look after their own children's education, whatever the defects of the national system. All members of the Labour Party, and indeed all who desire equality of opportunity and social justice, will agree that the existence of this privileged sector of education is undesirable."

And what does it propose to do about this terrible state of affairs? Nothing whatever. Several odd arguments are assembled to justify this somewhat shamefaced anticlimax: too many! *Qui s'excuse, s'accuse.* There is one sufficient reason (refusal to sanction an intensified form of selection) why we should have no truck with Fleming. There is one sufficient reason, and one only (reluctance to end one freedom, however inadequate, until we are convinced that a better one can be substituted) why we may not wish to commit ourselves to a large take-over project. These are arguments against particular kinds of action: they are no justification whatever for complete inaction.

Mr. Butler and Mr. Chuter Ede gave a lead when the 1944 Act provided that, for the first time, all independent schools were to become subject to inspection and approval by the Ministry of Education. The English way is simply to extend that control to remove the main anomalies now complained of.

First, at a time when we are desperately short of teachers, and particularly of graduate teachers, we must look at these figures:

Schools	*Pupils per teacher*	*Graduate teachers* (%)
Independent primary ..	12·6	35·8
Maintained primary ..	30·3	4·0
Independent secondary	12·1	79·5
Maintained secondary..	20·7	38·4

Clearly it is imperative to ask independent schools, like fortunate local authorities, to accept the national ratio of teachers to pupils, plus an agreed allowance for boarding schools. Second, it should not be possible for wealthy schools to outbid local authorities in seeking the best qualified teachers. Burnham scale, with a limit on the number of special posts and deductions for the ' perks ' of residence, should apply to all.

Third, it seems that any public school ' pull ' in gaining entry to Oxford and Cambridge is largely due to personal connections between school head or housemaster on the one hand and college principal or senior tutor on the other. If applications were dealt with by the university faculties (preferably within the framework of a national clearing-house for all the universities), and the total number accepted *then* distributed among the colleges, it is more likely that students would gain admission by reason of their intellectual merit rather than their social background.

A commonsense solution

Such steps may, to the logical socialist, appear very small beer. They would, none the less, go a long way towards rectifying present injustice; they could not reasonably be opposed by fair-minded men; and the first two could be applied at once. More than this, it seems clear, Labour's leaders are not prepared to do. But, if they are not both to destroy the zeal of the faithful and to incur the contempt of their opponents, they cannot well do less.

* * *

Despite differences on particular matters, the striking thing about these statements of policy is their degree of common ground. There is no urgent desire to reform the main structure of the 1944 Act (no one, for example, criticises the religious settlement): the common wish, rather, is to make it work more effectively. Every party wants to enlarge educational opportunity: it is a sign of health, not of weakness, that the means of achieving it should be vigorously argued.

Our troubles are largely, but not wholly, economic troubles. We need more money for education; we must use the resources we have more efficiently; above all, it is vital to attract many people of real calibre to the profession of teaching, and to train them for the right fields of work. The shortage of good, appropriately qualified teachers is the greatest of our ills, and its remedy the greatest social task and test of the next government.

But though bright ideas, bold planning and wise spending are all important, one thing yet is needed.

I was a small boy at a village elementary school when Arthur Shepherd, the Swaledale schoolmaster, came down from the hills to win Darlington for Labour for the first time. I remember why he won.

" Is it right?" he asked. " If it's right, then let us do it!"

The people need that simple call today. I have no doubt that, from whatever political quarter it comes, they will respond.

Junior School Streaming: A Survey

J. E. BROWN

THE EDUCATIONAL RESEARCH COMMITTEE of the London head teachers' association recently conducted a survey of streaming by means of a questionnaire sent out to members. The number of schools covered was not large; nor was the enquiry made with the elaborate machinery of a large-scale scientific investigation. But the results are interesting in that they throw some light both on the factors affecting school organisation and on the strong divergence of views on the relevance of these factors.

The questionnaire, to be answered by head teachers, was divided into two sections. The first was designed to obtain a factual description of the school: the number of pupils on roll, of classes, of staff, the type of district served and so on. The second section included nine questions bearing directly on streaming.

Answers were received from schools of all types, but only those from junior schools will be summarised here. These came from 88 schools in all: 40 junior mixed, 37 junior mixed and infant, 8 junior boys' and 3 junior girls' schools.

The answers to the first question showed that 39% of the schools were fully streamed, 43% partly streamed and 18% unstreamed.

1. *Is your School Streamed?*	*Fully*	*Partly*	*Not*
Junior Mixed	23	15	2
Junior Mixed & Infant ..	3	21	13
Boys'	6	1	1
Girls'	2	1	—
	34	38	16

To the second question—" Do you believe in streaming as an educational policy ? "—73% of head teachers answered in the affirmative while 27% were against.

2. *Views on Streaming*	*For*	*Against*
Junior Mixed	31	9
Junior Mixed & Infant	25	12
Boys'	6	2
Girls'	2	1
	64	24

The third question—"Are you obliged to stream ? "—contained an unfortunate ambiguity which, naturally enough, bothered some heads. Five merely replied with the query " By whom?" But others understood that the obligation might or might not arise from circumstances and answered accordingly: 17 " Yes," 66 " No."

No answer was given by 10 heads to the fourth question—" Is parental reaction to streaming favourable, unfavourable, indifferent ? " Evidently the attitude of parents was not known, presumably because parents take it for granted, even in these days, that school organisation is a matter for those running the school. The answers that were given indicated that 51 heads found parents were in favour of streaming, 24 that they were neutral, and three that they were against; these last three answers all came from junior mixed and infant schools.

Another question, which in fact came later in the questionnaire, may usefully be considered here—" Do you make special provision for retarded pupils ? " Answers made it plain that the majority of junior schools do this so far as shortage of staff permits: 69 answered " Yes," 14 " No," while there was no answer from five.

The remaining questions applied mainly to the streamed schools. In an attempt to find out what considerations influence the process of streaming, head teachers were asked to underline in a given list certain factors (reading, English, arithmetic, intelligence) and other relevant factors (such as diligence, the requirements of the junior leaving examination, social influence, the assessment given by the head of the infants' school). In the summary below the schools are indicated by initial letters and the number of schools in each category is given. It is interesting to note the difference between those schools which include infants and those for junior children only.

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3. *Factors influencing streaming*	*JM* (40)	*JM & I* (37)	*B* (8)	*G* (3)
Reading	33	20	8	2
English	31	16	5	2
Arithmetic	27	12	5	2
Intelligence	27	13	6	2
Other factors:				
Diligence	13	8	3	1
Junior Leaving examination..	6	7	—	—
Social	3	—	1	—
Infant Head's Assessment	22	2	3	1

Perhaps the distinction between " reading " and " English " was not clear enough to be helpful; but these two factors obviously carry the greatest weight. It is evident, as one would expect, that streaming is influenced by a combination of factors rather than by any one facet of the pupil's progress or personality.

"Are the children in the same stream for all subjects ? " To this 58 heads answered " Yes," 14 " No "; 16 schools being unstreamed. Few primary schools are so generously staffed and accommodated that the head can vary the streaming for different subjects, as is the custom for some subjects in many secondary schools. The answers to this question, therefore, probably reflect what heads find necessary, rather than what they think is desirable; though it is likely that divergences in ability as between one subject and another are less evident in the primary school than they later become.

Transfers favoured

Heads evidently find it both desirable and possible to transfer children. To the question " Do you transfer children from one stream to another? " 70 answered " Yes," only two "No"; both the latter being heads of junior mixed and infants' schools.

The final question was—" What special difficulties do you encounter in maintaining the streaming organisation ? " The answers do not lend themselves to tabulation and they will be discussed later in this article; but it is pleasant to note that a fair-sized group of heads declared that they met no special difficulties in this aspect of their organising work.

4. *Difficulties affecting streaming*	*JM*	*JM & I*	*B*	*G*
None	10	5	2	—
Age, ability, accommodation	13	6	4	1
Staff changes	5	4	—	1

Questions of the kind set in this enquiry can rarely be adequately answered with a plain, unadorned " Yes " or " No." We are dealing with human problems and the way in which human beings set out to solve these problems; the reasons they give for their solutions, their comments on success or failure, are at least as interesting and important as the solutions themselves. I propose to give here, therefore, some of the additional comments of those who answered the questionnaire.

Other aspects

Many heads said that classes were unstreamed in the first year of junior school life; or that streaming was " not sharply defined " at this stage. Some said that their schools would be more fully streamed if the number of pupils permitted; obviously, when a school has only enough children in any one year to form one class, streaming is impossible. The fluctuation of school population, owing to a falling or rising birth-rate or—more frequently—to local rehousing schemes, can cause serious problems which are more acute in a school where classes are streamed.

A few heads of the unstreamed schools said that they would apply a streaming policy if numbers warranted it; but there was an equal number of heads who declared that " in ideal conditions " they would abandon streaming. It is clear, however, that the compulsion arises from the situation as each individual head views it: the decision to use streaming is the head's decision, when he or she has considered all the relevant factors. Whether all these factors are regarded as educationally desirable is another matter.

Many reasons were given for preferring streaming. It provides the only arrangement for ' stretching ' the able children without discouraging the slower ones. It appears beneficial to the interests of both children and staff. Experience suggests that streaming is necessary for basic work in reading and arithmetic. The

brighter children work more keenly when pitted against their peers, while the slower children are not given the feeling of inferiority which must follow from finding children in the same class always out-distancing them in the basic subjects. It is better for the slower children to have plenty of time for repetition and careful practice which may be unnecessary for the brighter children.

A few heads were quite blunt about the effect of the junior leaving examination, declaring that they had " a duty to the parents of grammar school children to see that they get their chance." Many heads made the point that inexperienced teachers find a large unstreamed class difficult to handle because it calls for real skill to teach several groups of varying ability within one class. Others pointed out that working in groups within a class is only " concealed streaming."

Case against streaming

The opponents of streaming maintained that the system is followed only as a convenience for members of the staff and that it is " very bad socially." Streaming may be necessary because of large numbers but it still remains educationally and socially undesirable. Children of varying abilities " have much to give each other," provided the brighter pupils can be ' stretched.' It is undemocratic (this word was frequently used) and against the basic principle of doing one's best for *all* the children. One head described the system as " pernicious." It would appear that emotional reasons play as large a part in the decision as any other.

In elaborating on the question, "Are you obliged to stream ? "—one head said that the influx of overseas children made it necessary. Another felt that his sense of fairness to the slower child " obliged " him to use streaming; while a third felt impelled to stream older pupils because of the anxiety of parents and teachers that their children should forge ahead. A few heads said that the bright children could make the best possible progress only with skilful and experienced teachers. (But, of course, the same thing is true of all children).

While the majority of parents seemed to be in favour of the scheme adopted by the school, it might be more accurate to say that parents had not voiced any objection to the system in being. Three heads said that the parents feel that streaming gives them some indication of the child's progress and relative ability. One said that parents were impressed by the fairness of non-streaming. Another (perhaps more perceptive) head declared that parents of 'A' stream children are in favour of streaming but others are against it; and, of course, there are the objections of parents who are quite sure that their 'B' stream children are really 'A's'—if only the school could understand them as well as Mum did. One headmaster asserted roundly that there is " much wrong thinking by parents."

Most of the schools from which replies came listed the same kind of difficulties in maintaining the organisation of streaming. The problem of obtaining suitable teachers was mentioned over and over again, accentuated in some cases by frequent staff changes. A few heads complained of over-frequent visits from the parents of ' borderline ' children who were placed in the ' B ' stream. Some heads of schools in poor areas found that they had insufficient pupils of good quality to make one class which could be regarded as an 'A' stream; therefore, in a two-stream school, they had one class of slow children and one class of mixed ability—which had to be called the 'A' class—at the top of the school. Several heads were concerned about nomenclature; not wishing any class to be dubbed 'B' they used such devices as giving a class the initial of the teacher—but " the children always know."

The " general comments " given at the end of the questionnaire provided additional evidence that junior school heads give a vast amount of time and thought to the planning of school work so that the children may derive the maximum benefit from what the school has to offer.

Acknowledgment

It remains to be said that the enquiry was conducted by Mr. K. G. Condict and Mr. C. H. Zoeftig, the chairman and secretary respectively of the educational research committee of the London head teachers' association, and it is their hard work that has made available this information on junior school practice.

In our next issue the head of a very successful unstreamed junior school will discuss his methods. Readers' views—preferably based on experience—concerning this controversial subject will be particularly welcomed.—*Ed.*

Developing Advanced Courses in the Modern Secondary Schools

F. A. CROFTS

TWO of my old girls have just completed their teacher training, one with distinction in needlework and crafts. An old boy is about to enter training college, and others have qualified for county awards and have taken full time courses in colleges of art and agriculture successfully. Yet others, via late transfer without examination, have passed into other secondary schools offering courses more appropriate to their own particular needs. For all these, as for scores of others, full stature at 16 has in no way been limited by the outlook at 11 plus, and it is against a background of histories of this kind that the whole question of the development of advanced courses in the new secondary schools might, perhaps, be best considered.

A White Paper on educational reconstruction published in 1943 said of the proposed new secondary schools that their future was their own to make. The Act of 1944 required that all children should be educated according to their age, ability and aptitude. The development of advanced courses in the new secondary schools has been one aspect of the response of educationists to the challenge, both of the central problem of the schools as thus set out, and of the large measure of freedom accorded to them in dealing with it. In acknowledging this freedom it is important to remind ourselves, in passing, that it still exists to a large degree.

Two main needs

Advanced courses have been initiated for a variety of reasons, but most people will agree that only one criterion, the needs of pupils, is valid in the ultimate issue. Two needs in particular are significant. First of these is the need for satisfaction, and it is in relation to this need in all pupils that advanced courses take their proper place. In my own area, where more than one fifth of the pupils of 11 are allocated places in the older secondary schools, it has been noted consistently that the scatter of ability in modern school pupils, as measured by intelligence tests, has ranged from 120+, overlapping the grammar school scatter, to 70, the borderline of ineducability. Pupil interview and subsequent pupil performance, too, have underlined the fact that attainment at 11 has only been partly tested, so that other, and perhaps greater, abilities have not yet been fully revealed. Moreover, there has been evidence that what has been seen and been recorded has, in many instances, been distorted by retardation. A boy who worked with a " B " set in mathematics and English until the end of his second year, and who subsequently took both subjects at G.C.E. ordinary level, springs to mind as a case in point.

Three parallel courses

Facts and instances such as these are of importance when one is considering the nature of the courses to be offered by the schools, the timing of entry into the courses, and the standards which might well be attempted. There is, however, a danger. Advanced courses are attractive, so that it is particularly important that we should remind ourselves that they are part, and part only, of the full pattern of opportunity offered by a school. My own experience leads me to feel that, subject to a general emphasis on the removal of small retardations during the first year, a school might best meet the situation by providing three parallel courses with much common content at appropriate levels. There should be, in the first place, a sound general course to 15 years, with links with further education, for the majority, who are around the average in ability. The second demand, surely, is for a thorough remedial course for the handicapped, and finally in terms of claims upon the school's resources, advanced courses for pupils of superior ability. All pupils need purpose, and, in making provision for a triple course in this way, a school can satisfy this, the second basic need in school, of all its pupils.

There is, as most of us know, a strong connection between opportunity, attitude to school

work, and ultimate scholastic success. For abler boys and girls advanced courses, of suitable type and seeking suitable standards, are helpful in replacing the notion that the modern school is a " dead-end " for the " also-rans " with the knowledge that it is indeed a place of opportunity. In human terms I have found this to mean the difference between a child arriving in 1943 with an expressed feeling of disappointment—" I do wish I were going to a better school "—and a similar one, one of six in 1953, rejecting a grammar school opportunity for a more appropriate one in terms of predominant interests and ability, and with equal scholastic possibilities in terms of her own potentialities.

So dramatic a change of attitude among the abler pupils has not yet spread throughout the modern secondary field, and the change will not come easily. In many ways the problem is akin to that of the chicken and the egg. Some authorities are still reluctant to provide staff and equipment until they can see results, and such results cannot come without the teachers, the equipment and the pupils to use both. Parents, for their part, will not make a decision involving an extended school life, with its sacrifices in terms of wages lost, unless they can see that the effort will be worth their while.

Two experiments

I have been fortunate in having been able to try two solutions. In Chesterfield, immediately after the war and in the face of shortages, but with full official support, advanced courses started from a few girls learning shorthand and typewriting in a small spare room, and developed into courses which reached good standards and gave the school a sixth form. In my present school, built with a five-year course in mind, and growing from the bottom, a comparable development is proving possible more quickly, with 30 boys and girls from a three-stream year anxious to stay on, and with courses more broadly based from the outset.

Two things have seemed important in both instances. The first has been the fostering of a right attitude in parents and pupils towards the opportunity being offered and towards the effort required of both. The second has been the thought and enquiry needed to make sure that the courses lead to worthwhile vocational opportunities. This does not mean that the school forgets that there is more to living than earning a living. Nor does it mean that the school permits a girl, for example, to neglect the home-making skills for those of the office. What it does mean is that the course is realistic in terms of local employment but that it is conceived, too, as part of the full educational development of the pupil.

It is when a school considers advanced courses of this kind in relation to full development that the search for appropriate standards begins, and it is because the search for standards leads to the use of external examinations that controversy arises. It is a fact that an increasing number of schools is making use of an increasing number of examinations, and that something approaching 10,000 entrants from the new secondary schools are now attempting the General Certificate of Education examinations with considerable success. There is insufficient space in a short article to discuss the advantages and drawbacks of such examinations in detail, but there seems no valid reason for assuming that, because they are, perhaps, inappropriate for most pupils in the new secondary schools, they are therefore inappropriate for all. Moreover, one cannot help feeling that it is perhaps unrealistic to expect that able pupils will be sufficiently stimulated in school, or even allowed to stay on at all, unless some recognised qualification is to be gained. Accordingly external examinations, singly or in combination, have been used having regard to the claims of vocation and of full development, and taking account, too, of the amount of strain to be borne in each individual case.

The first three years

It is not the policy of the school to accept pupils into an express stream offering a definite course leading to a pre-selected examination from 11 onwards. This does not mean that the question of possible future examination syllabuses is ignored when schemes of work are drawn up. What it does mean, however, is that it is the policy of the school that the first nine terms of a ten-to-twelve term compulsory school life in the secondary stage shall be spent in exploratory and developmental work covering the whole curriculum. Informed guidance and informed choice of course then become possible with a minimum chance of error.

Advanced courses begin, then, after the third year and continue for a further full two years. Pupils from neighbouring schools, under a reciprocal arrangement, are admitted on head teachers' recommendation at this stage. The courses are best considered in two separate years, the first of which involves a trend, the second a bias.

Woodwork, mechanical drawing, gardening, art and craft, housecraft, needlework, commercial studies, additional mathematics and additional English are offered to all fourth year pupils on three half-days a week, so that each pupil can give his timetable a trend towards his own particular interests, abilities and vocational needs. The first year of a two-year advanced course fits well within such a framework in that a girl seeking a commercial career, a boy interested in a technical course or a pupil pursuing art and craft or agriculture can make a significant beginning to the work in mind without real loss to other aspects of general education, since these are in fact maintained for all. Regular formal homework is done throughout the two years.

The fifth year

In the fifth year, in 1959, as in my last school, each pupil will have an individual timetable, under guidance from the careers master or mistress. This will be made up to meet the student's own particular abilities and vocational needs, but English will be compulsory in each case for reasons which will be easily apparent. Wherever possible, appropriate examinations will be taken. The kind of thing one has in mind for an able student is perhaps best illustrated by the programme of a girl interested in clerical work. This girl took the fourth year curriculum with personal modifications as set out above and, at the end of the fifth year, took not only the Pitman speed examinations which were the expressed limit of her mother's ambition for her, but G.C.E. examinations in English language, art, domestic subjects (needlework), commercial subjects and arithmetic (only).

Although many of the minor problems connected with the development of advanced courses have been dealt with, at least by implication, in what has by now been said, no mention has as yet been made of the twin difficulties of staffing and accommodation which will affect the new secondary schools as the increased numbers of pupils pass through them. Many schools will find it impossible to organise complete advanced courses, at least for the next few years, and many others will find it difficult to hold their ground. Yet much of value has been already gained. Some areas have extended their courses so that pupils complete a full fourth year, and are relying upon close co-operation with further education to complete the work started in the secondary stage. Others have concentrated their advanced courses in a few selected schools. Yet others, like Chesterfield and Southampton in particular, have arranged that each secondary school shall have a single advanced course forming part of a comprehensive pattern for the area. The impressive thing is the variety and vigour of the experimentation still going on.

New opportunities

The result is that in many places there is a new air breathing through the secondary schools today. It is an air of purpose resulting from the presence of older pupils who have shown, by staying, that the school has something it is worth their while to get. These pupils are doing, for the new secondary schools, something of what a sixth form does in older schools. It shows in improved standards of work. It is apparent in the quality of both the teaching and the learning. It shows in many ways in the corporate life of the school. And for the pupils themselves there are opportunities formerly beyond their reach in business, banking, engineering, nursing, teaching. There will be many who will feel that if the new secondary schools can continue to offer opportunity of this order to the able, without loss to the average or the retarded, then the future that was theirs to make will indeed be full of promise.

Newport Education Committee, undeterred by the Minister's rejection of their scheme for comprehensive education, have re-affirmed " their intention, in keeping with their powers, to move towards abolition of the 11 plus and the segregation of pupils and to establish the full comprehensive system as and when opportunities offer."

Science Teaching in the Nuclear Age

(1) PETER ASTBURY

THE URGENT NEED for reform of school curricula arises from an obvious fact—that children born today will be 42 in the year 2,000. If as men and women they are to play a useful part, even in the day to day life of their generation, they will need a far deeper understanding of scientific method than is possessed by the average cabinet minister of our time. Within the next 50 years, to take but one instance, the principle of negative feed-back is likely to play an essential part in nearly every factory. Yet today barely one per cent. of the population has even heard of it.

Scientists who work at the frontiers of knowledge should be familiar with a fairly wide sector of the territory behind them. It is already becoming increasingly difficult to produce an adequately qualified Ph.D. by the age of 25. The frontiers are moving out at an ever-increasing pace and if a child born today is to reach them by 1983 he will have to travel by different means on a new route.

I have not had enough experience of school teaching to claim that the changes I suggest here are practicable, or even desirable. The proposals are inspired, rather, by experience of teaching first-year students in university physics laboratories, supplemented only by some discussions with schoolmasters and children. Nor am I so much concerned with what can be done in the schools of today as with what could be done in adequately staffed and equipped comprehensive schools.

Early science teaching

Faraday, drawing on his experience of lecturing at the Royal Institution, argued that quite young children, under the age of 12, could study science seriously, given proper teaching; but " do not let a man go to teach who is a pedant in his science and delights in abstract terms." His evidence to the Public Schools Commission of 1864 continued:

" I am incompetent to compare the training power of classical with physical instruction, because I have never been brought through a course of scholastic education; but it appears to me that nothing is so competent to make a young mind think, and think correctly, as the action of those (scientific) laws."(1).

The teaching of science should start in the first year of the primary school. Scientific method can be applied to the most elementary problems, questions far less abstract than those posed in the 11+ examination. The subjects studied should be based on simple concepts; they should involve inductive arguments; and they should be directed towards establishing important general principles, e.g., the conservation of energy, the periodic table of elements and natural selection.

If half-a-dozen first rate scientists were to meet half-a-dozen first rate primary school teachers they could certainly draw up a course which would awaken and stimulate interest; which would ensure that children entering secondary school had both a sound understanding of the elements of scientific method and experience of such techniques as photography, glass blowing, soldering and dissection.

The secondary stage

It is doubtful whether the present division of subjects—physics, history, geography and so on—is the classification of modern knowledge most suitable for presentation in secondary schools. But even if it is retained, boundaries must be much less rigidly defined. Scientific laws have a place in such subjects as geography, history, music, as well as crafts and architecture. History, for example, is not merely concerned with politics but also with the development of human skill and techniques which provide the material basis for different forms of social organisation. If it is to be so taught, science and mathematics must take a much more important place in teachers' training courses. At present it would be as unreasonable to expect a history teacher to understand the principles of metallurgy familiar to bronze age coppersmiths as to expect him to solve the equations set as problems in the schools of Old Babylon.

So far as the science subjects themselves are concerned, curricula urgently need revision to

(1) Report of the Public Schools' Commission, Vol. IV, p. 378.

make place for the science of the twentieth century. For instance, from the physics course could be pruned some of the more abstract theorems in electrostatics, details in techniques of measurement of specific heat, vapour pressure, surface tension and viscosity, descriptions of such obsolete instruments as tangent galvanometers and grease spot photometers. The whole course should be designed anew so that a mass of relatively less significant material does not obscure fundamental general principles.

At present atomic physics is precariously attached to the sixth form curriculum as an appendix to electricity. It should rather be introduced at a very early stage and play a prominent part throughout the whole course of science teaching. The argument that a thorough understanding of nineteenth century physics is a necessary prerequisite is invalid. Atomic physics, properly taught, can be introduced to children who know nothing about the second law of thermodynamics or the construction of achromatic lenses. Both in the primary schools and in the first years of the secondary course, prominence can be given to those aspects of physics and chemistry which lead up to the concept of the atomic structure of matter. This requires the equipment of school laboratories with such instruments as Geiger counters, simple cloud chambers, cathode ray tubes, photocells and more spectrometers. All children should be able to examine prints of classic cloud chamber and nuclear emulsion photographs; films and television could be much more extensively used to supplement laboratory work(1).

Here again, there is room for much serious discussion, including contributions from leading scientists, if a satisfactory curriculum is to be devised(2).

Methods and examinations

Whatever the curriculum, there must certainly be changes in the method of instruction. Much more stress should be laid on inductive argument, and children should learn to rely on observation rather than on authority. First year university students can produce the most sophisticated argument to explain the result which they *ought to have* obtained from an experiment; they find real difficulty in interpreting the actual result they *did* obtain. Wherever possible laboratory work should precede the complementary lectures. In this way children would learn from experiments, rather than regarding them merely as proofs of statements in text-books.

Last, but far from least, it is essential that the control now exercised by universities over grammar schools should not extend to comprehensive schools. Only a tiny fraction of those who sit 'O' level mathematics will become professional mathematicians. Examination boards in mathematics and the sciences should include a strong representation from such bodies as the Amalgamated Engineering Union, the Electrical Trades Union, the British Medical Association, the engineering institutes. In addition, if the excessive scholasticism of the grammar schools is to be avoided in the comprehensive school, many university faculties must also reconsider their curricula and introduce four year courses.

(1) Some films have already been made by the Mullard Company and the Educational Foundation for Visual Aids, but many more are needed.

(2) For a brief account of the work of the Physical Science Study Committee organised by the Massachusetts Institute of Technology, see W. C. Michels, *The Scientific American*, April, 1958.

(2) R. J. SCAMMELL

I ASKED ONE of my brighter first year classes, towards the beginning of their first term, to write down all that they knew about water; then, in a separate paragraph, to list any questions about water which they would like to investigate, or any points about which they wanted to know more.

Quite a number wrote something like—" The scientist's name for water is H_2O." One or two even had this at the top of their list, explaining it in a rough and ready way; for instance—" Water is made of two of hydrogen and one of oxygen." Nobody, however, wrote down in the second list that they wanted to know *why* scientists called water H_2O.

This seems to me to raise an important question; what is to be done about the subject of atoms and molecules? It is no use ignoring the

fact that quite young children hear a great deal about atoms, and that some go on to read elementary accounts of atomic theory in popular science surveys or children's encyclopaedias. The great danger, from our point of view, is that most of this information is presented in the form of pure dogma. It consists chiefly of facts about atoms and electrons with practically nothing about how and when these facts were discovered, nor any evidence for them.

The purely factual content of science, the mere end-product, is now so enormous, and bears on our everyday life at so many points, that we are in danger of being swamped by sheer weight of numbers. Here is a case of the price of liberty being eternal vigilance. The end-product must never be mistaken for the process. Teachers should always be alive to the danger of dogmatism and, wherever possible, the children themselves should be aware when they are accepting something without proof. Above all, pieces of work should be chosen which can actually be dealt with scientifically, in however simple a form. It is alarming that the majority of children, even when performing an experiment well within their limits, would much rather be right than honest. This is very human, and very convenient for the teacher who is trying to cover an extensive subject in a very short space of time, but *it is not science.*

Be frank!

To return to the problem of teaching about atoms and chemical formulae, it seems that the only method is to be frank with the children; to explain that, as the class cannot do the experiments needed to find out all about atoms, the only thing to do is to learn how scientists set about it and what they discovered.

What children read about science, apart from their lessons, introduces a quite different question. This arose at a recent conference in the form of a plea for more time for science, allowing for occasional excursions beyond the boundaries of the syllabus to discuss what was described, with cheerful informality, as " Sputniks and Zetas and things."

It can be argued that this should be left to the children's spare-time reading, but many teachers think that these topical and spectacular applications of science, as also such broad scientific generalisations as the theory of evolution or the nature of matter, warrant time in school; not only in the timetable of children taking science subjects but also in that of sixth form pupils who are not taking science.

New approaches

Examination syllabuses must take a share of the blame for the lack of attention to new discoveries. They could certainly be brought up to date at more frequent intervals. But the fact must be faced that, even if the present deplorable chasm is narrowed, a noticeable gap will inevitably remain. Nor must syllabuses be brought up to date simply by adding to them, or we shall soon pass the point where it is possible to find any time at all for discussion, or thinking, or fringe-of-the-syllabus work.

One feels that, to an almost frightening extent, the degree work of yesterday is the 'A' level work of today and, presumably, the ' O ' level work of tomorrow. If this is allowed to happen in terms of the subject matter and factual content of science subjects, the only possible result will be a worse version of the overcrowded, superficially treated syllabus than we at present have. If, however, we can bring it about in the more subtle and elusive field of ideas and concepts, and most of all in attitudes, then we shall make the kind of progress that really matters. There is only space here to deal with three possible methods of approach, in an attempt to illustrate how the shadowy but discernible " spirit " of modern science might enter in some degree into the ordinary teaching of average children.

The first is by no means new, but perhaps still too little used. It is the simple statistical treatment of results of quite simple quantitative experiments. An experiment in which each pair of children obtains a different result can be followed by a bringing together of these results. Perhaps the children will learn something about the meaning of terms like ' average,' ' scatter,' ' even distribution.' But more important by far is the possibility that they may begin to develop a feeling about results (something hard to put into words but which is the very essence of science), a realisation that " all facts are equal."

The second possibility is to encourage children to draw analogies; broad, even daring, analogies.

When the right note is luckily struck, youngsters enjoy an experiment with ideas as much as an experiment with test-tubes. A whole new branch of science, since named cybernetics, sprang into being as a result of brilliant, daring, fruitful analogy. It has given us words for ideas which enrich amazingly diverse spheres of thought; words like positive and negative feedback, hunting, noise-level, " bit " of information.

Though our children are unlikely to found new branches of science, we can help them to develop flexible minds; by suggesting some similarity between a wages-prices spiral and a loud-speaker howling because it is too near its own microphone, or noting that fashionable trends in the length of skirts (or, indeed, in strictness of school discipline) over the years may exhibit hunting or damped oscillations. Similarly, resonance must be more than just " something to do with tuning forks." The children's own attempts at analogies, however far-fetched or irritatingly half-true, are even more important and must be assured of a sympathetic hearing.

A third avenue worth exploring is the degree to which children can be deliberately helped to cope with complexity. Modern science has lost, probably permanently, the reassuring faith that a final formula is always beautifully simple. Complexity has its own more difficult form of beauty, as also perhaps have very large numbers. High-flown philosophy of this kind is not for children, but it is perhaps germane to the question of how best to teach those future technologists of whom we hear so much.

What sort of person, ideally, should this technologist be? His portrait is to be found, albeit larger than life, in the pages of some of the better science fiction. One of the most notable characteristics of his thinking—especially when he is escaping from that impossible situation by rewiring his intergalactic hyperdrive unit into something quite different—is that, coupled with an enormous depth and breadth of theoretical knowledge and practical skill, he is able to take that overall view of pure and applied science whereby mere complexity holds no terrors.

People like this are not the products of cramming, coaching, or being lectured at. They have to be taught.

(3) MICHAEL ROBINSON

IT IS NOT often enough said that science claims a central place in modern education because, on the basis of hard won facts and established theories, it has created the most powerful intellectual methodology yet produced by man.

For four centuries English education has been directed towards producing a synthetic quality of mind in a minority by contact with the best of mathematics, literature and art. Such an ' intuitive ' methodology may be enormously powerful but, even if it could be spread widely enough, it will not suffice for a society undergoing increasingly rapid scientific and social change.

The spread of rational understanding may well present fewer problems. The role of science is to infuse the curriculum with the habit of analysis and objectivity, using the widest range of materials to stimulate interest and satisfy emotion. To those who feel this to be irrelevant or high-faluting I would say that, unless we begin to concern ourselves with intellectual standards for 99% of our children, we shall fail in our social duty. It is primarily by the use of a wide variety of materials that an analytical and flexible quality of mind can be fostered in many more children. Practical sense experience is the basis on which vocabulary can be extended and oral and written synthesis rapidly improved.

Several years' experience in comprehensive schools has convinced many of us that considerable intellectual strides can be taken by children working in carefully planned structuralised conditions. Backward children in the third year, the majority of them girls, can grapple with Ohm's Law and induction, once the target has been made clear by showing them a range of electrical appliances and books based on these ideas. The emotional and intellectual barriers created by social conditions (' this is a boys' subject ') must be broken down and confidence built up. Ideas must be introduced very systematically. A great deal of research into sequence is needed, but at present I use :

(1) Electricity as a flow of negatively charged *particles*,
(2) *Current* as the number flowing per second,
(3) Voltage as the *pressure* they exert,
(4) *Resistance* as hindrance to flow.

I use water and human analogies, and even kinaesthetic drama with pupils as electrons. Most children then find it fairly obvious that the more current must pass through the larger resistance, the more force is needed—$i \times R = V$; and are prepared to tackle formal problems and practical determination of unknown resistances.

A common approach

If certain words—particle, current, pressure, resistance—have become familiar lower down the school, progress is more rapid. A common definition of such fundamentals should be agreed upon, and standard experiments used, such as Brownian movement, potassium permanganate convection and the fountain experiment. The concepts of particles and pressure recur throughout life and the vast majority of children can be clear about these by the age of thirteen.

The greater the number of variables in a given learning situation, the smaller the number of children who will benefit. The increasing turnover of teachers, and the growing number of pupils transferred as the mobility of labour rises, makes the adoption of some standardisation of learning situations and methods highly desirable. To neglect this task is to make a rod for our own backs.

Some particular examples may be given. Children who have seen the fountain experiment with steam, and who understand the term solubility, find little difficulty in understanding the fountain obtained with ammonia or hydrochloric acid. The idea of Units can be suggested in the first year, using their primary school vocabulary. My classes make up their own units for all sorts of things: irritability of teachers, 1 Rit = 1 Detention, or Unit sharpness of drawing pins will raise 1 child by 1 foot. Better design of demonstration material and, still more, of class apparatus, could aid this process and transform our laboratory results. The link between cylinder, piston, valve and eccentric is mechanically fundamental, yet apparatus designed for variable demonstration of this principle is very poor.

Why is there now such a gulf between methods at the primary and secondary level; such a divorce between play way and formal methods? Why the sudden idea that it is degrading to explain a theory concretely? Bragg's Cavendish lectures never suggested this. The older the children we teach, the less psychology we use. Could this account for the increasing lack of faith in children's potential as their age increases?

At present teachers are very like Marconi fiddling with his first transmitters, and there were the Jeremiahs then. However, within thirty years, the electronics industry has won the day, advancing on the basis of a vast programme of organised research. Such a programme does not exist in education. If we are serious about raising the standard of the average child, about the needs of retarded and backward children, we must rapidly create an organisation capable of co-ordinating experience and research.

A good start might be the fusion of the science masters' and the science mistresses' associations, and the opening of the joint body to non-graduates, possibly on an associate basis. One of its first tasks: to make new suggestions on curricula so that an extensive body of field workers could start experiments on method in the laboratories. But this would only be a beginning. With the increasing adoption of specialisation in secondary schools, we must strive for a common approach to the whole school curriculum, based not only on the structure of the different subjects but also on an ever widening knowledge of children's intellectual and emotional development.

A science of education?

Can we doubt that conditioning plays an enormous role in learning and that for most children continuity of method is the prerequisite for steady advance? The ability to see connections between apparently disconnected facts; the emergence of intellectual order and pattern from juvenile jumble and subjective intution; seeing how to tackle problems in general—all these can undoubtedly be conditioned, by exercises in the sort of patterns to look for, training in classification, vocabulary work. Simple tricks, such as changing the form of a question to bring oneself back to a concrete situation, can be effective; for instance, " What causes light to bend? " " What sub-

stances make light bend?"—"Glass, water." "Why?"—"Because they slow down the waves." "Why?"—"Because they are denser than air."

It may be thought that I take liberties with my subject. But I believe that many of our difficulties have arisen because we have all been too parochial. Under the slogan of freedom and variety, cross currents have endangered the educational ship. We need to work towards an educational science.

This requires a descriptive method which facilitates comparisons. We need to define our terms more carefully, to standardise the form and content of our tests at different levels. Discussion of time allowances for different subjects is important but can be frustrating. What would be interesting is a breakdown on other lines, for instance:

(P) Physical—physical education, the part of practical subjects spent physically.
(A) Aesthetic—art, music, drama, poetry, etc.
(S) Skills—practice, spelling, punctuation, computation.
(R) Relational Thinking—factual essay, problem solving, experiment design.

Perhaps some heads would oblige? The breakdown according to subjects would be even more interesting. The way in which I teach our four year science course could be reduced to a rough table, giving the percentage of time allotted to each aspect (average of all streams).

Year	*%P*	*%A*	*%S*	*%R*
1. Air, water, fire, plants, animals	30	20	40	10
2. Heat, earth, plants, chemistry	30	20	30	20
3. Light, sound, magnetism, electricity	30	10	30	30
4. Mechanics, electricity, chemistry, biology ..	20	10	30	40

The future presents many problems, in some ways qualitatively different from those of the past. The reward for their solution will be very great: for the first time in our history an educated nation could emerge. But, if they are to be successfully solved, we need a nationwide discussion on teaching methods and on the interpenetration of subject content, throughout the schools, particularly at the secondary stage. I hope FORUM will act as a catalyst.

Comprehensive Conference

JOHN WALTON

SUPPORTERS OF THE tripartite system must look forward to the future with considerable trepidation. The comprehensive school is surviving, indeed thriving, under the attacks of its critics, and is more than holding its own under the close examination of informed people from many branches of education. For a week in London it was dissected and held under the microscope by members of the course on "The Comprehensive School in English Education Today," organised by the London Institute of Education. This course was well attended. Its members were drawn not only from this country; many other parts of the world were also represented. Teachers, government inspectors, local government officials, members of education committees, were all obviously eager for inside information about the working of these schools.

In his opening remarks Professor A. V. Judges stated that the course was not intended to be "a defensive or an offensive operation." It sought only "to examine the problems of the non-selective school on their own merits." Indeed these remarks as it were set the tone for the whole series of meetings(1). The majority of the talks were given by people engaged in the day to day administration of comprehensive schools, and considerable opportunity was given for discussion and questioning. Undoubtedly one was impressed by the very hard work that is demanded of the staff of the comprehensive school. Yet the results in all spheres of school activity appeared to have more than justified the tremendous effort that has been expended. Some point, however, is given to Mr. R. G. K. Hickman's plea earlier in the course for a better staffing ratio in the comprehensive school than in other types of secondary school.

One of the highlights was the address given by Miss Y. B. Giuseppi on what would appear to be a most uninteresting topic—"Constructing the Timetable." Without doubt the charm of her delivery played a part in the success of this talk. But this was not all. What was really appreciated was capable presentation and exposition of a real problem. Here at last people felt that they were getting down to brass tacks. Perhaps this success of Miss Giuseppi points to some deficiency in the addresses of the other speakers. However this may be, the course must have helped many to place comprehensive schools in their correct perspective and served as a stimulant to those who are contemplating a closer association with this type of school in the future.

(1) Professor Judges' address will be published in the next issue of FORUM.

Education in the Soviet Union

SHENA D. SIMON

IT IS ONLY recently that most people in this country and the United States have become aware of the remarkable educational progress which has been taking place in the Soviet Union for the past thirty years.

The first detailed information was provided by the *Report on Soviet Professional Manpower* by N. de Witt, of Harvard University, published in 1955. This report stimulated a succession of specialist delegations from this country to find out for themselves about Soviet education. Two reports may be considered here; one on technological education, the other concerned chiefly with the schools(1).

Education of Engineers

In the autumn of 1956 a delegation of ten engineers, led by Professor Giffen, visited nine institutions in Moscow and six in Leningrad. The group included administrators, lecturers and industrialists and drew up a comprehensive report covering the background and administration of technological education, selection of students, content of courses, graduation standards, training of technicians.

There are some interesting comparisons with this country. In England the age of entry to higher technological education is 18½ years, the level of attainment is 'A' level of G.C.E., the duration of a broad foundation course is one to two years and the total course three years. In the Soviet Union age of entry is 17+, level of attainment somewhere between 'O' and 'A' level, the duration of a broad course two to three years and the total course five years.

The impression received is that the Russian graduate engineer stands higher on average than the British; but that to compare him with the British student who has done two years of an industrial apprenticeship (which has no parallel in the U.S.S.R.) is to give the latter prior place.

The delegation was startled to find that 50% of engineering students were women, by comparison with less than one per cent. here, the conclusion being that we neglect a large source of supply. The course involves a higher degree of specialisation than is the case here, which may be necessary in the present stage of the Russian economy. But it includes a compulsory foreign language. This accounts for the amount of translation of technical literature; clearly Russian technologists able to read English publications far outnumber British technologists capable of reading Russian. Individual consultation between staff and students prevails throughout the course and a staff member accompanies students during their training in industry.

The report notes that state control of both industry and education makes for good co-ordination between the demand for technologists and their supply. The fact that the Minister of Higher Education is himself a professor of engineering also makes for good relations. Technological students are exempt from military service, and standards of entry to the less popular specialisations are less severe while these also attract higher stipends. Teachers earn more than they could in industry and may earn an additional 50% of their salaries in research work or industrial consultancy. Such incentives mean that there is no shortage of teachers of science and mathematics.

The School System

The educational delegation spent two weeks in Moscow, one in Leningrad and one in Baku in 1956. It was led by the late Dr. Jeffery, then Director of the London Institute of Education, and included two teachers, a chief education officer, an inspector and the principal of an adult education college. The greater part of its report has to do with schools but there are shorter references to higher education, the training and salaries of teachers, and other topics. This report gives the best picture that has yet appeared here of school education in the U.S.S.R.

"An educational system must inevitably reflect the society it serves" and the report attempts primarily to present Soviet education against the social background of the Soviet Union. Nevertheless comparisons are made. For instance, the uniform curriculum and the central control of text-books is contrasted with the freedom enjoyed by English teachers. Though realising that the contrast would not seem so great to teachers from most other Western European countries, and that Russia might well not have progressed so rapidly towards universal education by any other means, the group stresses the desirability of more professional freedom.

The other striking difference found was " the complete absence of any grading of children according to their ability." All but a limited number of educationally subnormal children attend the same school and " any attempt to stream . . . is strictly forbidden." It would be superficial to dismiss this as " a doctrinaire refusal to face the fact of the wide differences of ability between children." The Russians strongly criticise intelligence testing and insist that " in the great majority of cases . . . apparent retardment is due to ascertainable causes which are capable of remedy " precisely by positive educational means.

This apart, Russian teachers admit to " a social purpose behind their common school curriculum." They have not abolished old class distinctions to replace them by new based on different forms of education. " They think that a common educational experience up to the age of seventeen is the right kind of foundation for the kind of society they are trying to build." The group concludes that the question of individual differences between children and of the right educational attitude towards these is " pre-eminently a field in which a fuller and freer exchange of views and experience would be of great benefit to education in both countries."

(1) " Report presented to the Councils of the Institutions of Civil Engineers, Mechanical Engineers, and Electrical Engineers, to the Minister of Education and to the British Council by the team of engineers who visited Russia in September, 1956 "; *Proceedings of the Institute of Electrical Engineers*, Vol. 124, Part A, 1957. " Education in the Soviet Union, a Report of a Study Tour " (a limited number of copies of the latter report are still available, price three shillings, from The Educational Interchange Council, 43 Parliament Street, London, S.W.1.).

The same point is made after a brief summary of research conducted by the Academy of Educational Sciences, in particular by its Institute of Defectology where " a staff highly qualified in the medical and educational aspects of psychology " carries out work " at a very high scientific level." The views they hold about the nature and treatment of backwardness contrast so strongly with those of educational psychologists outside Russia, particularly on intelligence ratings, that there is "a manifest and urgent need for a fuller exchange of scientific data."

In practice, the attainment of the average child in the Soviet Union has been raised to a point which we have been told is impossible, without neglecting the child whose abilities are above or below average. The report sets out to explain how such good results have been achieved in the absence of measures here thought essential to a high standard for the few, but hardly does so. Perhaps the authors underestimate the effect of a positive approach, the belief that abilities can be developed. More might also have been said about out of school learning. In the various pioneer and youth clubs a wide choice of activities, supervised by teachers, is available, but school subjects also figure in the programmes. Here a pupil behind in any school subject can get help, while the advanced pupil may range more widely.

This is also part of the answer to the criticism that the single curriculum infers an interest only in future citizens and not in individuals, though this dichotomy is surely false. One might add that the group did not visit any music schools, where instruction in every instrument is combined with the normal curriculum, nor ballet and theatre schools which bear witness to the encouragement of individual gifts in a field much neglected here.

Sixth form and industry

There is an interesting section on co-operation between home and school and the new boarding schools are briefly described. Developments have taken place so fast that new tasks are always arising and the Soviet Union does not hesitate to experiment. New changes are under way even since this group's visit. Some degree of bias in what approximates to our secondary school sixth forms is under discussion. Meanwhile achievements at work in industry and agriculture already count towards entrance to higher education. Next year 80% of places in higher educational institutes will be reserved for pupils who have two or more years' experience at work, leaving only 20% for those entering straight from school. This step, again, has been taken on educational as well as social grounds and the more mature students are already reaching higher standards.

It is clear that if we want to keep up with what is happening in this amazing country, we should send competent delegations every year. The cumulative effect of reading these reports is to suggest that, unless we are prepared to become a third-rate power, educationally and otherwise, we must undertake an " agonising reappraisal " of our own system. As the report just considered concludes: " In the measure of social priority accorded to it, and in rapidity of development, Soviet education is forging ahead to meet the technical and social needs of an expanding dynamic society. It presents a challenge that those responsible for education in Western democracies should be prepared to meet."

Inside the Comprehensive School

EDWARD BLISHEN

A BOY IN one of my classes recently discovered that his brother, a grammar school boy, was doing something called " precis." He was at my desk the morning after this discovery, half a dozen of his cronies with him. " Sir," he said, " why don't you give us precis ? " " They do it at the grammar schools," said another. " You tell us about it," decreed a third. " Well . . ." I said. It was really no moment to tell them what I thought of precis. It was not even a moment to tell them that certain activities we had regularly engaged in were in fact roughly and gaily describable as precis. " Come and see me in the dinner hour," I said.

I thought then, as I have thought often, that tripartism is quite the most stupid and frustrating concept that education has ever stumbled upon. Not because secondary modern boys become naively interested in precis; but because of the excitement which is aroused in them by anything they conceive to be a symbol of superior education. And because of the resentment one feels in them, the contempt for the way one has chopped education up. It is *we* who have labelled them low-flyers, not they. The undertone of resentment is sometimes difficult to bear. I felt it again not long ago when I was talking to a boy who was soon leaving. His English had never been good, but he was the school philosopher, a boy with a sceptical passion for R.I. and for fundamental discussion. What sort of job should he go for, he asked. Because I knew it would tickle him, I suggested he might become a parson. For a few seconds the idea convulsed him, and then he gave me his favourite piercing look—which always meant that there was more in what you'd said than you thought there was—and said with dignity that he wouldn't make a bad parson at all. And I felt again the curious falsity of the tripartite label that we had hung on a boy like this; a label that simply denies the mysterious and marvellous nature of human potentialities. He resented, and he had every right to resent, the ungenerous outlook that had chopped off, for him, the scragend of education.

There are, of course, more formal ways of saying all this; and they are to be found on page after page of *Inside the Comprehensive School.*(1) " The degree of comprehensiveness in most secondary schools is increasing year by year." (More and more children are in-

(1) Schoolmaster Publishing Co. Ltd., 12/6.

quiring about precis). " It is clear beyond question that tripartism is breaking down through its inherent contradictions." (Into which of the three parts do you put the boy whose English is poor—his verbal environment happens to be a wretched one—but who is a most earnest philosopher ?) . . .

It is an odd thing: here is a quiet, awkward, unprepossessing book which is quite the warmest and most exciting contribution to be made to our educational literature for a long time. When you've finished it—though no contributor has raised his voice or allowed himself the faintest eloquence—you are left with a vivid picture of educational sanity and wholeness. Here described are schools that offer to *all* the children under their roofs a great variety of experiences and opportunities —with no labels at all. Or rather, here are schools where—having been exposed to the experiences and the opportunities—*the children label themselves.*

One would, perhaps, hardly have expected to feel so excited by such a book. For here are head teachers talking about their schools. One expects difficulty in distinguishing *what is aspired at* from *what is achieved.* There is no difficulty of that sort here. One essay only is vague and hollow-sounding, and seems to clutch, every three or four sentences, at its lapels. None of the other contributors becomes for one moment rapturously vague. Each describes, patiently and with a great effect of truth, how some comprehensive problem is being tackled.

" Headmasterese "

It must be said, however, and sadly, that they are nearly all most tortuously difficult to read. Indeed, one must laughingly toss one's hopes of advancement aside and say that it's shocking that so many distinguished heads should write so wretchedly. Is there really—dreadful thought!—a style that has to be called headmasterese? It is sad, this, because one wants the book to be widely read.

And yet the book glows. All the great, menacing questions are answered, and answered both confidently and in a manner, and with a degree of detail, that inspire confidence. Is the comprehensive school too big? No one who reads Chapter VII, with its three different and equally persuasive solutions of the problem of size, will ask the question seriously again. Indeed, as Mr. Raymond King says in his most impressive summary, " Precisely because the problems have been so clearly foreseen and specifically planned for, it may well be that the individual is better looked after than in many schools of smaller size." Does the more able child suffer ? Does the less able child suffer ? To these sore questions, again, the book provides a striking unanimity of quiet answers. The contributors fall over backwards to point out that these are only, statistically, the beginnings of answers. But one sees already that it isn't merely that children are doing well who would have been identified as able children under the three-part system. Presented with a wider range of subjects than they could have expected in a normal grammar school, they are doing more *variously* well. What is more, they are being joined by children who under the other system would not have been in the running at all. As for the less able child, he is being educated in an atmosphere far richer and more provocative and less conclusive than he could hope for in a

secondary modern school: and he is being most scrupulously cared for.

In fact, out of these dry and unbeguiling pages emerges a vision of secondary education as something socially and intellectually and emotionally whole, not something chopped up. There emerges also—all the more impressive for the quietness with which it is given—the answer to those who claim that the comprehensive school is a political device for concealing differences. This book makes it clear that the comprehensive school is in fact an *educational* device for avoiding the imposition of hopelessly false and debilitating notions of difference.

No ' guilty men '

I write here, let me say, with far more assertiveness than the contributors to this book allow themselves. These are the voices of people who are using all the intellectual checks the importance of which we are sometimes told it is the unique task of the grammar school to instil. One lesson the book must embody for all but the most cantankerous of doubters: the comprehensive schools are in the hands of men and women who are fully conscious of our intellectual traditions. They sound singularly unlike a group of assassins stained with the blood of grammar school achievement.

Not that all is calm. One gathers that the staffing ratio is not always what it must be if the comprehensive school is to realise its own special advantages. One detects here and there a phrase that may be a pointer to discomforts within the staffs. But these are inevitable difficulties, not invalidating defects. One is left, in the end, with a sense of enormous achievement. There are statements here that carry discussion about one aspect or another of the comprehensive schools further than it has been carried before. One will go back, often, to to Mr. G. A. Rogers on the common syllabus (" We are learning that perhaps there are not such great differences in the quality of children's minds as in the nature of them . . ."), to Mrs. H. R. Chetwynd on the relation of the school and the community, and especially to Mr. King's wise sketch of a view of children that sees them in flexible terms of " polarities " rather than in fixed terms of " types."

Great variety

One last overwhelming impression. There is no such thing as *the* comprehensive school. Most loyally these heads speak for one another: but sometimes it is chalk speaking for cheese. There are still people who think of *the* comprehensive school as a vast educational monolith, dominated by a single basaltic head teacher. Anyone who will take a bit of a literary deep breath and let himself down into the cloudy verbal waters of *Inside the Comprehensive School* will come out on the other side having made the cheerful discovery that the *common* school is by no means the *uniform* school.

The N.U.T. is to be congratulated on having promoted this immensely valuable study. One would ask only that next time it does some promoting it will remember that a touch of glamour and liveliness doesn't come amiss. More carefully written, less stolidly presented, a valuable book might have become an invaluable one.

Getting Our Ideas in Focus

What are we, as educational publishers, trying to do? The appearance of a new educational journal prompts this self-questioning.

First and foremost our aim has been to produce books for *secondary* schools—without any qualification such as ' grammar ' or ' technical ' or ' comprehensive ' to follow the word ' secondary '. Many of these books are ' tailored ' carefully to fit the existing examinations—the GENERAL SCIENCE FOR SCHOOLS series by Ashhurst, Wellings and Green, for instance, or the little books of test papers in English Language by Finn and Oxtoby. And if sales are any guide, these are remarkably successful in achieving their objectives. But there are many others of our recent text books which owe little or nothing to examination syllabuses. Their general aim has been to give expression to new ideas on the teaching of a subject, and to appeal to (and stimulate) as wide a range of intelligence as possible. As part of this latter purpose we have put everything we could into perfecting their production, and we have welcomed the many appreciative comments received from teachers on our efforts. It has been even more gratifying, however, to find that such books as THE MAKING OF MODERN BRITAIN by Derry and Jarman, THE LIFE AND LIVELIHOOD GEOGRAPHIES edited by Shave, and A SCOTTISH HISTORY FOR TODAY by Gould and Thompson are widely used in all ' types ' of secondary school—that we have been right, in fact, in our unitarian approach to secondary education.

Secondly, we take pride in the help that we have been able to give—mainly through the publications we have issued on behalf of the Science Masters' Association—to teachers themselves. Our list of books for science teachers is, we believe, the most comprehensive of its kind in the world, ranging from the three-shilling pamphlet series SCIENCE TEACHING TECHNIQUES to the full-scale reports such as THE TEACHING OF ELECTRICITY and the newly-published TEACHING OF SCIENCE IN SECONDARY SCHOOLS.

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