

FORUM

SPRING 1967
VOLUME 9
NUMBER 2
PRICE : THREE
SHILLINGS
AND SIXPENCE

A Welcome for Plowden

Subject Teaching in Non-Streamed Comprehensive Schools

Mathematics *Brian Clayton*

History *R. D. Lobban*

Group work in English *George Robertson*

Non-Streaming: Counting the Costs

Peter Brown

Non-Streaming in Comprehensive Schools

FORUM Reporter

Non-Streaming in a Secondary School

Derek Cloke

Monitoring the C.S.E.

B. F. Hobby

Discussion

Eric Linfield, R. G. H. Andrews

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Dennis Smith

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J. F. Eggleston

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Business Information. FORUM is published three times a year, in September, January and May. Three Shillings and Sixpence per issue (3s. 9d. post free). Postal subscription Ten Shillings yearly. Correspondence relating to subscriptions, etc., should be addressed to the Manager, 86 Headland Road, Leicester. Tel. Leicester 37348.

Published by P S W (Educational) Publications, 71 Clarendon Park Road, Leicester.

A Welcome for Plowden

As we go to press, rumour has it that the Plowden Council's report will be published a few days before FORUM itself comes out. We have not, in any case, had the opportunity to examine and discuss it. Nevertheless we are prepared, on trust, to give its appearance a hearty welcome.

The FORUM Editorial Board presented evidence to the Council specifically on the question of streaming; in addition three members of the Board spent a full afternoon with the Council arguing the case. This evidence was later published in full, both in FORUM (Vol. 7, No. 1) and, with other material, as a separate booklet. At least 8,000 copies have been circulated by these means, and we are grateful to the Council for giving us the occasion for formulating and publishing our views in this way. Since then the movement towards non-streaming in junior schools has extended rapidly; indeed in some areas (for instance in the city and county of Leicester) it is becoming difficult to locate a streamed junior school.

Naturally we have awaited the Plowden Council's considered views on this question (whether unanimous or not) with much interest. Thirty-six years ago the Hadow report on *The Primary School* recommended that children in junior schools should be streamed into 'A', 'B' and 'C' classes whenever possible. The argument has become a classic statement of the case. We hope that the Plowden Council has reversed that recommendation, and that it has produced what will become an equally classic statement of the case for non-streaming. The wheel, we trust, has come full circle.

The Council has, of course, had at its disposal

the results (or at least the interim results) of the research on streaming undertaken by the National Foundation of Educational Research. Both the Plowden Report and that of the N.F.E.R. will be discussed in detail in our next (May) number, in which considerable space will be devoted to an evaluation of these important documents.

Meanwhile attention has shifted to the secondary schools, both in terms of reorganisation and, perhaps even more significantly, of the inner organisation of the comprehensive school. Included in this number is further material on the latter question: reports of conferences which followed up that organised jointly by FORUM and the Comprehensive Schools Committee last June, as well as contributions on subject teaching in the non-streamed comprehensive school, some of which arose out of the June conference.

FORUM will continue to give space to this question, and to act as a centre for the exchange of information and experience. There is no doubt, in our collective mind, of its fundamental importance for the future of education. What is particularly encouraging is the growing recognition of this view among secondary teachers. No one is suggesting that this change can be made easily; on the contrary it requires hard thinking, the willingness to experiment and indeed to change life-long habits; it requires also material resources which, as one of our contributors points out, are often not easily available. But, now that streaming is increasingly recognised as educationally and socially undesirable, these are being seen more as obstacles to be overcome than as insurmountable barriers.

Subject Teaching in Non-Streamed Comprehensive Schools

Two of the four articles which follow are by teachers who contributed to the discussion at the conference on non-streaming organised by FORUM and the Comprehensive Schools Committee last June; these are Mr. Robertson and Mr. Brown. The other two articles, by Mr. Clayton and Mr. Lobban, deal with the same topic: the methodology of teaching the non-streamed class. FORUM hopes to publish further articles on this topic in the future.

Mathematics

BRIAN CLAYTON

Brian Clayton teaches mathematics at Settle High school, a comprehensive school in Yorkshire.

Settle High School is a small, mixed comprehensive school in a rural area. The annual intake is approximately 120 children, and these are placed into four house groups of mixed ability. Until September 1965, the children were graded A, B, C and D, according to reports from primary schools. This grading was only used for academic subjects; in supposedly non-academic subjects, the children were taught in their house groups. At this time, I was completely happy with this arrangement, apart from the lack of system of grading on entry. Reports from primary schools were so varied in standard. This is quite understandable, since about half of our children come from one, two or three teacher schools. In some of these schools, twelve represents a full register; a few are even smaller. Comparative standards for 100 completely unknown children are difficult, if not impossible, to make.

At the beginning of the summer term 1965, the headmaster called a meeting of staff to discuss the possibilities of extending teaching in mixed ability groups with the new intake in the following September. My immediate reaction was that the teaching of mathematics to such groups would be impossible. I expressed my feelings, and gave several reasons to support my rejection of the idea. My mind was very firmly fixed on the idea that mathematics in secondary school should be a continuation of work done in primary school. Since children have all reached different levels of attainment in primary schools, I believed that they had to be graded and taught separately, in order to continue with work of the correct standard. I was convinced that the brighter children should be put into classes where they could be prepared for a G.C.E. course, using one of the standard four-volume textbooks. Other children should join groups where

they could consolidate their ideas of number, by methods they had probably never met at their earlier schools; where they could learn fractions, decimals, etc. One point about all this was that the non-examination forms seemed to do all the interesting work: drawing, counting, making models, measuring, and a great deal of other practical work.

After considerable discussion it was agreed that the mathematics periods for each of the four groups of first year children should take place at the same time. The idea of this cross-setting was that we should teach in mixed ability groups for about half a term, and then divide the children on performance during this half term, into four groups A, B, C and D. This seemed quite satisfactory since we would be able to look at the 120 children in the year as a whole, and in this way obtain a more correct ability grading than we could on reports from primary schools.

What to teach

The problem was what to teach, and how to go about it during this half term. Since we were to have mixed ability groups, I wanted to take the opportunity of experiencing all the benefits. To split the classes into sub-groups was considered to be undesirable, as this would cause the very problems we were trying to get away from. Once a child is put into a group where it becomes obvious that he is not as bright as the other children in the class, he develops a feeling of rejection, which seems to show itself in his attitude to work. I have often sensed this among children in our D sets, and I believe this to be a contributory factor to discipline problems in such sets. With four groups working on different topics within each class, the amount of time spent with each group could only be ten minutes in each forty minute period, and I do not subscribe to the idea that it is possible to do more with a small group in ten minutes than you can with a large group in forty.

The methods left open to us were teaching machines, or some other form of programmed learning, or to attempt class teaching. We do not possess teaching machines, and the task of writing and validating our own programmes seemed formidable. Class teaching was decided upon. Should it be found that a section of the class was lacking some small basic skill essential to the topic being covered by the class, a remedial group would be formed, but broken up again immediately the skill had been acquired. Of course this could only work if the skill could be learned fairly quickly.

There still remained the problem of what to teach. The first topic was 'graphs': to plot several block graphs and jagged line graphs from the given data. With varying degrees of prompting, all were able to draw graphs to satisfactory standards. The work was being done in four mixed ability groups, with four different teachers, and it was thought that whatever we taught should be taught using the same methods and as near the same material as possible. For this reason, when 'angles' was chosen as the second topic, teaching notes were provided to ensure consistency in ground covered and method of approach. This was done only for this topic as it was found to curb the freedom of individual teachers to too great an extent. At the time it seemed fair, if the children were to take a common examination at half term.

Whilst teaching 'angles' I realised what a pleasant atmosphere there was amongst the children. They were friendly, keen to ask questions as problems arose, co-operative, and so eager to learn, and had all the other good qualities of a first class group. There is always an eagerness with first year children, but this group had something other than this, and I felt that if we put the children into ability sets at this time, we would lose a great deal. This point was put to the other three teachers concerned, and it became apparent that this feeling was common to all. All four of us wanted to keep our mixed ability groups.

There was, however, still the problem of suitable topics. If we were to maintain class teaching, which seemed to have been the essence of our success, we could not teach topics which would, through their very content, split the class into those who could follow and those who found it impossible because they hadn't the necessary basic skills. Any topic chosen had to be new and it had to have very simple basic principles. It would also have to have scope for development so that the brighter children would not become bored. I had been doing some work in my spare time on Boolean algebra. The very early stages of this topic seemed ideal for our groups, provided that it was approached in the

right manner. Children at this age, in a new school, are only too eager to absorb completely new ideas. This was certainly proved to be correct. They thoroughly enjoyed doing mathematics which appeared to be completely unrelated to all their previous experiences in the subject. The results were most satisfying. Even the least able children could draw Venn diagrams of unions and intersections of sets, which they had discovered for themselves. After a few weeks of studying a different topic, most of the children had retained a clear idea of the language and symbols of sets; a few had let the ideas become a little confused, but I remembered that whilst the work was being done, everyone had benefited from the experience. For this reason, I considered it to be worthwhile retaining it in future first year syllabi.

A new syllabus

Before the end of the Autumn term, the four teachers met and decided that the mixed ability groups should be kept for the whole of the first year. A syllabus now had to be drawn up. We couldn't find topics such as sets, to cover the whole of the first year. Decimals and fractions were almost certainly going to be required at some stage and so these topics had to be included. Very few of the children had more than vague ideas of area, and all of these seemed to be confined to the area of a rectangle. Area was therefore included. Algebra was also to be introduced as a generalisation of the rules of arithmetic. Number was put into the syllabus, the emphasis to be on an understanding of the denary system, rather than just learning the four rules of number. With this in mind, number systems other than denary should be studied; a history of counting and recording number should also be covered. Directed number was included, but was only to be done as the need arose. I consider this point to be important, as the topic can be too abstract if it is introduced in isolation.

This list of topics sounds very traditional, but we were now beginning to develop new techniques, and I had many ideas which would make the topics enjoyable for the group as a whole. The important point about this list of topics is that each item is virtually independent of the others. Each topic could be studied by each child working to his own individual standards. This works provided that one small principle of the topic is taken at a time and carefully graded examples are set for practice. Standard technique, yes; but the part of the lesson which precedes the written work requires far more detail, demonstration, variety of approach, than I

have ever experienced with a group graded according to ability. Topics such as length, money and weight have been introduced into the work at any stage where they have proved to be useful. Multiplication tables have been written out in the backs of the books of children who have not managed to learn them in their junior schools. This has been done in the hope that such children will eventually learn tables through constant use.

Flexible methods

We agreed that there should be complete freedom of method, and that if any point in a lesson led to a subject requiring further development, it should be taken to its logical conclusion. A good example of this occurred whilst I was teaching area. A square inch had been drawn out, painted, and distorted until it no longer looked like a square inch. Duplicated maps had been shaded and their areas converted to square miles. Rectangles had been shaded, squares counted, and eventually a formula arrived at. Most of the children had calculated areas of triangles, and some had even arrived at areas of trapezia. The next thing I did was to draw the graph of length of side of a square against area of the square. This immediately led to pairs of numbers connected by a simple rule, the rule being that the second number is always the first number multiplied by itself. We then thought of other rules and drew some straight line graphs. The group had not studied numbers less than zero, and therefore the lines came to an abrupt end on one of the axes. The children wanted to know why: Directed numbers. Using a pair of ordinary kitchen scales with two equal pans and a large set of one ounce weights, I was able to demonstrate the addition and subtraction of plus and minus numbers.

The main difficulty whenever I have taught this topic has been to put over the difference between —meaning subtract, and —when used to indicate a number less than zero. After convincing the children that a balance of the scales represented zero, and the force which caused it to swing one way or the other represented positive and negative number, the rules followed easily. Weights were put on to the appropriate side for addition and taken off for subtraction, thus ‘—(—)’ becomes ‘remove from the scale weights causing a negative force’. Rules for multiplication were eventually arrived at. Once the principles of directed number had been grasped, we went back to graphs, and extended the straight lines into the negative regions. The lines now went on for ever in both directions and all were satisfied.

The enthusiasm for this kind of work made me think that the children might be able to plot a graph of $y = x^2$, for x positive or negative. Since part of this curve had been plotted already it was done easily. I introduced the idea of writing the pairs of numbers on to the graph in the form (x , y). The language was kept simple and words such as ‘co-ordinate’ were not used. Other simple parabolas were plotted. Some of the children needed help in working out the tables of values, and I felt that we could not take the topic any further.

Who benefits?

Who has benefited most from this kind of teaching, and has anyone suffered through it? Have the brighter children made as much progress as they would have done working as an A set? These are two of the many questions I have been asked, and I believe they must be answered. I should say that the less able children have had most benefit from this teaching. They have all worked successfully at topics which we have considered too difficult for them in previous years. Either this year is exceptional in that it has no real backward children, or in previous years we have aimed our work at too low a standard. I am inclined to accept the latter of these two alternatives. These children are capable of accepting far more abstract ideas than we think. The amount of work covered by the brighter children is less than they would have done as 1 A, but the work they have done has kept them interested and eager for more. Furthermore, the basic principles of the topics covered have been studied in far more detail and understood far more thoroughly than they would have been had the children received our normal A stream teaching. With the keen interest in the subject which has been developed in these children, any gaps which have been left will easily be filled in when the children are setted on ability.

Another interesting question was: whether I would retain the new techniques and methods we have developed if I were to teach this age group in streams again. The answer to this is certainly ‘yes’.

The teaching in mixed ability groups in the first year has been so successful that we have now decided to continue into the second year, but again the groups have been cross-setted on the timetable so that we can put the children into ability groups if this becomes necessary. This will be when the less able children are being pushed out of their depth or when the work ceases to stretch the brighter children sufficiently.

The Teaching of History

R. D. LOBBAN

R. D. Lobban is Lecturer in History at Moray House College of Education, Edinburgh.

As the movement towards comprehensive secondary education and towards unstreamed classes in the early years of the secondary school gains increasing momentum, many teachers are becoming somewhat alarmed at the prospect of being called upon to teach in one class pupils with I.Q.s ranging perhaps from 150 to 75. They sincerely believe that the results will be disastrous and that an intolerable burden will be placed on the suffering, overburdened teachers by this scheme concocted by idealistic, impractical and starry-eyed dreamers. It therefore behoves those who favour the principle of unstreamed classes to outline in as practical a way as possible the methods they would adopt in teaching such classes and the manner in which they would seek to overcome the problems involved. This article is an attempt to carry out this task so far as the teaching of history is concerned.¹

One of the major obstacles in the way of a more general acceptance of the idea of unstreamed classes in the early years of the secondary school is the belief held by many teachers that history for the academic pupil is quite distinct in essence and in kind from history for the non-academic child. They see the more intelligent pupils as being capable of studying 'real' history, the critical analysis of man's motivation and action, while in their opinion the less able children can do little more than study some kind of social history.

A false antithesis

Such a view, however, exaggerates the differences between the history studied by various groups of children and ignores the very real elements they have in common. If the emphasis is somewhat changed and we come to see school history not as the learning of a body of knowledge and concepts but as an enquiry into men's actions in the past and as a process whereby the pupils undertake an imaginative reconstruction of the past to the enrich-

ment of their own lives and experiences, then the false antithesis between academic and non-academic history disappears. It is thus quite practicable for us to teach an unstreamed class as a group instead of a collection of individuals of widely varying abilities. The common core of their studies will be this imaginative reconstruction of some past event, and although their appreciation of this experience will undoubtedly differ according to their emotional, intellectual and social development, yet there will be more than enough common ground to make real class work possible.

Nevertheless, though the pupils in an unstreamed secondary class can thus have a common purpose in their studies, it is clearly essential that the methods adopted should be as flexible as possible so that all the children with their different interests and abilities might be allowed to undertake appropriate and suitable activities. Such a consideration would appear to rule out the traditional chronological syllabus with its forty or so topics to be 'covered' in one session and its concentration on the oral lesson, and makes it almost imperative that some method which allows for a more intensive study of particular topics should be chosen.

Some teachers might therefore adopt the 'Lines of Development' method, but the present writer is of the opinion that the 'Patch' method as pioneered by Dr. Marjorie Reeves is the approach which would best solve the problems presented by unstreamed classes. The taking of a historical Patch for detailed and intensive study provides opportunities for a wide range of activities suitable for pupils of different levels of ability, but yet at the same time makes possible the imaginative experience which will transform the individual activities into a group or class enterprise. During a Patch on Roman Britain, for instance, the academic pupil might read Caesar's account of his campaigns and make a critical assessment of the main historical movements and developments of the period, while the non-academic child would perhaps concentrate on the lives of the ordinary people and the stories of some great men and women; but if the Patch is a success, then both will be experiencing imaginatively at an appropriate level what it was like to be alive in Britain under the Romans.

One important means of stressing the elements that all pupils have in common in the study of a Patch is to introduce group work and to ensure that as well as pursuing their own individual studies the pupils should at some time co-operate towards a common end or objective. This might, for example, involve the construction of a model, the performance of a play or the presentation of a pageant of the period being studied. The academic pupils might

¹ The article is a condensation of a lecture given to a group of Scottish specialist teachers who were discussing this problem.

then write a script while the non-academic pupils paint scenery, construct a stage or make costumes, but each according to his abilities should make some real and vital contribution.

The effective use of such projects would go a long way towards achieving those benefits which many enthusiasts declare would follow upon the abolition of streaming. All the children will have a part to play, and since the weaker pupils will feel that they are making a worthwhile contribution, they will not consider themselves failures and lose the incentive and motivation which often disappear when children are placed in a lower stream. The academic pupils, too, will come to realise and appreciate the qualities of their less gifted classmates when they see them performing certain tasks which they themselves could not undertake.

It will be found, moreover, that those who are too often considered as the poorer pupils are capable of undertaking work of a surprisingly high quality. The writer knows of one 'non-academic' class which made a successful study of the history of their school. They consulted the school log and copies of a local newspaper, and interviewed retired teachers for their observations on the school in the past. Thus, a lower stream class in fact studied documents and source material, a type of history which is often regarded as the province of the university and post-graduate student.

Nor need the academic pupils, as many teachers seem to fear, lose ground in unstreamed classes adopting the Patch method. With the opportunities given to them of private study, of undertaking an enquiry in depth and writing essays on their findings, they can often make much more progress than under the more customary regime of class teaching in streamed schools. The writer well remembers one pupil who was a member of an unstreamed class for two years of a secondary course, but who took first place in the history bursary competition at Edinburgh University.

The teaching of unstreamed classes by the Patch method, however, is not without its problems. Large, well-equipped classrooms are essential, while the organising of group work with children of varying abilities makes considerable demands on the teacher's powers of organisation and ingenuity, so much so that it is imperative that classes should not exceed thirty in number.

Examinations and assessments

An even more serious difficulty, perhaps, is the question of examinations and assessments. One might argue that there is little need for examinations in history in the early years of the secondary school

and that it would be tragic if the need for studying examinable material should distort the syllabus, but nevertheless many school authorities insist that the pupils should be tested and examined. There is no reason, however, why we should base our marks on the memorising of factual content and why we should not assess the pupils on their day-to-day work and on their contributions to class projects. It would, of course, be necessary to ensure that pupils of less academic ability should be able to score high marks so long as they were working to capacity and were experiencing at their own particular level the life of a past age.

For the purpose of selecting those pupils who would be capable of proceeding to further study in history, teachers might make periodic assessments or set an examination based on more traditionally academic lines at the end of the early part of the course. Alternatively, all pupils might be allowed to enrol for a term in a certificate course and then be required to display some evidence of academic competence before they would be allowed to continue.

An approach to history as outlined in this article, with the adoption of the Patch method, should make it possible to secure all the social and educational benefits of unstreamed classes without in any way sacrificing the standards of attainment of the brightest pupils. This approach would involve abandoning the idea that history in the early years of the secondary school is an academic discipline aiming at the acquisition of a large body of historical fact, and so organising the methods and the syllabus that the pupils come into contact with vivid imaginative experiences. In this way the children might come to have a real liking for the subject (a major revolution this!) while at the same time the more academic children would be acquiring at their own pace those skills and techniques they will require for more advanced studies in the subject.

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Group Work in English

GEORGE ROBERTSON

George Robertson is senior English master at Abbey Wood school, London.

A forthright challenge asserting that group work is a quite unnecessary fad of progressive teachers, such as that raised by a questioner at the Forum-C.S.C. conference in June last year, is worth answering in detail. It is, I feel, a clear contradiction of the theory that teaching should be organised in relation to the needs of the child.

My own experience of teaching at Abbey Wood Comprehensive and elsewhere, as well as observation of children taught by others, seems to me to argue the importance of group work.

First, it seems that children do not develop continuously; they advance sometimes in spurts, sometimes steadily, sometimes not at all, and in different ways—some only progressing in oral roles for a long time, others gaining control first and fluency later, and so on. True as this is of any class, it is certainly a major factor in a mixed ability class.

Secondly, it requires a considerable effort by teachers to eradicate the tendency of children to turn and talk to each other when they are excited and interested by something—it may be a stimulus offered by the teacher, or a piece of work of their own. To eradicate this response among, say, a group of adults who have just heard a stimulating talk, or seen a good play, would be to destroy a major part of the pleasure and of the educational value of the experience. This first flush of talk, properly guided, is just what I want—articulating and reviewing one's responses in terms of others' makes learning a creative activity.

Of course, in this situation, one wants to turn to one's friends. We have been told over and over again by children in unstreamed classes in English that they prefer unstreamed work because they are then with their friends. Especially in the large school the confidence and aid to fluency given by working with and for your friends is important. Streaming cuts across friendships very often indeed, as we find.

To add to separation from one's friends the sense that one's inadequacies are what identifies one, is to make a strong bid to destroy confidence. Witness the low stream class who introduced themselves to me as the 'nuts', and who several times asked me not to take work on to writing because they could not do it well enough. I compare them with three low stream boys from an unstreamed class who formed what they called the Story

Group: they meant it as an indication to me that in their group library project they wanted to write stories, and not look things up and write non-fiction about them. The secretary of this group wrote in his end-of-project report that he did better than the others, but like them must improve his handwriting: more strikingly, a child from another group wrote, 'I like how house (unstreamed) group best because in how academic group you work for yourself but in how house group you work for the group'. To put it in other terms, there are educational advantages in working *with* the group, and social advantages in working *for* the group.

The groups begin to develop early in the routine of our unstreamed classes: in a sequence of work on a composition the point comes when having completed a first draft the children exchange their work, both to read and enjoy but also to correct and comment on what has been done; they can always ask each other for help or advice. Bright children spontaneously teaching others to use a dictionary are doing work which needs their full concentration; and the less able, who are gaining reading experience, are not always the less vivid or stimulating by any means. The groups develop further in periods when they can choose from a number of activities and work in pairs, groups, or alone—and in the library, where library groups are formed in which a leader transmits and supervises discussion and writing of answers to library training job cards in each group. During such activity the teacher is freed to move among the children doing the most effective form of teaching—talking to individuals.

Later, the children form friendship groups of varied size (from three to six), which give themselves names (The Angels, The Rogues, The Candidates), and which have a special display area for their work. Out of class work each group then develops plans for topics associated with the initial work which will form chapters in a class book which can go in the class library. There are no individual folders at this stage. They may have a wide range of types of work to use and a free choice or be carefully guided. The teacher, and anyone else who can be brought in, spends all the time talking to groups and individuals, guiding, clarifying and extending their plans, and doing a good deal of straight instruction as well, according to individual need and aptitude. The children, however, are very largely concentrated on what they feel is their work, and on each other.

Later I tried to test the social and academic effects of these methods in two projects. In the first I imposed pairings which I deliberately chose on particular principles such as most popular with

least, the brightest with the slowest and so on. I explained to the children that to comment or react on my pairings would be cruel or embarrassing, and all but one pair accepted my grouping and worked well—the pair which objected also succeeded, but needed to be given a good deal of material, where the others developed their own (working on plays based on improvisations stimulated by photographs). The second ‘test’ was preparing and giving a formal talk in pairs. Previous group work had informally developed group oral planning and presentation of material, and this was very testing of confidence and real ability to organise. It is important to set this group work in a context of lesson sequences on themes where reading, writing, film, drama and all the separable English skills can be used as the need arises to illuminate a central interest.

The children accept their differences. Disturbed children can lean on the efforts of the groups for

a while without provoking conflict with the teacher, but still observed by the teacher. At all abilities there are varied opportunities for development. Work comes closer to being an enjoyable extension of their own interests and relationships.

Now, working more conventionally at the start of their second year, it is striking to see how these children, covering a wide range of ability, have developed; but, while some are extending their ability to structure their work, or to make their vocabulary more sophisticated, and others are learning to write four or five sentences accurately, they are still discussing the same stories in preparation for composition, still listening with interest to each others’ work, and freely going to each other for help. The effects of this sort of independence from the teacher, and of this sense of each other’s educability, if it could be sustained into the senior school, should have the most interesting effects on the scope and type of work then possible.

Non-Streaming: Counting the Costs

PETER BROWN

Peter Brown has recently been appointed headmaster of Walworth school, London. Previously he was deputy head of Henbury school, Bristol.

The truism is still only too true that we teachers do not give enough attention to research. We know there is a vast amount of it; but it mostly operates at the periphery of our workaday consciousness. Meanwhile the teachers’ power of change and innovation, and power to make demands on scarce resources, grows to formidable proportions. Here we have the makings of any number of incongruous and dangerous situations, according to the number of tests and trials which chance may throw up. It is rather like venturing to the bridge table without knowing how to bid beyond the game level. You might get by for an evening . . . but sooner or later you will pick up a 30-point hand. I believe that non-streaming, if one takes it up, is just such a testing deal. Shall we muster enough courage, verve, technique, teamwork? Maybe, maybe not. But, as our bridge partner is all too likely to remark after the event, we might at least have looked at the score! That is what I shall try to do in this article about non-streaming, to look at the score.

First, the teachers. Assuming (and it is a bold

assumption) they accord their goodwill to the non-streaming venture, how will they fare? Here already we are confronted by variables. Non-streaming itself, clearly, will be onerous, to varying degrees for the teacher, according to circumstances and to the arrangement that is made. My own inquiries about unstreamed schools have tended to bring to light ‘easements’ of various kinds: for example, an intake comprising appreciably less than the full ability range; or a dispensation giving exemption to certain subjects, usually languages and mathematics, for which setting is allowed. But for the moment the variable I am more concerned with is the teachers themselves. Can one pick one’s way, individual by individual, through a typically variegated staff, and conclude that in the main they will thrive on non-streaming? Perhaps we hope that the non-streaming principle carries a charge of magic sufficient to energise and, where necessary, to transform. A senior colleague once told me he had been a student at the Perse School in the days of Caldwell Cook, to whose method, Play Way English, I was much attracted at the time. I eagerly asked for my colleague’s first-hand evaluation of the marvellous method. “Play Way?” he rejoined. “Cook could have done it any way. He was a first-class teacher, that’s all.” So in this instance there was no magic wand to be handed down: just a magician to remember. Well then, must we have magicians on our teaching staffs to make non-streaming viable? I think we must. But I

don't think we can allow such practitioners to remain shut away in their fastnesses, only hinting their secrets by a laconic mutter over coffee. In effect, the reorientations that non-streaming will demand of us all will put a high premium on the force of inspiration and example to be gained from our ablest teachers; and in order to avail ourselves of this, we have to move into what we might term 'open plan' groupings and teaching situations. In the process, we shall forego some of our privacy and autonomy.

"The more we are together, the happier we shall be!" I should like to think that this is the burden of the foregoing paragraph. But, in the short term, I have to confess my doubts. Group teaching does often turn out to be very rewarding. But it seems also to bring along its own entourage of tensions, vexations, exhaustions. And all too often the strains prove too great, and the venture collapses. Obviously, there may be initial difficulties attaching to the very business of getting into multiple harness. Let us hope these can usually be overcome. What seems to me far more pernicious is that it is precisely when we apply ourselves to improve the quality of our teaching that we realise just how rigorously we are imprisoned in conditions hostile if not fatal to our purposes. A review of these conditions, and an assessment of the extent to which they can be overcome, is the 'cost analysis' that should precede any venture into non-streaming.

First, we have to look at the teacher's load. After all, we shall be adding to it substantially by non-streaming. So we should first check what he is carrying already, to see if we can't shed some of it; to see that what remains is reasonably distributed; and finally, to make sure that the poor beast really is capable of taking on a few more 'last straws'! Thus, I would want to see a substantial reduction in the amount of class teaching, to make way for the thorough-going individual tutorial and pastoral care that will be vital to the well-being of unstreamed groups. I think, too, that the debunking of some of our marking and examining is timely and wholesome; and new circumstances give special point to our perennial stir about the non-professional duties we undertake. Lest it be felt that I have not made out my case for a redistribution of the teacher's load, I had better add a word here about planning and preparation. Planning means meetings: meetings most days of most weeks, and most times of the day—if you are really going to set about unstreaming, while still having a care for all those other matters. Preparation means thinking up, writing, drawing, painting, building, filming, taping, visiting what you hope will turn out to be the material embodi-

ments of the programmes you have been hammering out in all those planning sessions. Why all this flurry? Well, the ready-made material is scanty and sometimes hard to come by; certainly the vast corpus of educational publishing in this country is devoted to the streamed consumer.

If this picture is not a gross exaggeration (and within the scope of my own observations, it happens to be accurate), then is the upshot of all this to be that non-streaming is impractical in secondary schools until such time as we can obtain and afford, many more teachers? I don't believe this. On the contrary, I believe we have, broadly speaking, nearly enough teachers for our purposes, and indeed for the teaching spaces available—if only they are properly supported. Now it is pretty well agreed what this support should be: a liberal and imaginative deployment of ancillary staff; and improved use of mechanical aids. As to the latter, this is not so much a question of making more machines available (though this in itself should be a boon), rather a matter of making what we have got more fully operational. We surely cannot afford to accumulate educational hardware without also acquiring an educational technology, and a good deal more managerial expertise. But some of the problems touched on here are complex ones, and scarcely within the unaided competence of school-teachers. The initiatives must come from elsewhere.

Just as a basic reorientation such as non-streaming should call forth on-going collaborations among members of the teaching staff, so, too, should it between the school itself and other interested bodies. First and most obviously, primary schools. After all, if we expect from 11-year olds attitudes such that they can exploit the learning situations we shall provide, then we must hope that these attitudes will have been implanted at an earlier stage. So it is more than ever important to attain a harmony of aims and approach, even perhaps in some degree of method and content, between the upper reaches of the junior school and the first stage of the senior. Unfortunately, the process can be very difficult, even given the utmost goodwill from all parties; for instance, we at Walworth receive children from more than thirty primary schools. One other liaison I should like to mention, as being of great potential value, is that between the school and colleges and university departments and institutes of education. I don't think we yet build sufficiently on our common concern with young teachers and with educational ideas. In particular, student teachers, and their teaching staff, could be more importantly associated with major undertakings in the school, both in

Continued at foot of page 48

Non-Streaming in Comprehensive Schools

FORUM REPORTER

The full-day conference on non-streaming in comprehensive schools, organised last summer by FORUM and the Comprehensive Schools Committee, and attended by some 400 teachers (see FORUM, Vol. 9, No. 1) has now been followed up by three further conferences on the same topic. On 21st October a conference on non-streaming in secondary schools—probably the first of its kind to be organised by a Local Education Authority—took place in Gloucester. This was organised by the Gloucestershire L.E.A., and opened by Mr. Milroy, the Chief Education Officer, while Mr. Bullough, Assistant Education Officer, took the chair. Gloucestershire already has a number of comprehensive schools, and is planning further changes. The conference was attended by the head and one class teacher from all Gloucestershire schools—about 180 in all. The opening statement here was made by Mr. E. Stones, author of a textbook on educational psychology, reviewed in the last number of FORUM, who talked on 'Some psychological factors in unstreaming'. The other two main speakers were Jack Walton, headmaster of Beaminster school, Dorset (and member of the editorial board of FORUM), and Derek Roberts of the David Lister High School, Hull, whose contribution to the June

conference in London those present are not likely to forget. Mr. Walton spoke on 'The Headmaster's view', and Mr. Roberts on 'The Class Teacher's view'.

This was followed, on 5th November, by a Teach-In organised by the Nottingham Institute of Education under the heading 'Organisation within the Comprehensive School', which in fact resolved itself into a discussion on streaming and non-streaming, as was intended. The response to the announcement of this conference was extraordinary, over 300 teachers, administrators (including Directors of Education), and local councillors being present, many applications to attend having to be refused owing to lack of space. Those attending were drawn in the main from Nottinghamshire, Leicestershire (especially from the Leicestershire High Schools), Derbyshire and Lincolnshire. The Teach-In was chaired in turn by Professor Harry Davies and Dr. J. C. Daniels of the Nottingham Institute of Education, while the following speakers were allowed twenty minutes each—their contributions sandwiching open discussion: Brian Simon, of the University of Leicester School of Education; Mr. K. A. Mayes, headmaster of the Martin Secondary School in Leicestershire, a school which de-streamed itself some years ago; Mr. R. J. Thom, headmaster of Fairham Comprehensive School, Nottingham; Mr. J. Jackson, head of the history department of Woodlands Comprehensive School, Coventry; and, once more, Mr. Derek Roberts of the David Lister High School, Hull. It will come as no surprise to those who have heard Mr. Roberts that, at the end of his twenty minutes, the whole audience vociferously insisted that he be allowed more time.

Early in January a residential conference lasting three days on the topic 'Teaching in Unstreamed Secondary Schools' was organised by the University of Exeter Institute of Education. Its purpose was 'to explore what might be called the pedagogy of teaching unstreamed groups of children' with the aim of preparing material for publication. A number of different subjects were dealt with, Dr. Pedley, Director of the Institute; Mr. J. Walton, and, once more, Mr. Derek Roberts, playing leading parts. It is hoped to carry some report of this working conference in our next issue.

In addition, working groups on problems of non-streaming have been set up in some areas; in London, Michael Armstrong, now a member of the FORUM editorial board, has organised a group

Continued from page 47

planning and in execution. Here again, there are all sorts of limiting factors. Many schools are geographically too remote. But within the orbits of the institutions of higher education, there are doubtless opportunities ripe for the taking.

Discursive though this account has been, various items, such as accommodation, have been omitted. But the principal figure, namely the school child, has been reserved for the final entry. For here is the point of the whole business, of our 'cost analysis' of non-streaming. The child is our capital; we want to show a profit. So do we invest in non-streaming, and if so, up to what amount? But this is the point of departure where we all must seek our fortunes as best we may.

The opinions expressed in this article are the writer's, and do not necessarily reflect the views or policy of the I.L.E.A.

which includes heads and class teachers from comprehensive schools, and which is concerned with problems of content and method. At the Leicester School of Education another group is in being, while a study group has been set up in Nottingham following the Teach-In. There are probably others elsewhere. Future conferences include one to be held at the University of York on 4th March (organised by the York Young Teachers). The course programme includes an opening session (Brian Simon) followed by a session addressed by Michael Tucker (headmaster of Settle Comprehensive School and a speaker at the London conference last June), and another addressed by Derek Roberts. The afternoon will be devoted to group discussions and the conference will be summed up by Professor Harry Rée of the University of York.¹

It is impossible to sum up the rich wealth of material, and of experience, which is emerging at these conferences and study group discussions. At the Nottingham Teach-In, for instance, the two class teachers on the platform had had a good deal of experience in completely unstreamed comprehensive schools. While the approach detailed by Mr. Jackson of Woodlands differed considerably from that of Mr. Roberts, it seems clear that the actual experience of teaching non-streamed classes reinforces the desire to do so. Mr. Jackson concluded by saying that the staff at Woodlands school would not go back to streaming—all seventy-five were convinced that non-streaming was educationally more desirable. A variety of views were, however, expressed by the conference members as was to be expected, while Mr. Thom, head of a purpose-built comprehensive of 1,650 children, had no doubt that children should be streamed by 'listening carefully to what the primary heads say about the children and grouping them accordingly'. One Leicestershire High School head felt that non-streaming in his contributory junior schools was leading to a decline in standards, a point of view that, while winning scattered applause, was immediately countered by another. In the course of the day's discussion, a good deal of attention was given to the methodology of teaching non-streamed classes.

In closing the Gloucestershire conference, Mr. Bullough said that, although he did not expect all the head teachers present to start unstreaming their schools on the following Monday morning, he was sure that very many of them would be thinking

about the question in a new way as a result of the conference. This effectively sums up the present phase. The significance of conferences of this kind is that they allow for the exchange of experience and ideas and stimulate new thinking in the schools and staffrooms. The response to those that have been held shows that there is widespread and growing interest in this fundamental question. It is worth noting that the educational press in general seems unaware of the significance of this development; the *Times Educational Supplement* clings, editorially at least, to its stereotype of the prismatically streamed comprehensive school in its last ditch and increasingly boring battle against change. There can be no doubt, however, that the work of these conferences and groups will be systematised in the future, that reports and documents generalising methodological questions will be produced, so that the transition to more flexible forms of school organisation will be shown to be both practicable and fruitful.

Would FORUM readers please keep the Editors informed of any conferences, study groups, etc., being organised so that attention can be drawn to them in future numbers, and, where possible, the proceedings reported (Ed.)

**EDGE HILL COLLEGE OF EDUCATION
ORMSKIRK, LANCASHIRE**

**THE NATURE AND PURPOSE OF
SECONDARY EDUCATION—WITH
SPECIAL REFERENCE TO CHILDREN OF
AVERAGE ABILITY**

ONE TERM COURSE

Edge Hill College will offer in the Summer Term, 1967, a ten-week course for teachers who are or wish to be, concerned with the education of secondary school children. The course will have its roots in recent reports on Secondary Education, especially those of the Schools Council and the Newsom Committee.

Through lectures, films, discussions, visits and practical work members of the course will investigate the role of the school and the function of the curriculum in relation to new trends in society in both work and leisure and in relation to pupils' interests, social background, and community resources.

The course is recognised by the Department of Education and Science, and those teachers accepted for the course may apply to their Local Education Authorities for secondment on full salary.

Vacancies still exist for both Spring and Summer Terms. Applications should be submitted as soon as possible.

A prospectus giving details of the course may be obtained from the Principal, Edge Hill College of Education, Ormskirk, Lancashire.

¹ FORUM has been asked to announce that this conference is open to all teachers and students in training. The fee is 8s. 6d. and application forms may be obtained from Peter Mouncey, 8 Badger Wood Walk, Hull Road, York.

Non-Streaming in a Secondary School

A Report by DEREK CLOKE.

Derek Cloke is Senior Master, charged particularly with curricula development, at Crownhill School, Plymouth.

A headmaster, recently lecturing on the subject of the unstreamed secondary school, bewailed the lack of reported experience of this type of organisation. Having been involved in the creation of an unstreamed school from one in which the streaming was quite rigid I am persuaded to describe the motives and experiences which have been cause and effect of the process in this school.

At the moment we have a three form entry from a population which has had 30% of the children allocated to selective schools. From these we eventually have a fifth form of twenty-five to thirty children who have sat for the G.C.E. and for the C.S.E. and gained as many as five good 'O' levels. In 1955 the decision to prepare our 'A' stream children for the G.C.E. was applied from the third year down, at a time of 'bulge' when the 3A represented the cream of five third-form classes. The barrier between the 'A' and 'B' class became increasingly rigid. Whereas the policy had been to promote the top three 'B' children each year this now met with difficulties and resistance from some teachers who found that the 'B' syllabus had left these children with much ground to cover. They also suffered from the fact that they had been given basic homework once a week in English and Arithmetic, whereas the 'A' classes had a full homework timetable.

A sense of purpose

We felt that the introduction of the G.C.E. on their horizon had given the 'A' stream a new sense of purpose, and sought to do likewise for the remainder, so, failing to find any support for an area leaving examination, we instituted our own leaving examination in English, Mathematics, Science and Social Studies. We also tried to give a sense of vocational purpose by re-creating the fourth form classes on the basis of the job choices the children made late in the third year as part of

the careers programme. These steps gave us grounds for thought when, later, we found that the orders of merit in these reconstituted classes, and the results of the leaving examination, revealed that the 'A' grade children did not necessarily gain the top places or monopolise the 'A' grade of leaving-certificates, and that many 'B' grade children were capable of a great deal more than we expected of them. Our records show that pupils placed as low as 44th on entry, by means of a battery of standardised tests devised in conjunction with the L.E.A. Educational Psychologist, now gained 'A' certificates. We wondered if we had done them justice.

In 1961 we allowed anybody who was willing to pay the fee to sit for the examinations of the College of Preceptors. Forty-seven children in four of the five streams gained 170 passes, a pass rate of 65% of the entries. Of these children five and four were from the C and D streams, took 32 subjects and passed in twenty-two.

The vocationally based re-streaming, the leaving examination and the College of Preceptors' examination seemed to give many children a new ambition. Certainly they had as much perseverance as those we had previously looked upon as our fifth form material. The third form which had set out as our first G.C.E. class drifted away to leave us with a fifth form of four, and these were not the best pupils. The same thing happened in successive years, but the fifth form increased in size because we had a few pupils from among those we had categorised as 'B', or even 'C', who proved to us that we would have to change our aim. We became persuaded that instead of concentrating on the 'A' stream we would have to prepare a wider band for a fifth year, so that we would by then have prepared all those who had the staying power.

While our thoughts were moving towards a modification of streaming we found other trends which were in step with our thinking. It was becoming widely accepted that environment played a great part in determining intelligence, so that we should see that all children were exposed to the best education we could offer. The special arrangements for the educationally sub-normal and backward seemed relatively sound, but perhaps more could be done with children around the average. Personality was being stressed as a powerful factor, and it appeared to us that personality factors explained the populating of our fifth form far more readily than did intelligence. Achievement motivation, too, fitted in with our reformed designs, for we would be teaching more children to aim higher in terms of educational qualifications. Then came the Beloe report and the C.S.E. was set up to provide an

examination for the broader band of ability which we were concerned to develop.

As a result of this reasoning we decided not to stream the 1964 entry, and to ignore the streaming of the children already in the school. Except for the vocational fourth year classes which were named for their bias, classes were renamed by year and form teacher's initial. The backward class continued on its special syllabus, and new syllabuses were designed for the remainder. The new intake was examined as usual, a small remedial class was extracted, and the remainder was divided alphabetically.

The result of this loosening of the bounds imposed on children by streaming seems to justify the adventure. In 1965 and 1966 a total of 35 children took the G.C.E. or C.S.E. Of these seventeen had entered the school in the 'B' stream or below, that is, as a result of our testing on admission they were placed between thirty-fifth and eighty-ninth in order of merit. Between them these seventeen have gained forty-six subject passes, at grade 2 or less in the C.S.E., and eleven G.C.E. passes or C.S.E. grade 1's. A girl who was eighty-ninth on admission tried two G.C.E. entries and passed one, two girls who were fifty-seventh each gained a G.C.E. equivalent, one of them with three C.S.E.'s. It should be stressed that the results obtained by the children who did well in our battery of admission tests never gave any reason for doubting that they served their purpose in grading the children. It was the use of these results for rigid streaming which was wrong.

Old attitudes

There have, of course, been difficulties. The staff have sometimes found it hard not to use the old terminology of streaming, and the vocabulary of 'ups' and 'downs', promotions and demotions. Administratively it seems clumsy sometimes to use the nomenclature we have chosen but we have not found an easier way as yet. Through the use of the teacher's name the class and staff are closely identified, and there have been problems with what were the 'A' teachers. The children also tended to use the terms 'up' and 'down' when we made numerical adjustments, and so we repeatedly explained the system to them. Incidentally it is much easier to keep the balance of the sexes in the classes. The backward children are still selected and 'streamed'. There are perhaps a dozen sub-normal children in the school, and these form the nucleus of a backward class in each year except the fourth. These classes are kept as small as possible and

Monitoring The CSE

B. F. HOBBY

In the last issue of FORUM (Vol. 9, No. 1, Autumn, 1966) references were made to the hostile attitude of the N.U.T. towards the Schools Council's decision to use Aptitude Tests for monitoring the results of C.S.E. examinations. Professor Kerr, for example, wrote, "the use of a national attainment scale to monitor the relative standards of schools created some controversy between the National Union of Teachers' representatives and the rest of the Council". There is little evidence as to the reaction of other teachers or other teacher organisations, but there can be no doubt that the opposition of the N.U.T. to this method of monitoring is strong and growing. FORUM undertook to have a closer look at the background of the dispute.

continued overleaf

rarely exceed twenty in number. In the fourth year they blend into the vocational streams, which are set for some subjects. The fifth form work entirely in sets.

The structure of the school aims at motivating children, especially in their senior years. A programme of careers lessons and decisions tries to make the children active participants in their own education by relating their vocational and educational designs. This programme culminates in an individual 'work-experience' visit. We also undertake many adventure activities—canoeing, camping, expeditions—and maintain our own adventure base on Drake's Island.

In September 1966 the last of the once-streamed children passed into the fourth year and were redistributed. Experience in the previous year showed that children who had followed a 'slower' syllabus often wanted to work for the C.S.E., but had not been prepared for this in their first three years. This problem would presumably increase with the raising of the leaving age. To avoid this difficulty and to confirm that we believed that experience had shown our earlier measures to be correct, we have accepted our new entry as three unstreamed classes, equal in number and roughly in ability. In exceptional cases children will be withdrawn from these classes for some subjects in a measure of setting. Thus the school is unstreamed, except for the remaining two backward classes.

This background, I believe, is complicated, and the stand taken on monitoring only one sign of smouldering discontent with the Schools Council. There is now within the N.U.T. an articulate body of New Men, motivated by a resolve to enhance the role of the teacher in educational affairs, who have risen to positions of influence in the Union. Many of them have become devoted servants of the new C.S.E. Boards of which they are justly proud and for which they seek greater power at the centre. They are dissatisfied with the present structure of the Schools Council, related as it is in their minds to the defunct S.S.E.C. and the suspect Curriculum Study Group, neither of which contained members directly representative of any teacher organisation. A glance at the membership of the Joint G.C.E./C.S.E. Committee of the Council that produced the *Examining at 16+* pamphlet will reveal that their complaint is well-founded. They accuse the Council of failure in communication, even of secrecy, in introducing a monitoring scheme in 1965, and to some degree this Aptitude Testing controversy has been a peg to hang resentment on, resentment at what they consider to be an implication that teacher controlled Boards are not fully capable of handling the C.S.E. situation.

The 11 plus phantom

Few N.U.T. spokesmen would deny that co-ordination of the awards of the fourteen C.S.E. Boards is essential, but their approach to the problem is very different from that adopted by the Council in 1965. When it was learnt that the question of monitoring procedures had been referred to the Manchester School of Education, whose head is Professor Wiseman, to the National Foundation for Educational Research, and to Professor Wrigley's department at the University of Southampton, there was widespread concern; for rightly or wrongly, these institutions are closely associated in the minds of many teachers with the promotion of Intelligence Testing, a business that has been under an educational cloud for some time now. The Aptitude Test, as briefly illustrated in Working Paper No. 6, is obviously an elder cousin of the Verbal Reasoning Tests we all know so well, and although it will be readily admitted that the context of monitoring is quite distinct from that of selection at 11 plus, it is now clear that the Council's decision on Aptitude Testing was a gross tactical error that could have been avoided if there had been closer liaison with the Boards.

Representatives of teacher organisations are

strongly ensconced on C.S.E. Boards, especially on their Examinations Committees, and it was in these committees that criticisms of the proposed method of monitoring were first voiced. Primarily it was limited to only a few Boards, but by October, 1966, when N.U.T. representatives met to discuss this and other C.S.E. problems, it was obvious that Union feeling had crystallised and was now almost unanimously opposed to the use of Aptitude Tests. There was in the air this suspicion that the competence of Boards was in question and that their authority was being diminished. But not only that. All the time Boards are mindful of the notorious insularity of the G.C.E. Boards which for fifteen years have enjoyed complete immunity from control of their standards in spite of repeated illustrations of their discrepancies, and compare the supine attitude of Curzon Street towards this state of affairs with the indecent haste to remind C.S.E. Boards of their national character and obligations. I have already expressed the view in *FORUM* (Vol. 7, No. 3, Summer, 1965) that it would be irresponsibly premature to impose national standards based on results in the early, tentative years of the C.S.E. examinations. "It is indeed difficult to understand why it has been deemed so urgent that standards should be nationally controlled in these early years when so much experimentation will be taking place and so many modifications made from year to year. 1970 would have been time enough for the Schools Council to call for a review and to suggest agreed standards. By then the G.C.E. Boards too may have been persuaded to toe a national line." (p.99.)

Abolition of G.C.E. ?

The G.C.E. issue just raised has been brought into sharper focus by the publication of the Council's pamphlet, *Examining at 16+*, with its suggestion that a common system of describing both C.S.E. and G.C.E. grades should be sought. It is too soon yet to assess reaction to this new proposal but I suspect that it will be unfavourable for here is another peg to hang resentment on, this time not against the Council but against the G.C.E. which has many enemies. Calls will be made for its abolition or for its conversion into a teacher controlled institution consonant with the C.S.E. Or G.C.E. Boards will be told to get together and to put their own houses in order. They have accumulated statistics over fifteen years that will prove palatable fodder for the computers and supply ample evidence to the Council for retrospective 'goodness of fit' procedures. It is their successful candidates

more than any others who need to be nationally graded for they are the mobile ones who wander far afield to Universities, Colleges of Education, Further Education, to the Civil Service, at home and abroad. The typical C.S.E. candidate, on the other hand (although this argument is now losing some of its validity) is more closely wedded to his environment and needs national ratings far less, even if they were feasible. And here we come face to face with the pertinent question as to whether it is possible to correlate with anything but rough justice results from fourteen regions that are so diverse in social structure, in occupational bias, in attitudes towards education, in teacher supply and in the incidence of immigration, remembering that we are examining pupils of a lower level of ability than that expected from candidates for G.C.E. examinations.

This, however, is a comparatively superficial matter and we need to look much more closely at the developing C.S.E. picture if we are to estimate the feasibility of expressing inter-Board comparability by delicate statistical procedures. The most novel feature of the C.S.E. examinations is the Mode III arrangement, which is in fact a school test more or less thoroughly adjudicated by the Board. In some areas this Mode was little used in 1965 and 1966; in others it was the most popular. There can be little doubt that the use of this Mode will rapidly become widespread, and one of the difficulties facing the Boards will be that of standardising, within their own province, the multifarious papers that will be presented for moderation. Diversity will be bewildering, and diversity will be applauded, for this type of examination is widely believed to be the ideal teacher controlled medium.

It is the incidence of variables of this kind, both local and national, that makes it difficult to understand why it should have been thought fit to apply Aptitude Testing to the C.S.E. field where the proliferation of diversity seems to make a nonsense of coefficients of correlation calculated to the nearest decimal place. If we go further and assume that the policy of *Examining at 16+* is adopted we shall bring into this already turbulent pool G.C.E. results that by tradition depend on memory and the ability to reproduce learnt facts; most C.S.E. papers studiously avoid this approach, especially in those many subjects other than the six used by the Council in the monitoring process based on the 1965 results. Add to all this the possibility of a G.C.E. Mode III examination and at some stage we shall appear to be monitoring for the sake of monitoring!

These arguments could be built up into a case

for C.S.E. insularity, but this is the last thing the Boards want for they are not chauvinist in this business. "In the early days the founders of the Boards were so preoccupied with tactical problems that they had little time or thought to spare for the consideration of strategic moves. It was generally assumed, I believe, that when Boards had gone some way towards setting their own house in order they would find time and seek opportunities to consult their opposite numbers from other areas, and in due course, to approach a national standard through liaison and pooling of ideas and information." (*ibid.*) This is exactly what has happened. There is already in being a Standing Joint Conference of the Boards with an evolving constitution one of whose principles is that on each Board's delegation there should be a majority of teachers. So the Boards, fully conscious of the demands of the situation and of their own obligations, are beginning to formulate an empirical approach to the monitoring problem, based on the 'goodness of fit' techniques, which can, however, be implemented only after all C.S.E. examinations have been in operation for, say, four years. This takes us to 1970 and the raising of the school leaving age which will bring in its train a vast increase in the number of C.S.E. candidates. It must be made clear that in spite of the opposition of the N.U.T. members to Aptitude Testing they are not obscurantist or obstructionist and envisage a constructive approach to monitoring problems.

For the future, both Council and Boards are committed to the development of procedures designed to monitor results of national attainment examinations. The Council is not committed to the use of any particular method and proposes to discuss the whole question with the Boards at a special conference to be convened as soon as possible. Had this démarche been made much sooner the present discontent might well have been averted. When the time comes the N.U.T. element in the conference will undoubtedly press for the discontinuation of Aptitude Testing in favour of 'goodness of fit' techniques. It remains the Council's policy to work towards a procedure in which 'goodness of fit' can be used in conjunction with an occasional use of other procedures. With goodwill on both sides there seems no reason at all why compromise should not be quickly reached. Much ado has been made of monitoring by the Council but this is a very small matter compared with the task that will face the Boards in the decade ahead. They ought not again to be given the slightest grounds for suspecting that while they are concentrating on their massive primary task someone may come up from behind brandishing a *fait accompli*.

Discussion

The Schools Council

Both Professor J. F. Kerr in his article 'Introducing the Schools Council' and Stuart Maclure in his 'Searchlight on the Schools Council' (FORUM, Autumn 1966), seem to neglect the role of the primary schools in contributing to new thinking on school curricula, school development, community and neighbourhood ideas, and so on. It might be useful to remind readers of the actual terms of reference of the Schools Council as stated in Appendix C of *Change and Response: the first year's work, October 1964-September 1965* (H.M.S.O., 1965).

'The objects of the Schools Council for the Curriculum and Examinations are to uphold and interpret the principle that each school should have the fullest possible measure of responsibility for its own work, with its own curriculum and teaching methods based on the needs of its own pupils and evolved by its own staff and to seek, through co-operative study of common problems, to assist all who have individual or joint responsibilities for, or in connection with, the schools' curricula and examinations to co-ordinate their actions in harmony with this principle.

'In order to promote these objects, the Council will keep under review curricula, teaching methods and examinations in primary and secondary schools, including aspects of school organisation so far as they affect the curriculum, and will draw attention to difficulties in these fields which appear to merit consideration by other appropriate authorities.'

It appears that we have to educate for 'co-operative study of common problems' and not merely to state it as a principle. The Schools Council, although arising from the earlier developments of the work of Secondary School Examinations Council, took over, too, the work of the Curriculum Study group of the Department of Education and Science. The real interests of the Schools Council, as often stated by its former secretary, D. H. Morrell, lie in the attempt to deal overall with curriculum development in our schools. 'The basic questions which the Council exists to try to answer are what to teach, how to teach, and how to examine.' (From *The Schools Council* by D. H. Morrell, N.U.T. Annual Conference, Eastbourne 1966, Grammar Schools Meeting.)

Many educators would feel that the implications of this for primary education go far beyond existing Nuffield projects in mathematics, science and French. Careful consideration will have to be given to the size and location of primary schools. Comprehensive reorganisation will obviously affect the community value of schools and there may be more opportunities for breaking down educational barriers between the varying sectors of educational provision. We continually stress in this journal that we see education as a continuous co-operative process in which all the phases of development are important. Secondary education cannot be

discussed realistically in isolation from the rest. In fact, it is most essential that curriculum building is seen to be a genuine co-operative effort involving research and discussion at all levels. Evaluation, too, must be part of the effort with less emphasis on outmoded ways of examining. The value of curriculum changes must be seen against the long-term development of our whole educational structure.

ERIC LINFIELD.

Pupils' Views of a "Newsom" Experiment

We, a secondary modern boys' school, recently joined forces with our 'sister' school in a Newsom-type experiment. Thirty-four of our fourth-year non-examinees and fifteen girls of similar type from our 'sister' school attended the local technical college every Friday for two terms. On these days, all the pupils were treated as, and to all intents and purposes were, technical college students.

The pupils, originally split into mixed groups but later put into all-boy and all-girl groups, were given information about a variety of occupations and were allowed to do practical work connected with some of them. Fifteen occupations were dealt with, including plumbing, painting and decorating, welding, and telecommunications. Visits were made to outside sites in connection with these studies and each student kept notes of what he did. Back at school these notes were used as the basis of a written record of the pupils' experiences.

At the end of this experiment, our boys—the 'consumers' or 'customers' so to speak—were asked to tell us what they honestly thought of the course. After all, the course was run for their benefit and their opinions were valued.

Typical remarks were: 'The two terms at the college have been good most of the time'; 'I think the Technical College course is a change from normal school lessons'; 'I think that it is a good idea because it showed us all the different jobs you can get when you leave school'; 'On Friday we have a day at the Technical College which is better than school work'.

Some of the boys stated that going on this course helped them in their choice of career. 'Before the course started I was thinking of becoming a bricklayer. So when we were in the Building Department and did bricklaying, that made my mind up and I am now becoming a bricklaying apprentice.'

On some occasions the pupils were doing practical work in the College departments during the mornings and seeing films and having discussions during the afternoons. Most of the boys did not like the afternoon arrangements and had plenty to say about them. Later in the course, however, the films were cut out and the time saved was spent on practical work—to the delight of the lads.

'During the first term we used to have films every afternoon, which was boring and often of no interest to us so they cut some of the films out and we spent all

Design for a Flexible High School

DENNIS SMITH

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Next year work will start on the first of a new wave of buildings for Leicestershire High Schools which are planned to allow for the profound changes now envisaged in secondary or 'middle' schooling. In short, the design invokes the future.

High schools cater for the age range 11 to 14, when all fourth year pupils transfer to the upper school, so they are, in fact, middle schools providing a bridge between primary and senior secondary schooling. The one to be described will take an 8

DISCUSSION (continued)

day in the workshops, which was much better.' 'The thing that bores most boys are the films that are shown. I myself would rather do practical work.'

Although members of the College staff felt that, owing to lack of training and experience with fourteen- to fifteen-year-olds, their relationships with and handling of the boys had not been what they would have hoped for, *all* the boys spoke highly of them and of the help they had received from the lecturers.

Naturally enough, each boy had his own special and, for him, most enjoyable recollection of the course when it had finished. One wrote, 'We have done many things dealing with cars. In one department we were allowed to take off the wheels, take the balances off the wheels and fit the wheels on a wheel balancing machine and put the wheel right again.' Another thought that, 'The most interesting thing that we did was welding, which consisted of arc welding and gas welding.'

Every boy thought that the course ought to be repeated each year. It took place during the autumn and spring terms but one boy thought it should have taken place earlier in their school careers: 'This course comes at a time when we have already chosen our jobs and made up our minds. I think the course would have been of more value is started in the last term of the third year.' He, of course, was an Easter leaver.

The 'customers', then, were well satisfied with the scheme. In spite of minor complaints, they believed they had profited by the course, that it was a worthwhile experience and that it should continue for the benefit of their successors in the school. In spite of the well-known saying to the contrary, customers are *not* always right; on this occasion we believe they were.

R. G. H. ANDREWS, *Leigh-on-Sea, Essex.*

form entry, or 720 boys and girls, and two such schools will feed a single upper school.

The blueprint for a high school must incorporate a special blend of 'opposites', since the school aims to draw on the best practice at both the primary and secondary stage between which, at present, there are wide differences. It must also take account of practical pressures and endeavour to secure the maximum teaching area for the sums allocated. The rationing of school building by government is draconian and works as follows: A maximum permitted sum is allocated to build the school, related to the number and age of the pupils that will be there when the school opens. The Department of Education and Science also lays down a minimum teaching area to be provided. The difference between what must be built and what can be built for the money is, in practice, virtually zero. We cannot waste a square foot.

To get the most space, we might wall and roof a large circular area. Short of this extreme, but not unthinkable, policy it will certainly make sense to build large compact squares or rectangles, many rooms deep and lit from above. What we cannot afford is to repeat that hallowed blueprint for the secondary school—a ribbon development of classroom boxes along a six foot corridor; in this case, for every 3,000 square feet of teaching area we may lose 750—or 25 per cent of space—in unproductive corridor. Our plan for a high school shows that space can be put to better use.

The assumptions on which the design is based take account of the many current discussions on reorientation of the curriculum and teaching methods. The Newsom Report found that "it would be educationally wrong, and an unwise use of resources, to build . . . schools to meet yesterday's needs". Buildings, which may have to do duty for some forty years or more, should be planned for developments that are going to take place. Briefly summarised, the principal assumptions behind the designs are these.

1. The staff will combine in teams of up to eight adults, sharing their knowledge and skills and collectively responsible for the pastoral care and individual work programmes of a whole year group.

2. In particular, two such teams will cater for the first two years, much (but not all) of whose time will be spent in the form base areas with adjoining practical space and reference facilities.

3. A third teacher team will staff a design area with art, pottery, housecraft and workshop facilities.

4. For part of their time pupils will work individually on both practical and reference studies,

but with helpers and experts available; and for part of their time in groups of varying size, from, say, 12 to 120.

5. The day will not be divided into 40 minute particles and they will be able to carry through a particular job of work, or pursue a particular interest with reasonable continuity. It will often be hard to draw firm demarcation lines either between subjects or between the practical and the academic.

6. The teacher teams will be free to arrange their own timetable to a very large extent since they and their pupils will have undisputed rights over the form base areas allotted them; again in the 'design area' the same freedom for the teaching team will obtain. The third year will have only five form rooms allocated to them but will enjoy the privilege of a prior claim upon generous practical and science facilities.

The plan of the school

Looking at the plan of the school, we may misjudge its size and scale. From east to west it measures about 370 feet; from north to south some 240 feet. Total area is about 52,500 square feet. The western half comprises a large area of some 27,500 square feet, overlapping slightly at its north eastern corner a smaller rectangle of about 16,000 square feet.

The 'large square' consists in its southern half of two large areas each containing eight form bases of about 560 square feet grouped around a large 'activity space' of 2,000 square feet. These two areas are devoted to the first and second years, and they also contain pupil cloakrooms and a small teacher team planning room.

To the north, and adjoining the two form base areas, is a very large library-cum-resource centre of 2,500 square feet which offers private study and reference facilities and a bank of resources—tapes, programmes, slides, films, strips, loops, etc., as well as bookstacks. It will be under the constant care of a librarian.

To the north-west, the library—hub of the whole area—adjoins the five third year bases. These are more conventionally furnished rooms, including one larger 'social studies' base, though generous circulation areas outside these rooms offer facilities for some individual work, including eight booths wired for audio.

To the north-east of the library is a lecture room—an audiovision room, in fact, at the disposal of team teachers and scientists, and a large science area of 2,020 square feet with very generous preparation space and two small withdrawal-lecture spaces, each seating 30.

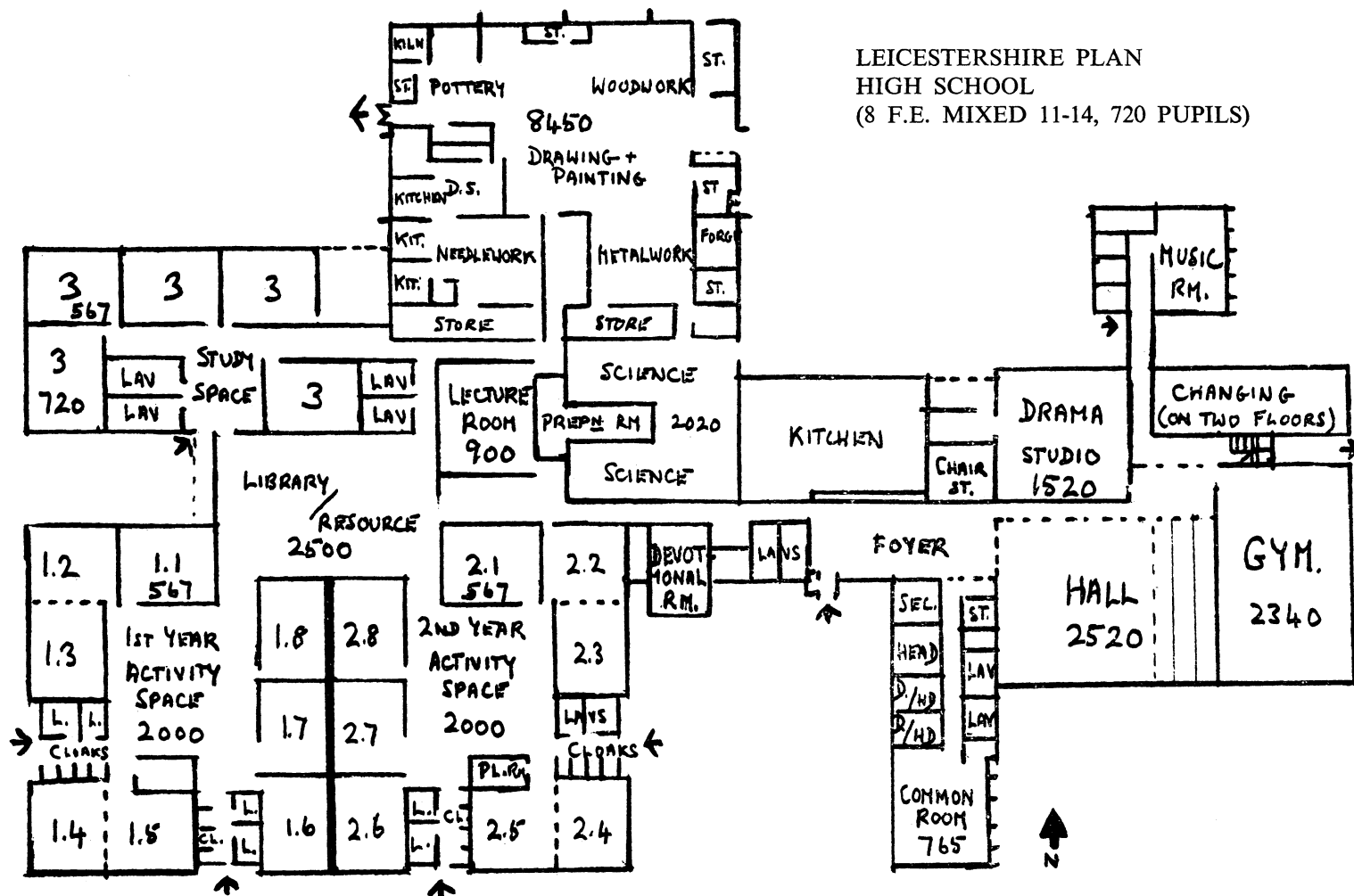
The rest of the 16,000 square feet rectangle comprises the 'design area' which includes—in one overall (yet divided and differentiated) space of 8,450 square feet—facilities for needlework, housecraft and two dimensional or three dimensional art and craft, including work in wood, metal, ceramic, 'silversmithing' and other media. A considerable number of pupils could be accommodated here for a morning or afternoon, and there would be a large measure of free choice of activity or media by the pupils themselves. Some freedom to come and go, according to the duration of the job undertaken, would no doubt develop. Potentially freedom of choice and mobility for pupils would be very high here.

The Leicestershire Devotional Room, sited south of science, is still a feature of the high school; it has been sufficiently discussed elsewhere. To the east a block contains gymnasium, assembly hall, a music room with associated practice rooms, and, in addition—for the first time—a drama studio. This will have an associated store and gallery, and a gantry for lighting, and will offer scope for drama, movement and dance appropriate to this stage of development, with full lighting and audio range.

The plan does not illustrate the detailed layout of the first and second year areas. There is considerable differentiation inside each area, though the style of furniture retains the flexibility throughout. For instance, in the second year area rooms 2.2 and 2.3 make up a flexibly linked science area, with full services (gas, water, mains around walls) and a direct doorway link with the main science area adjoining. Rooms 2.5 and 2.4, separated at need by a mobile partition, compose a social studies unit with tables, benches, water, mains and appropriate storage. The remaining bases serve mathematics, English and foreign languages. Of these, three are 'quiet' and operate if need be behind closed doors; one is partly open on to the central activity space, which itself is equipped with sinks, services, storage and benches for practical or art work spilling over out of work done in the bases. For a large lecture the entire year group could be marshalled in the central space, while 120 or so could fit into the 'social studies' area for a film. In the central activity space will be a few wood and metal benches and a small drilling machine, as also tables, easels, sinks, damp cupboard and claybins, etc.

Unity of furnishing is achieved by the use of two tables, one 3'6" × 5', the other 2' × 5', throughout the entire first and second year areas. These serve both for practical work and for study or writing. Mobile storage units—virtually low boxes on castors containing firm plastic trays, three inches deep,

LEICESTERSHIRE PLAN
HIGH SCHOOL
(8 F.E. MIXED 11-14, 720 PUPILS)



designed in various sizes and combinations—are supplied for stowage under the tables or as additional work surfaces. The slimmer of the two tables is designed to serve as either writing table-cum-desk or wall bench. Services are generously disposed around the perimeters of all rooms, not just the science areas. These, fitted at 3' height, are almost the only fixtures. The school will be free to dispose the furniture as it chooses, to conduct an education along the freest and most imaginative lines or very formally. Flexibility is the rule.

Such a building will necessarily strongly influence what takes place within it. But it is the planners' earnest belief that it will not dictate methods or classroom procedures, rather it will permit, and sometimes stimulate, the growth and development both of the pupils as persons and of the whole school community. Such evidence as we have been able to collect from teachers, who in this county are already attempting the sort of education this school is planned to foster, supports this view.

New Methods of Assessment

J. F. EGGLESTON

Mr. Eggleston was until recently head of the science department at Hinckley Grammar school, Leicestershire. In 1964 he was appointed Research Fellow at the University of Leicester School of Education, working in the Research Unit for Assessment and Curriculum studies. He is now Lecturer in Education at the University of Leicester, but is still deeply involved in the work of the research unit and committed to research into methods of assessment.

There are many indications of a growing concern among educators that the methods used to measure pupils' attainments are inadequate. It is significant that the authors of the three 'O' level Nuffield Science Teaching Projects saw fit to expend resources to consider the problems of producing examinations which would be, in their judgment, fitting measures of attainment within the context of the courses they devised.

The central theme of these new science courses is—learning by enquiry. To be examined by conventional methods would place candidates who have followed such courses at no advantage—probably at a disadvantage—against pupils whose 'science' had been acquired largely by the authority of the spoken and written word. If the business of learning science is concerned with not only *knowing* but *doing*, then the examiner must be interested in acquiring means of measuring not only what candidates know, but how well they can do. But do what? Conventional examinations demand not only knowledge but also the ability to communicate. No one seriously considers that knowledge, literacy and numeracy are not important attainments of science pupils, but an increasingly large number of teachers at all levels are engaged in the search for assessment procedures which take account of a more compre-

hensive array of abilities relevant to the active study of their disciplines.

Although the Nuffield Science Teaching Project has been used as an example it must not be thought that this effort represents all, or even a major part of the current interest in new methods of assessment. Many University Examination Boards are actively co-operating with the Nuffield Science Teaching Project. One board has initiated a major enquiry into objective tests in chemistry at 'O' level, another in its recent thinking on 'A' level Physical Science is considering the 'abilities' dimension of a table of specifications within which questions will be set, and many have shown signs of accelerating the changes in the nature and methods of implementation of assessment procedures which have been in evidence in recent years.

The introduction of the C.S.E. with its massive confrontation of teachers with problems of assessment has produced a climate for reform.

To construct an ideal examination system to assess attainment it would be necessary to define as precisely as possible for each subject, the objectives towards which we strive, within the curricula we construct. If the premise, that the effect of educative processes is to change behaviour, is accepted, then it follows that measures of the success of any pres-

cribed teaching method must depend on the quantification of observed behaviours. In school we attempt to develop, to change or to reinforce patterns of cognitive and affective behaviour of our pupils. The advertiser of deodorant sets out to educate—after his fashion. He motivates his 'pupils' by suggesting that they may be at a social or sexual disadvantage if they smell. His lesson is simply communicated. Finally, he can measure the behavioural changes he has brought about in terms of bottles or buckets of his products sold. In this last particular he is to be envied. His objective was measurable in precise terms and the measures obtained could readily reflect changes in his 'teaching method'.

One important issue which now faces all attempts to reform assessment procedures is the need to describe curriculum objectives in precise terms which offer the prospect of measurement, and to do this in relation to subject; the level to which the subject is taught; and to whom the subject is being taught. Only when this is done should the selection of test procedures and all the mechanics of assessment technology be brought to bear on the problem. The description of curriculum objectives in terms of precise behavioural changes is no easy matter.

The weft and warp of cognitive and affective behaviour are so intimately interwoven in the fabric of the total effect of our teaching that it is difficult to identify and isolate them. The empirical growth of the present examination system has been such that the problem of isolating and measuring attainments has not been considered relevant to the purpose of examining. However, as one of the purposes is to acquire information about a pupil's attainment on the basis of which we make judgments about his present attainment or his future performance, a case can be made for refining assessment procedures to a point at which judgments are based on a profile of attainments rather than a global observation. It is difficult to decide in present 'O' level and 'A' level examinations which of the complex of variables determine that a candidate achieves 65 per cent in, say, chemistry. We may never know all the facts of a candidate's history which determine the level at which he is motivated but it may be possible to refine the procedures by which his attainment is assessed, by making more specific demands on his abilities which relate to his performance in this subject.

The description of teaching objectives with reference to any subject has been made possible by the work of Professor B. S. Bloom and his associates. They have constructed a classification of educational objectives. Each objective is described in behavioural terms, specifically, under generic headings. The descriptions apply to observed operations, not to hypo-

thetical mental constructs. They are the recurrent bits of behaviour observed in those engaged in a discipline—ordered and classified to make communication about curriculum objectives possible. To quote two examples, in the genus 'knowledge of ways of dealing with specifics (terminology and facts)', the following specifics are listed: knowledge of conventions, of trends and sequences, of classifications, of criteria and methodology, the genus 'comprehension' includes: translation, interpretation, and extrapolation.

Personal experience with groups of teachers of general science, physics, biology, handicraft and history, testifies to the usefulness of this taxonomy in clarifying issues in the study of curriculum objectives. There seems to be a pattern—a natural order of thoughts and attitudes of teachers engaged in the process of describing objectives. At first, objectives are described in generalised terms, a conglomerate of affect, cognition, hopes and aspirations offering little prospect of providing evidence, in the short term, on which judgments of effectiveness might be made.

The second phase in which there is a movement towards precision and analysis is difficult because of semantic problems; also the gap between our total hoped-for effect on the developing mind, and that part of it which can be defined and possibly measured, widens. The scientists whose activities have traditionally been described in behavioural terms, as a method of operation, seem to find the path easier than the 'arts' teachers who conceive their objectives in more generalised humanistic terms.

The third phase consists of the design and selection of assessment procedures which meet the specifications which have been isolated by the analysis. The assessment procedures which comprehensively sample the knowledge of facts learnt, and the behaviours acquired relevant to the prescribed curriculum objectives, are potentially valid as measures of pupil attainment. If such measures were available it would be possible to compare pupils or to compare the effectiveness of two different courses with similar objectives.

The Selection of Appropriate Assessment Procedures

Assessments are both quantitative and qualitative judgments, the qualitative aspect relates to the validity of the procedure—does the instrument measure what we want to measure? The quantitative aspect involves the establishment of a reliable system of measurement—how accurately and consistently does the procedure measure? In order to judge the

effectiveness of different assessment procedures it is useful to try to describe the properties of an ideal procedure. These may be briefly stated thus: it must be reliable, it must be valid, it must be free from undesirable back-wash effects. Reliability means that no matter which marker marks the candidate's paper or how many times he marks it, the score awarded should, within specified limits, be the same. Reliability also means that there should be close agreement between a candidate's score on any one batch of test items designed to measure a given ability and the same candidate's score (relative to other candidates) on a similar batch of items designed to measure the same ability.

A further problem concerned with reliability is that of taking account of variations in a candidate's performance. Any one measure of performance can only be a sample from a possible range of performances about some unknown average. An ideal assessment procedure should be able to take account of this variation. The validity of an assessment procedure designed to measure attainment is achieved when the abilities used to give the correct responses to test items or to perform some other task on which performances are assessed, are the same abilities as those embodied in the behavioural description of the curriculum objectives agreed by the teachers whose candidate's attainments are being compared. Ideally, these would be identical. They would be comprehensively and exclusively assessed.

The effect of examinations on teaching methods, described as back-wash effects, can only be undesirable when the procedure is invalid, either because the abilities required are not comprehensively tested or because they are not exclusively tested, for example when special examination skills once acquired result in improvements of score.

Assessment procedures in current use or possible new procedures may be judged on these criteria. There are obvious dangers in generalising about procedures. The absence of an accepted terminology to describe procedures allows failures in communication. The particular circumstances in which a procedure is applied for a specific purpose might determine that no other instrument could be used. With these reservations in mind it is possible to examine three broad classes of procedures in order to assess the possible uses and deficiencies.

Conventional examinations

Examinations, conventional by G.C.E. 'O' and 'A' level standards, are, for most candidates of most subjects, typically applied only once; they consist of a relatively few items (questions) from which a choice may be made; the marking of scripts requires subjective decisions by markers. The reliability of

such examinations by any measure of reliability tend to be lower than for 'objective' tests. Their validity is difficult to evaluate because statements about what they are designed to assess are not specific. Their back-wash effect has in the past been the subject of complaint by teachers—and may therefore be held to be, for some subjects, undesirable. The knowledge of facts learnt and the abilities developed cannot be comprehensively measured by such procedures.

Objective tests

These tests, more appropriately thought of as objectively *marked* tests, involve subjective decisions at the time the questions are devised but no such decision by markers.

Marker reliability is therefore high. Test items can be devised so as to make very specific demands on candidates, and the coverage of the table of specifications—i.e. the proposition that the test demands all the abilities relevant to the objectives—can be examined. However, it is generally acknowledged that objective tests demanding 'higher' abilities are difficult to write. Comprehensive coverage of the factual content of the curriculum is theoretically possible by the larger number of items included in such tests. However, the limitations of such tests in providing a comprehensive array of items to measure all the relevant 'abilities' must be recognised. It is certainly true that given sufficient ingenuity many 'higher' intellectual abilities can be tested in this way—some cannot. The ability to produce an original written communication in either prose or equations cannot be so tested. It has been said that the lack of attainment in these skills has been a back-wash effect of multiple choice objective tests in some schools in America.

Teachers' assessments

Of the three classes of assessment procedure discussed here, continuous assessment by teachers is least implemented and least well known. There is a growing interest in this mode of assessment. In America, Bloom and Peters inquired extensively into teacher awarded grades as predictors of subsequent success at university, and found that under the circumstances in which they operated, teacher estimates compared favourably with the best predictors available.

Continuous assessment procedures are used in Sweden at 'primary' school level. In this country some University Departments, some Colleges of Education and some schools which submit candidates for the C.S.E. are utilising in varying degrees forms of continuous assessment.

The Research Unit for Assessment and Curriculum Studies, given the task of investigating methods

of assessment other than by written examinations, is in the process of examining possible methods of continuous assessment by teachers. Whilst space does not allow a full description of the problems associated with this research, it might be of interest to outline some of them and one technique under scrutiny which seems promising.

The first problem involves the decision what to assess. This necessitates the translation of curriculum objectives into assessable behaviours, and the description of these in terms which can be clearly communicated to the teachers involved.

The second problem is that of achieving agreement between teachers on the circumstances in which assessments are made and the kind of evidence on which a quantitative judgment will be made. Thirdly, problems of comparability of standards between teachers must be solved.

An example of a method of teacher assessment may be taken from a trial scheme at present in operation. Teachers of physics preparing candidates for the E.M.R.E.B. C.S.E. examination are collaborating with the Research Unit. During the course of one year they are assessing their pupils' performance in certain agreed behaviours appropriate to learning physics. One such behaviour is the ability to make inferences from evidence. At many points in a C.S.E. physics course, evidence is available from experiments performed by pupils or demonstrated by teachers. The teacher organises some form of written 'feed-back' from his pupils which is assessed on a simple, comparative scale. Thus, by the end of the year a series of judgments will have been made about a pupil's performance in this ability, in a variety of circumstances, on a number of occasions.

Moderation, i.e. ensuring comparability of standards between teachers, will be achieved by a standardising test which will be objectively marked as far as possible. The items for this test will be

selected by the teachers involved in the trial, and classified according to their judgment of the ability required to give a correct response. It is not yet possible to pass final judgment on this procedure as the results will not be available until the end of this academic year. Pilot trials completed last year gave encouraging results.

The properties of this procedure will, finally, be compared with the ideal prescription outlined above. Theoretically, the procedure appears to have a considerable potential as a means of measuring attainment, and perhaps also as a diagnostic tool; its validity is potentially high and its back-wash effects are possibly highly desirable; the sampling of pupils' performances on so many occasions must endow the procedure with the kind of 'reliability' not possessed by other procedures. The practical difficulties of implementation and the attitude of teachers towards the method and the role they play in its functioning are not yet known. It is rightly the latter which will decide its future.

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The Curriculum of the Sixth Form

Schools Council Working Papers 4 and 5:

Science in the Sixth

Sixth Form Curricula

MARY HOOD

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"Education is a thing of the spirit. But we cannot educate our children without giving the spirit a body and the body a skeleton. The task of leaving room for the play of the spirit and experiment and of life is far the hardest and most important in front of us." (Lord Lindsay of Birker.)

The Schools Council is an excellent arena in which to consider and assess the fitness of the body and the skeleton in their tasks of promoting the education of the spirit. I am not convinced that the discussion in the two papers under review evinces, as yet, sufficient concern for "the play of the spirit and experiment and of life".

The discussion took place in the light of seven stated objectives of sixth form work, which presumably should provide the skeleton of any resulting body of curricula and examinations. The objectives seem inadequate and circular. The first objective is, in brief, "to ensure curricula that prepare for attainment of educational and vocational objectives". That many pupils stay on in the sixth in the hope of improving their employment status, is observable fact. But just what their educational objectives are, let alone those held for them, is more difficult to discover. Probably many have none. Similarly many of those who teach become so absorbed in the problems and niceties of their own subject that they cease to be concerned with the broad purposes of education. The balance of values seems heavily weighted in favour of how a person may maximise his potential as a self-supporting economic unit, rather than how he may best be equipped to live with richness and delight and understanding.

When so many people are talking about the adversities of over-specialisation, the illiteracy of science students, the ignorance of art students, the philistinism of the young, why isn't General Studies elevated from its back-stop position of time-filling soft option into a stimulating integrated course for every single sixth former? Its aim should be to provide an understanding of man's evolution, of at least some of his dilemmas, solved and unsolved, and a grasp of ideas that may better equip every student to cope with being alive: "From the very beginning of his education, the child should experience the joy of discovery. The discovery which he has to make is that general ideas give an understanding of that stream of events which pours through his life, which is his life" (A. N. Whitehead).

It seems a pity that at this stage of the discussion Working Paper 5 should concentrate on 'Possible Patterns' of curricula arrangement, instead of tackling first the problem of what such curricula should consist of. It is stated that the Council is "to commission a study of the historical growth and *contemporary relevance* of the concepts which lie behind such commonly used terms as 'specialisation', 'study in depth' and 'general education'."

The place of general studies

It seems rather fruitless to discuss advantages of the Major/Minor system, without first having decided the roles of such key factors. A survey of the use of General Studies is however to be made, since it is "one of the most interesting and significant developments in Sixth form education in recent years". It is perhaps unfortunate that its scope is to be limited to the G.C.E. 'A' level candidates only. A further disappointment in regard to the status of General Studies lies in Paragraph 11 of Paper 4 (explanatory notes) where it is suggested that the sixth former need not be examined in this subject. In a system where everything important is examined, a subject studied merely for interest would seem at a disadvantage. On the whole, General Studies emerges as something to be tacked on to whatever else the pupil is studying—a luxury rather than a necessity.

While the intellectually less able perhaps stand most in need of 'broad, well-balanced curricula', the cohesive value of general studies to the specialist should not be underestimated. The implication still seems to be that specialised studies occupy a higher rung in the education process than general studies. Ideally they should be complementary in a dynamic process of mutual interaction.

Advantages and disadvantages

However, taken at face value, the main advantage of the Major/Minor system seems to be that it would require only two subjects in depth (Majors) leaving half the time-table for other work such as 'compensating minors' or 'ancillary minors' and/or even General Studies, thus alleviating the 'over-specialised' syndrome. Conversely, a disadvantage mentioned in Paper 4 is that 'would-be' physicists (or specialists in any field) would have to follow a prescribed permutation of subjects. What Minor subjects should consist of is as yet indistinct except for the feeling that they must cater for maturer needs than those of 'O' level while not simply being shrunken Majors. It is however difficult to decide the role of Minor subjects without first having delineated the area to be covered by a General Studies course, depending on what its function in the whole is seen to be. Mr. Kelly (Paper 4, p.25) hoped that perhaps general studies could include courses of physics and biology, relating them to social problems. One can't help feeling that an extensive, integrated general course would be more rewarding to many pupils than an incoherent diversity of minor subjects.

New concepts

Paper 5 seems to assume that a modification of the present system according to the Major/Minor pattern may be all that is necessary. The discussions in Paper 4, however, on different aspects of science in the sixth form, go much further towards reorganisation based on new concepts of what are now considered suitable objectives of science courses at this stage. The conference on which this paper was based was opened by Mr. Dancy, who summed up the current changes in attitude as being from specialisation to general studies, from scholasticism to relevance, from facts to interpretation and from analysis towards synthesis. All four factors are certainly pertinent to the projected course outlined by Dr. Spice and Dr. Grassie.

The ease with which such a course would be accepted by the bulk of the teaching profession might indicate the extent of real influence of Mr. Dancy's pointers of change. One can but be impressed with a course designed to place the 'emphasis on discovery and understanding rather than on hearing and regurgitating facts'. Apprehensive science teachers should be encouraged by the importance Dr. Grassie puts on flexibility of course content and examinations.

A number of speakers at the conference pointed

out that fused courses in the past, notably the general science of the 1930's, had failed. However with conventional boundaries of science subjects changing so much from within, those who teach and learn even at the school stage, should surely be encouraged, by the nature of the courses, to grasp the significance of such changes.

Throughout the papers given on science emphasis seemed to be firstly towards the grasping of ideas rather than the accumulation of facts and secondly towards making the courses relevant to the modern world, particularly to its human aspects. In the particular context of science for the arts specialist Dr. Brierley took this point a step further when he said that he finds "that the science of man and the related sciences, psychology, anthropology, archaeology—seem more relevant than physics or chemistry". Once again it should be possible to include these in a general course for all sixth formers as they would surely be beneficial to 'scientists' as well as being the branch of science most comprehensible and interesting to the arts specialists.

All must benefit

It is important that basically the same general course should be studied by all pupils so that all may benefit from each other's specialist knowledge and interests. If less able sixth formers spent most of their time on reading round this course they should not feel themselves at marked disadvantage. If General Studies became a nationally organised feature of sixth form curricula the two biggest problems would be how to retain flexibility of content while achieving such objectives as were outlined earlier, and whether and on what basis to organise the setting and marking of examinations.

Perhaps the most fundamental change necessary is one of attitude to education on the part of teachers and taught. Dr. Brierley mentions the formidable "pupil resistance especially with pupils long trained to be receivers rather than co-operative producers". It is surely our present educational values that have conduced to this sterile state of affairs. It will be difficult to transform attitudes of resigned exam chasing and pedantic fact accumulation to lively interest, involvement and understanding, without at the same time offering curricula to stimulate such a change. If one of the pressures behind current discussion is the arrival in the sixth forms of those for whom University or College is not the sole aim, let it continue to act as a pressure for a *re-think* of objectives rather than a reshuffle of current objectives to accommodate them more comfortably.

Infant Classrooms—The Next Step

MARGARET O. WASON

Dr. Wason is at present teaching in a junior school in Stevenage; her chief interest, however, lies with younger children and her main experience has been gained with infants.

Infant teachers today are concerned to give their children an education which will fit them for life in the next century. Future citizens will need to be poised, emotionally mature, adaptable and able to think for themselves. If we accept, with Vernon, that the level of intelligence (as measured by intelligence tests) can be raised, we must provide an environment where this will be possible. In my experience such an environment can also accelerate the development of children through Piaget's stages.

Infant classrooms should be workshops where children practise techniques and make discoveries about their environment. The pre-school child has learnt by exploration and through the use of language more than he will ever do again in so short a time. The classroom should encourage him to continue this in an organised way. It should be a 'finding out' room where children feel free to explore, estimate and test. There should be opportunities to plan and to make things, problems to be solved and questions to be answered, structural material should be provided and opportunities made available for the use of language at all stages. If we agree with Piaget that the system of numbers has most of the properties which are the groundwork of logic, then finding out about mathematics is a very important part of the educational process.

Research in the U.S.A. and Britain among E.S.N. children and institution children confirms what teachers knew from experience, that emotional adjustment is also of great importance for intellectual development. In my experience children who explore scientific and other material are not only stimulated intellectually, but enjoy emotional satisfaction; and this is of great importance in developing well-balanced personalities. Five to seven year olds will explore the properties of water for hours at a time. They pass air through water, siphon and play with a U tube and a Cartesian diver. When allied to an interest in ships their discoveries may range far and their vocabulary and number experience be greatly enriched. Children in my classes sank 'treasure ships' and raised them by blowing in air.

They made 'rough seas' and swamped unstable boats. They used a knotted rope and log, a sand clock and a bell and play acted their use with a boat they had made. The words ballast, buoyancy, Plimsoll line, log book, knots (as sea miles per hour) were acquired from these experiments.

They put sticks and spoons in jars of water as an introduction to the magnifying glass. "The fish is magnified," Colin said as he peered at the goldfish first from the top and then through the side of the glass. They used torches to make shadows. They spun tops covered with red, blue and yellow paper; studied reflections on the wall and then used a prism to 'find the rainbow'. Several children noticed that a skin had formed on water with flour lying undissolved in it and that rainbow colours could be seen in the skin. Later they reported bubbles rising in this water. "Is it air?" The smell suggested something different and one boy produced the word 'gas'. Here the children were re-discovering the first classification of gases which were originally regarded as a kind of air.

If material was presented as it was originally used in a scientific discovery, no subject seemed beyond a young child's interest. When seven-year-olds wanted 'a real light' in their lighthouse they made static electricity with amber (electron) and wool; they enacted the accidental discovery of an electric current with two metals and a liquid and watched its effect on a compass. They examined a battery and found out why it was called 'dry'. They experimented with batteries, bulbs and wire and found out how to complete a circuit.

Suggestion cards were sometimes used at a later date but were deliberately kept vague. In electricity, for instance, the implied suggestion that two wires were needed to complete the circuit was ignored and children 'made it work' with one. Groups of children then went round the room testing what would complete the circuit.

Magnets and a compass were used and some children found they could make another magnet and learned how to make a compass. The music corner with bottles of water, wire stretched over frames, xylophone and home-made instruments was a source of both intellectual activity and aesthetic satisfaction for children.

Such an environment was most productive when the children worked under the 'free day' system. The children planned their work and chose when to do it. They experimented with printing and mirrors, with the effect of light on plants. They bred animals and studied others in their own environment. They buried a dead mouse and kept digging it up again to see what was happening to it. They watched the growth of mould, of plants and seeds.

They put stones in jars of water and then studied the workings of the lavatory in school and at home. They watched the passage of the sun during the day and linked this with the compass, shadows and the time of day.

Five-year-olds put wet mud and ice by the heater and watched the effects. They put the thermometer in the sun and on the heater (it broke). They contrasted their sundried bricks of mud and straw with their clay bricks fired in the kiln; their dough and the baked product. They felt melted wax and watched it harden again.

Linguistic experience

As the children's knowledge of the world became richer so the imagery of their spoken and written language was enhanced. They made discoveries about words in their reading and explored their possibilities in writing. Language among the children flowed freely and they helped each other, but conversation with adults is essential to help children to verbalise and clarify their experiences. Research is needed to find the ideal ratio of children and adults for the best development of the child.

How can a teacher provide the necessary linguistic experience for forty children just when they need it? She cannot, of course. She needs other adults to share the task. There is no need for them to be teachers. Women of a reasonable standard of education, especially mothers, could cope with many of the language needs of young children under the guidance of the teacher. Adults are needed too to help maintain the mass of material and to make new equipment.

Can anything be done about getting more adults in schools now? An obvious assistant for the infant teacher is the auxiliary. These were used in some districts for many years under a variety of names. Recently I have noticed a distinct change in infant teachers' attitudes. They want more auxiliaries, one for each classroom if possible. The N.U.T. is out of touch with infant teachers and will have to think again about auxiliaries.

I think the day of the class teacher as king of his classroom is coming to an end. I see the modern teacher as head of a team of assistants and his classroom less isolated than formerly. The scientist is no longer a lone worker in a small workshop, but the head of a team of which some will be scientists, others technicians of various sorts. Since 1956 dentists have been using dental hygienists—and before that dressers—who do simple jobs *on the*

teeth. Yet there has been suggestion that the dentist's job is being diluted. The teacher is almost unique in his continued isolation.

The need for auxiliaries

What kind of assistants should we give the infant teacher? I envisage auxiliaries as at present to assist with domestic work and also assistants who are better trained and closer to the teacher. It would be an advantage if assistants could read stories well. Stories provide a continual source of delight and education. The children at the 'why' stage would get a response just when they need it and this is the crux of all learning situations. Those solving problems by exploring the environment would not be frustrated by lack of advice or appreciation. Help could be given in creative writing and in the use of reference books. An adult would always be available to admire a child's achievement and stimulate his thinking by discussing it.

An assistant could handle registers, lists, money and messages which flow continually through infant schools, leaving the teacher more time for valuable contacts with the children and talks with parents who frequently call with problems.

Observation of children is a valuable means of research; and a teacher with assistants could record what she sees and hears. Records of children's language would help greatly in teaching us how children learn, while the learning situations inherent in Piaget tests could be used more extensively.

Where are we to get these assistants? From the neighbourhood around the schools. Well-educated women occasionally apply for jobs as auxiliaries and dining room assistants. Areas rich in such potential recruits are usually barren of candidates for cleaners' jobs. An educational authority might have to consider this problem over the entire area and arrange transport for different schools.

Training for assistants could be undertaken in local colleges but auxiliaries, the lower rung of assistants, could have their training in the schools under the class teacher. This training is necessary as ideas about their duties are very hazy. Each school should work out its own ideas but standardisation of conditions should be the aim.

Reorganisation could also help the teacher. Why should every teacher display the same material in every room? An 'open' school with corners, rooms and bays for different sets of materials seems the next step. This would be nearer the child's home, for he would not expect to find cooking materials

Continued at foot of page 66

The Awkward Angel

A View of the Work of David Holbrook

EDWARD BLISHEN

In two thousand words, it is hardly possible to review the work of David Holbrook (three substantial books on the teaching of English, innumerable compilations); and what I want to do is something different. Here is a highly influential figure in the world of English teaching today. He is quite plainly on the side of the angels: that is, he speaks with those who would raise the teaching of our mother tongue from the dreary confection of lifeless habits it so often is to something far warmer, more humane, more effective. But he is in some senses a very awkward angel. His allies tend to look uneasy when his name comes up, as one might if reference were made to some sympathetic but, in various respects, eccentrically indefensible member of one's family. I want to look at three areas in which I think one might find cause for this strange embarrassment with which at times the name of David Holbrook is received in teaching circles—the name, one must remember, of a teacher of obvious courage, vision and impressive industry, and of a critic who, when he really has something to get his teeth into (I think he is the worst generaliser I know, and one of the best particularisers), is vastly stimulating.

For the first of these areas, I go to the book that

established him as a dominant figure in the field of English teaching: *English for Maturity* (CUP, 1961). In substance, that book said well, and influentially, many things greatly in need of being said: it was a blast against the narrow range of reading, writing and general classroom activity that for so long has been characteristic of English teaching. It said, in essence, that when we are teaching English we are teaching everything, and that narrowness will not do. But in driving out an old narrowness, I believe it admitted a new one. Let me (I have to be cryptic, but one point will do as well as many) take his attack, in the chapter called 'Reading', on the work of C. S. Forester. It is fair to point out, as David Holbrook does here, that the texture of Forester's writing, and the feeling behind it, is relatively coarse—and indeed it is. Forester's work belongs to that order of writing in which the full nature of the issues he is concerned with are not faced. This is the world in which danger and violence and pain are the properties of entertainment, not the shattering horrors they are in reality.

But when David Holbrook finds in Forester actual 'vicarious sadism', an impulse to exploit nastiness and insensitivity, he goes, as I see it,

Continued from page 65

and clothes in the same room. Teachers would then have to act as a team operating throughout the school. Some could become the adult to whom the children turn for help on a particular job. Care-takers and cooks could help the children's education through casual as well as organised contacts. With such an organisation there would be no need for groups of assistants for every classroom. There would be a more economic use of personnel over the whole school.

In a 'free' school, where the children live outside and in, the morning and afternoon breaks, which can be frightening for young children, could be abolished. With assistants supervision would be

possible everywhere and teachers could have staggered breaks. In and out living in school is far more rich and adventurous and becomes possible with more adults.

Teachers would be less lonely. Their public image should be higher since they would be in charge of adults, not just children, an important point to the layman; but they must abandon some of their prejudices about other adults in the classroom.

I should like to see the experiment carried out in a number of schools. This is a more practicable aim than reducing the size of classes. It would not only enhance the educational environment for the child but would give teachers greater opportunities to develop their own gifts to the full.

characteristically too far. The general values of C. S. Forester, of the surface though they may be, are quite clearly decent ones: he is not enough, for anyone, but nobody is going to be perverted, or made insidiously insensitive, by reading him. And David Holbrook's loftiness about this whole world of entertainment—he *does* lay about him in this chapter, even making a moral monster out of P. G. Wodehouse—seems to me symptomatic of the flaw in his whole approach; he surely fails to recognise that all of us, and especially those who are growing up, live at many levels of moral courage, of seriousness, of attentiveness and endeavour and perception.

In David Holbrook's vision, we should all be at our best, always, and should dismiss whatever has in it the flaw of less tension, less seriousness, less sensitivity, less significance, than is to be found in the best. Now, this is to catch nine hundred and ninety-nine out of every thousand of us very much of the time on, morally and aesthetically, the wrong foot. It is to catch us enjoying all sorts of narrow, brittle, foolish and unimportant literary worlds—and fully aware that we are doing so. It is to catch us reading nonsense, or the merely witty (and it seems to me a serious drawback in the David Holbrook canon that he has a high distaste for wit)—or being ourselves nonsensical or witty.

A major weakness

I believe there is here a major weakness in that approach to English teaching that David Holbrook would commend to us. Of course, children should know the best, should be given a coherent sense of that scale of things in which one human act or achievement is seen to be more sensitive and life-giving than another. Of course children should be helped, and especially through what ought to be the central experience provided by our English teaching, to achieve the happiness and the tolerance of one another and the general warm sensibility towards which much in their nature drives them, and from which much in our social and cultural behaviour tends to bar them. But David Holbrook—and this is, to my mind, the unacceptable thread in the argument of *English for Maturity*—would have us absolutely sensitive and significant and tender, and living and feeling and thinking *in his style*, all the time: and I believe that classroom practices based on such expectations may be fundamentally unreal. The teacher has to confess the lesserness in himself, and acknowledge it in his pupils, if he is to give them such a feeling for the

highest and truest and most humane standards as will stand up amid all the bewildering fluctuations of value and significance that form the normal life of anyone whatever. He must also, surely, recognise that his own emotional and intellectual pattern is not the only human pattern: a teacher must use himself in his teaching, but be sceptical about himself.

My first point, then, is that though David Holbrook has directed our attention most vividly to the need to keep our teaching sensitive and open, he has at the same time, curiously, urged us to close it up. Side by side with the excellent main argument of *English for Maturity* marches another argument which, if we accepted it, would lead us to set up, in our classrooms and elsewhere, a Watch Committee no better than other such institutions for having its origins in liberal rather than illiberal notions.

Backward children

It is, I think, a variation of this result of David Holbrook's over-intense view of human nature that forms the second of my areas of unease. For this, the major reference is to that, in so many respects, excellent and humane book, *English for the Rejected* (CUP, 1964), in which, when he refers to the plight of so many of our backward children, no one would wish him to be less passionate and eloquent than he is. *English for the Rejected* is a richly argued and documented attack on our neglect of, and cruelty towards, those who do not pass the sterile tests of merit on which, in schools, our assessment of children is based. Yet again, I believe, David Holbrook goes too far, is too absolute and intense. In order to make his case that the work of his 'backward' children is full often of an heroic merit of its own, to which we are generally insensitive because the tests we apply to it are narrow and irrelevant ones (a case that, in many instances among those he quotes, the work could be left to make for itself), he digs into it for all manner of secret meanings. Of the danger of doing this he is not unaware, and he warns teachers not to bring amateur psychology to bear on their children's writing: but his example, lavish and convinced, is more potent than his admonitions. Oddly, I think the effect of this is not merely to alarm any reader who knows that, excited by the ideas of Melanie Klein or D. H. Winnicott though he might be, the amateur had better not take too seriously any interpretations of the hidden mean-

ing of children's writing that those ideas might suggest to him: the effect is also, as I see it, to weaken David Holbrook's general case, quite unjustly. Because though (good critic that he is) he points to beauties in the children's writing, to immensely touching veiled allusions to stresses and desires we might easily miss, he does so in the manner and with the force of one who would claim that, somehow, these qualities in the writing are all the better for being smothered under such an unhappy, reluctant, difficult use of language. So that, while *English for the Rejected* remains the most moving of statements of the case of our backward children, it also seems to point with a confidence not overruled by David Holbrook's own warnings to a possibility of semi-psychiatric intrusion by the teacher that, were any of us seriously to act upon it, would be truly alarming. It also, oddly, seems to suggest that backwardness is a kind of paradise, when in fact it must be (if only in the classroom) pure hell. I recognise, of course, that David Holbrook would not say backwardness was paradisaical in the form of a direct statement. But this seems to me to be an implication of *English for the Rejected*, and another cause of the embarrassment felt by his allies. It arises, again, I feel, out of David Holbrook's failure to recognise that life is a much more mixed affair than all this. Wherever he walks he wishes to make angels. It may be the worst aim a teacher can have.

Organisational change

I come to my third area of uneasiness. Here, I realise, I might be thought to be weakening the line of battle, by turning to a knight and upbraiding him for not being also a foot-soldier. At his best David Holbrook is exhilaratingly knight-like—in *The Secret Places* (Methuen, 1964) he rides down on the shabby ranks of the text-books and the text-book writers and the text-book users and sends them flying in all directions, his lance suddenly tipped with comedy and wit as it so rarely has been, in the long earnestness of his writing. He has scattered the proponents of grammar and of conventional classroom exercises and pieces of writing with the same knightly verve, and for many teachers who have read him those awful forces will never assemble again. But (and once more, I feel, as a result of his failure to recognise the mongrel nature of life and human effort) he remains aloof from all those movements within education which are directed towards the betterment of schooling by changes in its organisation. This may well be the

foot-soldier's sphere. Those who worry away at the practical changes that might make life so much better, not only for the hapless backward ones but also for the hapless forward ones, and that might present David Holbrook and all who have his vision with teaching conditions in which they could more easily realise their vision—those who do this may seem to be fighting in the mud, and to be a little muddy themselves. Yet in fact the fight on foot, and the knightly tilting, are all part of the same battle, and it is required of us, I would have thought, that we all turn our hand to both forms of attack.

In *English for the Rejected* David Holbrook willfully dismisses those arguments that would seek to show that the condition of the rejected might be transformed if not merely the attitudes which lead to rejection were changed, but also the organisation of our schooling which is based squarely on those attitudes. Again, he is aloof. The roots of his aloofness are too deep and tangled to be dug for here. But reading him when he is being dismissive of any plea for organisational change in our educational system, I am reminded of a story that ET tells in her book, *D. H. Lawrence*, about that very great writer those attitudes have clearly had an effect on David Holbrook so deep that at times he comes close to parodying Lawrence's very turn of mind. ET says they once went to hear music by Handel, and Lawrence came away from it groaning. Asked what had upset him, Lawrence muttered, "*Too voulu!*" I believe this may be what David Holbrook feels about attempts to improve schooling by pressing for changes in organisation: he feels it is too much a matter of the impure will, too contrived, too grubbily political—too muddy. As I see it, his aloofness makes his own struggle less effective than it might be; and it is surely another reason why his allies so often fidget uncomfortably when thinking about him. Dammit, he's so often so excellent in action—no one could possibly write better than he has done about the rules that a teacher of backward children must lay down for himself—no one can have given so many teachers in frustrating conditions such relief and invigoration as he has given them by analysing with penetration and honesty the boredom and fatigue and resentment that may pile up when one is teaching. Yet, for all this, David Holbrook is . . . a Superior Person. That, alas, is it. There he goes, with the spirits of Melanie Klein *et al* in attendance, sweeping out on another of his sorties, and this will mean splendid discomfiture for the enemy—but alas, it is bound to mean also some obscure and frustrating and often indefinable discomfiture for his friends.

International Study

Grouping in Education. Edited by Alfred Yates (U.N.E.S.C.O. Institute of Education, Hamburg), John Wiley, 1966, 96s.

This excellent book reports a Conference at Hamburg in December 1964, when educational representatives from the United Kingdom, the United States of America, and countries of Northern and Western Europe met to discuss 'the basis, operation and effectiveness of the forms of grouping that are practised within these countries'. Grouping covers all the main groups and sub-groups to which individuals are assigned within the organisation of any modern system of education catering for a mass of individuals. As the introduction states, 'Housing the entire educable population within one institution would no doubt prove to be impracticable and so one would expect the establishment of separate schools and colleges in each populous neighbourhood.' Furthermore, some candidates within the population would be requiring infant education, others university type education, and so on, so that educational needs would be catered for by separate institutions. In fact, the more complex the demands that the society made in terms of the development of differentiated skills and specialised knowledge, the more diverse the educational establishments might become. Within each of these establishments of every type further sub-grouping would be necessary; the individuals in each would be assigned to separate classes, seminars or tutorial groups. By means of specially commissioned papers from those attending the conference and by collecting together a vast collection of summaries of research papers on grouping, this study attempts thoroughly to investigate the assignment of individuals to groups within an educational system of a complex modern society.

The United Kingdom representatives were J. C. Daniels, University of Nottingham; A. Yates, University of Oxford; J. C. Barker and D. A. Pidgeon, National Foundation for Educational Research; the Swedish representatives included Torsten Husen and Ingvar Johanneson, whilst the American group had Harry Passow of Teachers College, Columbia, amongst them. The results of the conference deliberations form the basis of the first part of the book, the research papers are included in part II. The conference considered inter-school and intra-school grouping arrangements, or, as the chapter headings suggest, allocation to schools and grouping within schools. The allocation problem is dealt with on a comparative basis, whilst the more dynamic section, of especial concern of FORUM readers, grouping within schools, dealt with grading, special classes, tracking within the school, streaming and setting, clubs or free activity groups, planned heterogeneous groups, planned flexible grouping, teachability grouping and intra-class grouping.

It is quite impossible to condense, summarise or adequately comment on this important book in the space of a short review but the final conclusions of the conference need including. Otherwise, it must be left to FORUM readers to read the book themselves for here we have the findings and the outstanding researches on non-streaming available in one volume. The conference summary ends with this concluding note: 'We would advocate that inter-school grouping, with the possible exception of the provision of special schools for grievously handicapped children, should be based on age and geographical location; that methods of intra-school grouping should be confined during the primary and early secondary stages to sub-grouping within classes and that these and any subsequent forms of grouping that might seem appropriate at the later stages of the secondary school course should be constantly reviewed by systematic research, which should not be carried out as a series of piecemeal spasmodic inquiries, but conceived as an integral part of the educational organisation.' One hopes that here we shall press forward with our neighbourhood non-streamed grouped schools and plan for a future of widening educational opportunity.

ERIC LINFIELD.

Agents of Change

The Rise of the Technocrats, by W. H. G. Armytage. Routledge and Kegan Paul (1965), 448 pp., 56s.

Professor Armytage has written several books of great value for the student of education. To the study of historical development he brings his own wide knowledge and profound interest in the contribution of science and of scientists to educational change. But science has its practical application in technology—the underlying force that brings about social and therefore educational change, and in his latest book, the 'Technocrats' take the centre of the stage.

The book is written specifically for students of the sociology and history of science, but it is just as relevant for students of education. For, as the author shows, as technology developed, and as technologists began to form their own tightly knit groupings, so new institutions were developed for systematic teaching and research essential for further development. It was a graduate from the famous Zürich polytechnic who financed the university at Tomsk, set up to help the exploitation of Siberian resources in 1888. The influence of the Russian technical high school on American technological institutions in the nineteenth century is little known—nor the extent to which the Americans in their turn, were influenced, as planning technologists, by their experience as designers and engineers in the great engineering projects in Russia in the 1920s.

In his final chapter, 'An Operational World', Armytage describes the international scientific and technological institutions that have come into being. This book covers a tremendous scope; starting with the break out of science in the sixteenth century, it traces the development of science, science teaching and technology in the

YOUR LIFE AND WORK

John Mackenzie

As economic matters assume an ever-growing importance in adult life, so they become of increasing interest to the pupil about to leave school.

This book aims to arouse and develop this interest. Since the pupil will shortly become a wage-earner, it begins with a chapter on incomes of various kinds. Further chapters deal with taxation, insurance, how prices are determined, saving and investing. Pupils are then led to consider larger economic questions such as the organisation of production and distribution, inflation, the balance of payments and the population problems of the near future.

The relevance of basic economics to the everyday lives of pupils is well brought out. The text is clearly written in language that can be easily grasped by the average third-year pupil, and the questions at the end of each chapter test his understanding of what he has read.

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main European countries as well as in China, Japan, Russia and America—bringing the whole thing up to date in each case. The book is immensely stimulating, full of new ideas, drawing attention to little known relationships between groups of people which have influenced change. It can be strongly recommended to all those who want a contemporary approach to history—one which accords to scientists and technologists their rightful place as the prime agents of change.

BRIAN SIMON.

Historical Anomalies

Direct Grant Grammar Schools, by Elizabeth Allsopp and David Grugeon. Fabian Society (1966), 20 pp., 2s. 6d.

Here is a reasoned, constructive and well-documented approach to the anomaly of the 179 Direct Grant Schools. The case against leaving them as they are is irrefutable.

The per capita cost on public funds of educating children in these schools is far greater than in maintained schools, and the total contribution from public funds is disproportionate to the number of places that are in any sense 'public'. They are financially anomalous.

The authors effectively refute the claim 'that these schools achieve a wide social mixture'. Only for some of the 64 denominational schools can this claim be substantiated: the remaining 115 range from a 'top ten' whose ultra-selection is comparable to that of the Public Schools to those whose selective intake is similar to that of any L.E.A. Grammar School. They are predominantly middle class and generally further social and academic division.

Nor can most offer that curricula diversity and opportunity for choice that is possible in a comprehensive. 'Academic subjects predominate, and the major creative subjects frequently seem of less importance in the life into the Circular 10/65 patterns of comprehensive schools.' Some D.G.S. present further anti-educational features in an academic rat-race through cram-course 'high flier' streams, and the very early specialisation condemned in the Crowther Report.

A plan of action is offered to the Secretary of State for the integration of all, except perhaps the 'top ten', into the Circular 10/65 patterns of comprehensive reorganisation. Most could be reorganised in the same ways as L.E.A. grammar schools; those with boarding facilities, already the least academically selective, could serve more than one L.E.A. and thereby meet a real need; girls' D.G.S. could become upper schools or sixth form colleges, preferably co-educational. Several denominational schools are already working towards integration and might in some cases form denominational 'houses' within comprehensives. Meanwhile, the ultra-selective few should be referred to the Public Schools Commission.

An omission from the pamphlet's plan is the need to safeguard the principle of the open road through any

tiered system. However, it reaches two important conclusions: that 'D.G.S. need to join the comprehensive system for the sake of their own pupils and not just to help the L.E.A.s', and that 'D.G.S. have an important contribution to make towards the rising standards and opportunities in education for the whole secondary community'.

NANETTE WHITBREAD.

French in the Primary School

Working Paper No. 8, Schools Council. H.M.S.O. 1966, 84 pp., 7s. 6d.

This paper sets out clearly the problems encountered and the issues raised in this new development in modern language teaching. It includes an account of the primary French pilot scheme and an appraisal of other programmes of primary school teaching of French outside the original scheme. Part II and Part III contain reports of two conferences, one on the presentation of French in primary schools, the other on the implications of the new developments for secondary schools. The Working Paper ends with a chapter by Mr. Spicer, Organiser of the Nuffield Foreign Languages Teaching Materials Project, on the courses he and his colleagues have been preparing.

Contributors to the conferences list useful sources of information for teachers and give suggestions on methods of integrating French into the primary school classroom. However, at the secondary level it is doubtful, for example, whether simple material designed for young French children will appeal to English adolescent readers. No mention was made at the conferences of previous experience in the Flemish areas of Belgium, where French has always been taught in primary schools, or of training teachers to teach the language to pupils of all levels of ability. Ignorance of the results of research on the relationship between the aims and the methods of teaching was also shown. None the less, the conferences provided a good exploration of the problems and the Working Paper as a whole merits serious attention.

ELIZABETH HALSALL.

UNIVERSITY OF DURHAM INSTITUTE OF EDUCATION JOINT CANADIAN-U.K. CONFERENCE "THE TEACHING OF READING"

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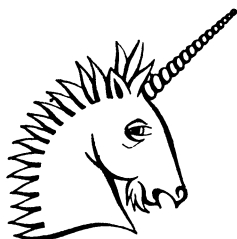
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