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# FORUM FOR THE DISCUSSION OF NEW TRENDS IN EDUCATION

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# Curriculum Development

Problems of curriculum reform are currently exercising educationists in many countries. Pioneer curriculum development projects were being undertaken in the USA and USSR in the early 1950s. In Britain critical examination of the curriculum can probably be dated to the Froebel Foundation's interest in Piaget's researches from the mid 1950s and publication of the Crowther Report at the end of the decade. Systematic curriculum development projects have been encouraged by the establishment of the Schools Council in 1964.

Wider interest, outside research institutes, derived in North America from concern about low standards of attainment as the Canadian, Dr Hilda Neatby, exemplified in her critical book entitled *So Little for the Mind* and published as early as 1953. Such criticism caused official Reports on British Columbia (1958-60) and Manitoba (1959) to affirm that a primary aim of education should be to promote intellectual development: by the turn of the decade there were various syllabus study groups in Canada and the USA. Critical discussion of curricula began in the USSR with the reorganisation of secondary polytechnical education in 1953: new syllabuses introduced in 1955 were criticised for still being 'divorced from life' and the 1958 Reforms introducing 'work experience' were abandoned in 1964 as unworkable. Soviet complaints about over-loaded, irrelevant and remotely 'academic' curricula have not been aimed at making them less intellectually demanding, but rather at discarding the dead wood of traditional syllabuses and achieving closer integration of theoretical knowledge and its practical application. North American and Soviet approaches are seemingly at variance with some post-Newsom trends here.

Curriculum development projects for the secondary stage undertaken by the Schools Council and Nuffield tend to diverge into differentiated curricula for three ability categories. Thus the Nuffield Science Teaching Project has been designing courses for the ablest 10% or so and *Science for the Young School Leaver* for 'those of average and below average ability'; the Schools Council has four other RSLA projects in hand for this ability range.

Meanwhile, following the Beloe Report, CSE courses for a middle ability range have been developed in schools and regions with Schools Council help. Such a divisive approach to curriculum development has no counterpart in North America, the USSR nor anywhere else. Already and inevitably there is confusion at where to draw the dividing line in school.

The same confusion has not arisen in curriculum development for the primary school because these projects have been developed through analysis of the concepts children form in appropriate cognitive fields, and consequently follow an intellectual sequence in the subject content. In the USSR too, where this method has been applied in curriculum since about 1954, the greatest progress has been in curricula for the primary grades.

Much more research is necessary into learning procedures of older children if there is to be effective curriculum reform in secondary education geared towards promotion of intellectual development for all pupils. Analysis of objectives for the secondary curriculum as a whole as well as for each subject must also be undertaken. If objectives are seen in terms of kinds of thinking which are expected or required, they can be related to concepts which research suggests children are capable of forming.

This is the direction taken in the USSR since about 1961 and the USA through the influence of J S Bruner since the Woods Hole conference in 1959. Research institutes and educational psychologists take a leading role; but development hinges on re-orienting teachers through in-service courses, and co-operative interchange of ideas between project leaders and practising teachers.

Articles in this number indicate the beginnings of such approaches here. New curricula appropriate to non-streamed and comprehensive schools urgently need to be developed. The Nuffield principle of starting with the most enlightened teaching to be found in the schools, and involving teachers at every stage in the further development of new curricula, must now be applied to this end. Support through in-service courses and research will be essential.

# The North-West Regional Curriculum Development Project

**W G A Rudd**

Dr Rudd, who was previously on the staff of the University of Manchester School of Education, is now Leader of the North West Regional Curriculum Development Project. He has taught in primary and secondary schools and in a college of education.

When Schools Council **Working Paper No. 2<sup>1</sup>** was published in 1965 the University of Manchester School of Education already had in being a co-operative research and development programme involving some 150 teachers. The project was divided into five panels, developing respectively new techniques of examining at CSE level in English, mathematics, modern languages, art and music. In addition to a majority of practising teachers, each panel included one or more lecturers from colleges or the University Department of Education, an HM Inspector and a specialist in experimental design and statistical analysis. For all concerned the project was a part-time activity, and our experience suggested that (given initial enthusiasm, a clearly-defined and realistic programme of work and a measure of success in each activity) research and development work of this kind could profitably be sustained over a period of years.

This experience was drawn upon in developing the **North West Regional Curriculum Development Project**, a scheme which enjoys the support of teachers and authorities in the Blackburn, Blackpool, Bolton, Burnley, Bury, Lancashire, Manchester, Oldham, Rochdale, Salford, Stockport, Warrington and Westmorland areas, as well as of the University of Manchester School of Education, the Schools Council and HM Inspectorate. The project is under the general guidance of a teacher-controlled steering committee, responsibility for financial matters being in the hands of a finance and general purposes committee.

Administratively, the scheme involves establishment of fifteen local development centres, each under the full-time leadership of a teacher or other educationist seconded or appointed for this work. All centres are linked through a regional centre located in the University School of Education, and linkage is maintained primarily *via* a study group including the leader of each centre.

Each local development centre is autonomous. Within this framework the steering committee has adopted the following terms of reference:

(i) to be a co-ordinating body for the **North West Regional Curriculum Development Project** and to assist in the work of the local development centres by:

- (a) offering suggestions and advice to the local centres;
- (b) collecting and circulating information about projects being undertaken in the local development centres;
- (c) providing other services as approved by the steering committee at the request of local centres.
- (ii) collaboration with, and collection and circulation of information made available by other similar curriculum projects, eg the Nuffield Foundation/Schools Council project in the humanities. All activities of the regional project are subject to the approval of the steering committee.

It is anticipated that teachers attending local development centres will concern themselves with a wide range of current educational issues. Until 1970, however, the regional project will concentrate on development work in preparation for raising the school leaving age. The Schools Council, on the understanding that some work of national significance will come from this project, has authorised substantial financial assistance for this period. In 1970 a complete review of the organisational structure will be undertaken.

It is a truism that curriculum developers labour in vain until the outcomes of their efforts influence the day-to-day work of the teaching force. Our development and research programme aims to involve a substantial number of teachers from the outset, in its attempt to rethink the major purposes of the curriculum, major treatment of its subdivisions, internal school organisation and teacher-pupil relationships. Linking together the necessary research and teaching skills can perhaps best be effected, therefore, by members working together as a team on a group approach to the inquiry, rather than by any number of individuals, however gifted, working in isolation.

This raises questions concerning the relationship between local and regional development centres. Schools Council **Working Paper No 10<sup>2</sup>**, para 1, identifies essential elements in curriculum development:

- (a) careful study of the objectives of teaching;
- (b) development and trial use in schools of those methods and materials thought likely to achieve the objectives upon which teachers agree;

(c) assessment of the extent to which development work has in fact achieved its objectives;  
(d) feedback of all experience gained, to provide starting points for another cycle of inquiry. This implies (*para 11*) that teachers should have regular opportunities to meet together, and that they should look upon the initiation of thought, as well as the trial and assessment of new ideas, as an integral part of their professional service to society. Thus, in the Council's view (*para 27*), the basic principles upon which curriculum development should be built are, first, that the motive power should come primarily from local groups of teachers, and, second, that there should be effective and close collaboration between teachers and all those who are able to offer co-operation.

All groups co-operating in this project fully support the Schools Council principles. In particular, we wish to affirm that establishment of a regional centre in no way implies *control* of local activities. In principle the regional centre's programme is intended to *support* local work, and freedom of decision and action for all local groups is regarded as an essential element in maintaining the enthusiasm and sense of commitment necessary to provide motive power for local effort.

Our earlier successful experience of group research and development convinces us of the force of the Schools Council's second basic principle. We further consider that in a region so densely populated as NW England some linkage between local development centres should enable much more productive use to be made of the services of available specialists.

Once the possibility of establishing an integrated scheme was realised other advantages became apparent. If teachers could agree about a substantial number of objectives, integration would offer the freedom for any centre or group of teachers to concentrate its energies on a single project, secure in the knowledge that neighbouring groups would, at the same time, be developing other courses aimed at the same objectives. Once such developments begin it might even be possible for individual teachers to transfer between centres, in order to assist with a project in which they have a special interest. In these and other similar ways efficiency of operation could be increased, and available resources deployed more effectively, in preparation for raising the school leaving age.

For obvious reasons, no such arrangements can be entered into until local centres have indicated the curriculum projects in which they wish to carry out development work. Meantime, experience accumulated on both sides of the Atlantic stresses the importance of beginning development work by close study of the objectives of teaching.

All teachers will agree as to the importance of being clear about, and committed to, the objectives of the curriculum they are teaching. However, many will wonder how, in as busy a world as ours, time is to be found to read, consider and evaluate the endless stream of publications pouring from the educational press. With this in mind we determined, when the leaders' study group was set up in February 1967 (before our local centres had been fully organised), to do what we could to help teachers in local development centres with this task.

Between February and June 1967 the group spent two whole days each week discussing the objectives of education for pupils of the age and ability range concerned. In this work the group was assisted (on a basis of part-time membership or occasional visitation) by a total of over 100 other persons, including HM Inspectors, LEA advisors, colleagues of the University of Manchester Faculty of Education or of local colleges of education, distinguished local head teachers and leaders of interested voluntary organisations. This activity led to publication, in draft form, of a 35,000-word pamphlet on general objectives which is now being examined by discussion groups set up for the purpose in each local centre under the chairmanship of its centre leader.

During the Autumn Term, 1967 separate regional groups met to study specific objectives in ten different curriculum areas one day per week. Reports from all ten panels were compiled into a second draft pamphlet, dealing with special objectives, which is due to be discussed in each local centre during the Spring Term 1968, under the leadership of those teachers from the centre who attended the regional discussions. No pressure is being put on local groups to accept ideas put forward by regional groups. Provided that a working basis for co-operative effort emerges from the local discussions our integrated programme for subsequent development work will be based on those curriculum objectives which a large body of teachers finds acceptable, no matter from which source they originally emanate.

We hope to complete local discussions on objectives by April, 1968. Given the hoped-for measure of agreement among teachers the way will then be clear for development of new courses. The project steering committee will invite offers of work from each centre and will publish details of responses received. It will not be necessary for all members of a local centre to agree on a single project.

Once decisions have been taken concerning the courses to be developed it will become possible to recruit other specialists to co-operate in teachers' schemes. Several types of linkage are possible here, notably between specialists in different fields who are associated with the same scheme and between those in the same field who are associated with different schemes. All such links will be forged and maintained, for good communications are vital in a project of this nature and scope.

Experience of our CSE research and development project has shown that, given certain conditions, real enthusiasm can grow from initial goodwill and general interest, and that this can be sustained over a period of several years. The most necessary ingredients for such growth in a co-operative project seem to be:

- (i) a professional approach on the part of all group members;
- (ii) formulation by the steering committee of a series of intermediate goals for action which are known in advance by all group members;
- (iii) freedom for each group to plan and carry out its own programme of work;
- (iv) a clear recognition by each member of what he is required to do;
- (v) good communications between members and between groups;
- (vi) belief in the worth of the whole endeavour;
- (vii) sound administration.

Given these conditions the achievement of each intermediate goal (even though it may have been achieved with great difficulty) will be accompanied by a sense of success which in turn will stimulate and direct the next effort.

There are certain to be occasions in the life of any extended project when its members need to depend upon feelings of mutual regard if the whole project is not to collapse. Very often these are associated with the research (as opposed to development) aspects of the work, and particularly with the field of assessment. Since such critical occasions cannot

be avoided if any clearcut results are to emerge from the work, it is only by building up goodwill, mutual respect and high morale *before* the first crisis occurs that a group can give itself much chance of eventual success. The tremendous boost to morale which results from overcoming the first real crisis is perhaps the greatest energiser which any group can enjoy.

Space here is insufficient to do more than mention several other important aspects of this project. First, to the extent that it is successful teachers need no longer feel that isolation with their problems is a necessary concomitant of freedom in their own classrooms. Second, the project is product-oriented in that it aims to prepare, try-out and evaluate new teaching materials. Though the products should be considerably more suitable for the pupils concerned than are curricula currently used in many secondary schools, they are unlikely to prove entirely suitable at their first application. If recognition of their inadequacy leads teachers to undertake additional cycles of preparation, experimentation and evaluation the pragmatic approach to curriculum renewal will be greatly encouraged and a powerful new technique will be added to the teacher's armoury.

The project is also process-oriented in the sense that the activity itself is likely to be highly beneficial to all concerned. Indeed, the fruits of this activity are likely to provide one main reason why project members may eventually consider its products unsuitable: for it is hoped that experience in the project will enable teachers to realise many curriculum possibilities of which they had previously been aware.

Not to be neglected either are the opportunities the project offers for extending active co-operation between different types of educationist into other spheres of their work, or for facilitating joint activities between teachers serving different LEAs. Even if only some of these possibilities are realised a research and development approach to curriculum study in local centres offers so much of value to the teaching force at present that these centres deserve all the support which the teaching profession can muster.

<sup>1</sup> *Raising the School Leaving Age: A Co-operative Programme of Research and Development.*

<sup>2</sup> *Curriculum Development: Teachers' Groups and Centres.*

# Curriculum Change in Practice

**J F Kerr**

Professor Kerr has been directly involved in Nuffield and Schools Council curriculum development work and is responsible for in-service courses at the University of Leicester School of Education.

The central theme of the British contributions to the symposia held at the **Third International Curriculum Conference** at Oxford last September was the need for the teacher to be the principal agent of change in the current movement to reform school curricula. Joslyn Owen, the joint secretary of Schools Council, pointed out during the symposium on 'Strategies of curriculum innovation' that teachers, however, were not trained to take the lead in changing the curriculum. He spoke about the need to 'create and stimulate the inventive nature of teachers' by fostering their involvement as innovators and explorers in the renewal process.

How can this be achieved? What measures are being taken to support and encourage teachers to provide the kind of education children need? In the past, perhaps we have overestimated the educational outcomes which can result from changing the shape and character of the school system. It is comparatively easy to build more schools, to introduce new patterns of organisation, to train more teachers and to devise more sophisticated teaching aids. It is much more difficult – and more important – to know in precisely-defined terms what is the purpose of it all. That is, what are our educational objectives in operational terms for a particular group of children at a particular time in a particular environment; what subject matter can be used to achieve these ends; what learning experiences are to be provided; how can we assess the degree to which the specific objectives have been achieved. It is these four complex and interrelated questions to which teachers are being asked to direct their attention.

The work of the CSE panels and Nuffield Foundation Project teams is recent evidence of the co-operative enterprise of which teachers are capable when opportunities for working together are provided. But some kind of supporting agency or structure, as with all group work, is necessary to sustain and coordinate their efforts. The responsibility for local leadership has been handed over by Schools Council to the local education authorities, supported wherever possible by other partners, such as subject associations of teachers, colleges of education and university schools of education. How is the co-operative process working out? The purpose of this

short article is to comment, with particular reference to curriculum activity in the Leicester area, on some of the factors which seem to be important in determining the nature of the cooperation between teachers, local education authorities and other partners involved in the renewal process.

The key to successful innovation is effective co-operation between all the agents involved in the process. This is a matter of leadership which may, of course, be assumed in many forms. Clearly, autocratic leadership, however benevolent, is more likely to deter rather than stimulate curriculum reform by group methods. With no intention of implying an evaluative comparison of the city and county authorities in Leicester, when observed from the outside two types of shared leadership are apparent. Over the past decade or so, a reputation for progressive experimental work in county schools, particularly at the primary level, has been built up mainly through the stimulating efforts of past and present members of a generously-staffed Advisory Centre. Leadership has been of the *laissez-faire* type and, after a period of intensive innovatory work in certain areas of the curriculum even before Schools Council was formed, new ideas and materials are now being spread right across the county school system. Opportunities for change are available to most schools; for example, all the High Schools are being equipped to use the **Nuffield Foundation Science Project** materials, a development which raises the problem referred to below of re-training the teachers. A different style of leadership of a democratic type has promoted in the city area a more structured, equally progressive programme of curriculum innovations which are on trial in particular schools. Different types of leadership are probably needed for different phases of change. Thus, a creative, dynamic person full of enthusiasm for a new approach to his subject might be an ideal leader at the pilot stage of a project but not necessarily the right person to carry out the evaluative stage or to be responsible for disseminating the new ideas. Few people are completely competent in all rôles that are needed to make new curricula and, in any case, these skills are not yet highly developed. The Leicester University School of Education has arranged a one-year, part-time course in the theory

and practice of curriculum development to which the leaders of curriculum projects in the area have been invited. University departments can fulfil a number of rôles in the curriculum renewal process but perhaps the 'training the leaders' rôle is the most urgent.

There are two points of view about the importance of communication between all the partners involved in curriculum change. The more common one – and this surely applies to large rural counties – is that if teachers are to participate fully in the renewal process, even if they are not directly involved in the trial work, they should be kept informed so that they can prepare themselves to appraise the materials when they become generally available. A point of view which is less often expressed is that too much communication already occurs. This leads to subjects being 'oversold' with the consequent setting off of a 'band-wagon' effect before appropriate evaluation of the new materials has taken place. Already in the Leicester area a number of reports and newsletters related to limited areas of the curriculum are circulated by LEA's and the School of Education. A joint comprehensive area newsletter, which gave simple factual information about what was going on, might serve a useful purpose.

It has so far been suggested that the key to curriculum improvement is effective team work through enlightened leadership and free communication between all the partners involved. More tangible factors which in practice are found to be significant are teachers' centres, the choice of parts of the curriculum on which to work, the re-training of teachers and operational research.

Teachers' centres are intended to serve as meeting places where courses and discussions can be held, practical work undertaken and examples of all kinds of teaching materials displayed. About 150 centres have been opened in England and Wales since they were proposed by Schools Council in 1965. There is as yet no clear pattern of development. In the city of Leicester, six specialised centres have been set up for science, mathematics, audio-visual aids, teaching immigrant pupils, books and reading methods, and art. In each case, an experienced teacher has been appointed as leader. A different form of organisation seems to be emerging in the county of Leicestershire. A primary, all-purpose teachers' centre has been established in the south of the county at Blaby and a secondary centre is proposed in the north at Thurmaston. A field study centre at Foxton caters for

field work in all areas of the curriculum. The success of the centres will depend on the degree to which the enthusiasm and creative energy of teachers can be sustained. Mushroom growth of centres is clearly pointless, but maximum support for any group of teachers who are prepared to become involved in curriculum improvement is the responsibility of local education authorities. The Leicester University School of Education has for several years provided accommodation and some clerical and financial help for approved work by groups of teachers. During last session twenty curriculum study groups explored a wide range of problems with encouraging creative consequences. The conventional short courses of lectures keep teachers informed and interested, but they do not usually provide the other conditions necessary for involvement in the renewal process, namely, commitment and resources. The Leicester groups work out the new ideas together and improve them as a result of trials in their own schools.

Since there is no evidence that at the national level the selection and sequential development of curriculum changes are being rationally planned as a whole, it is not surprising that at the local level, although growth is vigorous, it is piecemeal and relatively unplanned. Thus, known projects in Leicester city and county schools which are in progress or imminent include participation in the Nuffield/Schools Council **Primary Science** and **Mathematics Teaching Projects**, Nuffield Foundation **A-level Biology** and **Physical Science Projects**, Schools Council Project in **English for Immigrant Children**, Schools Council Project in **Applied Science and Technology**, and Nuffield Foundation **Resources for Learning Project**; as well as a great deal of development work in preparation for raising the school-leaving age in 1970. All this activity reflects great credit on the teachers and advisory staffs which must not be denigrated in any way, but we should ask ourselves if the emerging curriculum as a whole represents the sort of balance which seems likely to achieve the desired objectives.

During the early years of teaching, newly-trained teachers are not likely to be effective agents of change. The retraining of experienced teachers to use the new curricula is a vast problem which cannot be met by the existing facilities for the provision of teachers' courses. Some LEA's, particularly in the city of Leicester, are diverting resources to in-service work in an attempt to meet this problem. We must not forget that the effectiveness of the new curricula

will depend not only on the quality of the new materials but also on the training of teachers to use them.

Finally, a word or two about operational research. Real innovation takes place in the classroom. Better decisions are more likely to be made during the

development of an innovation if an empirical approach is used. Curriculum development should be based on rigorous experimentation, not vigorous persuasion. One of the rôles of university schools of education can be to encourage this approach.

## Comprehensive Schools Committee Research Advisory Panel

The CSC has set up a Research Advisory Panel to help teachers in comprehensive schools who want to undertake enquiries within their own schools. The panel members are:

**Professor S J Eggleston**, Education, University of Keele.

**Douglas Holly**, Education, University of Leicester.

**Brian Jackson**, Director, Advisory Centre for Education

**Professor Alec Ross**, Educational Research, University of Lancaster.

**Professor Brian Simon**, Education, University of Leicester.

**Professor Philip Taylor**, Education, University of Birmingham.

**Professor William Taylor**, Education, University of Bristol.

**Professor Peter Townsend**, Sociology, University of Essex.

Readers of *Forum* who are interested and need advice on research design and suggestions of particular help that published professional research may offer should write the Panel at 123 Portland Road, London, W11. This service is offered to CSC members but membership may be obtained at the same time, the fee being one pound per year. In this way it is hoped to stimulate research at 'grass roots' level which, while it may not attain to the sophistication of professional research under the direction of a university or foundation, will nevertheless be soundly based and valid within its limitations. In particular it is hoped to encourage research into proposed innovations and outstanding problems within the comprehensive school.

## Forum Conference

A residential conference is being organised by **Forum** for the weekend 21 and 22 September 1968, commencing on the Friday evening, 20 September.

The conference will be concerned with the move towards non-streaming and new forms of grouping in both primary and junior secondary schools. Questions of the content of education and methods of teaching in the new circumstances will be discussed. The conference will provide the opportunity for intensive discussion of the kind of issues that **Forum** has been concerned with over the last few years.

The conference will be held at the University of Leicester.

Full details as to the programme, speakers and discussion group leaders will be announced in the next (May) issue of **Forum**.

Anyone who wishes to participate, particularly those who have experiences which they wish to communicate and discuss at this conference should fill in the form below and return it to the Editor, **Forum**, 71 Clarendon Park Road, Leicester.

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# LANGUAGE IN LIFE

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The questions and projects included in each section of this book are designed to encourage original thought and composition and to relate English with other subjects in the curriculum.

The book is not meant to be used as a fixed programme of work. The material can be used in any order; it is intended to aid and stimulate the teacher, not to replace him.

*Language in Life* is for use with pupils in the third and fourth forms of secondary schools, and could also profitably be used by those in the fifth year taking CSE and Newsom courses.

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# In-Service Education in the South-West

## Jack Walton

Mr Walton, as Senior Staff Tutor at the University of Exeter Institute of Education, is responsible for in-service courses in that area. He was previously headmaster of a rural comprehensive school in Dorset.

In-service education describes in broad terms all further education of teachers which takes place during the period of their employment in the profession. The term includes both part-time and full-time courses. No doubt some form of in-service education has existed as long as there have been teachers. The McNair Report of 1944, however, gave strong emphasis to this aspect of a teacher's life. The Report was responsible for the initiation of University Institutes of Education whose fundamental task was to raise the level of education in teacher training colleges, and to provide for the continued education of teachers after they have gained their initial qualification. Most universities accepted this new responsibility, perhaps in certain cases somewhat grudgingly. The Institutes of Education became the umbrella under which all aspects of teacher education found their place, and were each responsible for a region known as the Area Training Organisation. In-service education was just one of the educational fields in which the Institutes were interested. It must not be forgotten that there were also other providers – the LEA, the Ministry and the teachers' organisations.

Since the McNair Report there seems to have been a tendency for many Institutes for various reasons to emphasise more the provision of full-time courses of the diploma type and centralised provision of shorter courses, than work based on schools or localities within their ATO. In a way this development may be seen in very recent years as a natural reaction to the increasing responsibility for in-service provision accepted by other organisations.

The ATO of the Exeter Institute which covers Dorset, Exeter, Plymouth, Devon, Cornwall, the Scilly Islands and Jersey has tended, however, to reject the total centralisation of provision. The very fine school based work of Mr C D Butler, Staff Tutor and Senior Staff Tutor from 1949 to 1966, reinforced this conception of taking the university to the many schools so widely scattered throughout the South West. Nevertheless in spite of a tradition of peripatetic work Exeter Institute has had to consider the possibility of moving out of the field into the university lecture hall.

This possible reconsideration of policy can be best

understood in the light of the expansion of in-service provision by other bodies – particularly the LEAs – during the last two or three years. Primary school developments, secondary reorganisation, curriculum enquiries have led local education committees to consider very seriously their own rôle in the increasing need to re-educate their teacher employees. Since the publication of School Council **Working Paper No 10** Teachers' Centres have appeared throughout the counties. Suddenly in an ATO like that of the Exeter Institute the need for the providing bodies to define their rôles has become urgent, otherwise unnecessary and harmful tensions can arise.

The University of Exeter was formerly called the University College of the South West. Whilst it has come of age it would be unfortunate if its future development was planned in terms of isolation from the region from which it has sprung. It has a responsibility not only to its young undergraduates but also to a region. Considered in these terms it should be prepared to serve local needs both inside and outside its walls. Exeter perhaps more than most universities has regional affiliations. This tradition together with that created by the former Senior Staff Tutor and its present Director, Professor Pedley, obviously caused any suggestion involving retreat from the field to be more critically examined than elsewhere. More important perhaps than these considerations was the real need for teachers to feel that whenever they wish they can call on the services of the Institute of Education.

The Exeter Institute therefore has sought rather to redefine its former role than abandon it. This redefinition is not yet complete, but its lines of development are becoming sufficiently clear to permit some account to be given.

As a result of its spread over county boundaries it can more easily than any single LEA act as a co-ordinator of all in-service education within the ATO. During this last year a co-ordinating committee for in-service education in the South West has been formed. This committee represents all parties interested in in-service education, and hopes as its experience increases to serve as a forum for ideas, and also perhaps as an instigator of developments of interest to the whole region. In addition it has recently

been asked to consider the provision of an educational information service for its constituent members through some form of publication. This committee is served by those members of the central staff of the Institute who are concerned in particular with the shorter type of course.

However useful a co-ordinating committee might be, the day to day task of the Institute must be to continue working with teachers, but perhaps in rather a different way from that which operated previously. Traditionally the provision has tended to include a large number of single lectures or 'one night stands', and a smaller number of consecutive lectures taking place every week for varying periods. Usually these lectures have been an hour in length followed by discussion. In addition, some weekend residential courses have also been provided. Should this continue? In what way would lectures of this type conflict with or duplicate the increasing LEA provision? Again, most people now agree that lectures are often quite worthless unless they arise from some real need. The Insti-

tute cannot afford to waste its none too rich resources and must therefore decide what it can do most efficiently.

The answer lies with the teachers. Today the pressures upon teachers are greater than ever before. Very good teachers with long experience are having to re-think what may amount to their whole philosophy of education. The LEA through their new Teachers' Centres and with the help of advisory staff are attempting to provide for the day to day requirements, and create an environment of discussion. The staff of the Institute concerned with in-service education have been led to reconsider the best use of their resources. The provision of 'package deal units' related to the more pressing problems - problems which may require a deeper treatment than can normally be given by the LEA - is one method. Religion and values in the school; curricular reform in secondary education; the integrated day in primary education; the organisation and management of schools - these are some of the areas in which the Institute may offer a particular expertise. These units will consist of tutors and materials which can then be made available and despatched to schools or teachers' centres on request. They can of course be tailor made to fit local requirements. From discussion arising from such meetings as have been arranged, working parties of teachers may develop; aiming to produce some final product - a research paper, resource material, curriculum change - all of which may not only be of use to themselves but to their colleagues elsewhere.

More continuous provision in some residential centre is perhaps more valuable. Here the emphasis is not so much based on lectures but on group discussion and simulated situations. It is going to be more and more necessary to release teachers in school time to give them the opportunity of re-thinking away from their everyday duties. Immediately problems of replacement are raised and this may suggest a re-consideration of the organisation of initial training. If more students were based in individual schools not only would they benefit, but at appropriate times teachers could be released for in-service courses.

Also within the scope of in-service education are occasional - perhaps once a year - one term courses dealing with some subject in considerable detail. These of course will be university based and will provide the opportunity for tutors and teachers to examine with some precision a problem difficult to solve or even define unless the time is available. *(continued)*

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Full details and application forms from

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Applications as soon as possible and not  
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# Diary of a Project

## John Hanson

As Special Assistant to the Director of Education for Oxfordshire, Mr Hanson has been concerned with curriculum development and secondary school building programmes in the county. Until this secondment two years ago he was teaching in a county secondary school.

The Oxfordshire scheme for curriculum development was introduced on a limited basis in September, 1966. One of the four topics chosen for study and development was 'environmental studies' or humanities courses in the 11-13 age range. Although several county schools had already introduced courses integrating two or three subjects at First Year level, this field was still virgin territory. The project therefore started with no clearly defined target and with a curriculum development scheme for which there was no real precedent at secondary level allowing us to compare progress. With limited resources, Oxfordshire had gone for part-time co-ordinators who would meet secondary school teachers in their area rather than for teacher centres. In the circumstances, I have no doubt this was the better choice.

## September, 1966

Preliminary meeting called by co-ordinator in one county area to discuss question of new First Year courses. Each school well represented. Agreed that not all is well with existing syllabuses and methods, though one or two heads of department see no reason for radical change. Agreed that schools need to communicate more freely. Worthwhile forming a team to study question of new courses? One senior teacher says he came hoping to be given details of new courses. No syllabuses on a plate. But decision taken: two schools agree to form team. No commitment to method or subject content. Starting off with clean slate.

*Note:* A project must start from fundamentals. Teachers who have themselves been through the long nights of doubt and sorrow that precede radical change are more likely to

work with conviction and success than those converted by the slick salesman who arrives at the school in a shining bandwagon. A project is a vehicle for creative discussion, not for imposing a set plan of ideas.

## October

Important to infuse as many ideas as possible at start. Charity James from Goldsmiths' College and Peter Mauger from Nightingale School (now at Coventry College of Education) come down for separate after-school meetings on 'interdisciplinary enquiry'. Much controversy aroused.

## November

Several meetings of study groups (two heads, ten teachers and co-ordinator). One or two visits to schools outside county.

## December

Progress continues. Gradual change from subject centred to child centred approach. A happy Christmas.

## January, 1967

Agreed that integration of humanities subjects gives advantages. Agreed also on value of team work and active learning methods - learning how to learn. Ideas multiply. Suggested areas for study: 'Men and Rivers', 'People on the Move', 'Man explores his world'. Aims defined. A happy New Year?

*Note:* Teamwork within the school. Teamwork between schools. Very important. But one person needed to co-ordinate developments and this is largely an exercise in human relations. Sympathetic and active support of head teachers essential.

(continued)

Much of value will be contributed by the teachers in all aspects of the work described above. A further responsibility of the Institute should be to make results of these enquiries available throughout the area. It is important that teachers write and publish. A series 'Themes in Education' provides this opportunity.

Perhaps the most important lines of development

have been illustrated - much has been omitted. Certainly in the branch of in-service education associated with shorter courses more co-operative work with teachers than ever before needs to be done. Whilst it appears that some Institutes may be moving out of this area of work, such is the increasing pressure in the South West that more rather than less staff are required.

## **February**

Details of classroom practice for new courses still vague. Must avoid the woolliness of many IDE schemes. Much emphasis given to structure of courses. Complex system of assignment cards envisaged to ensure that pupils all cover essential points.

Interim report on progress sent to all county schools in bulletin produced by the Communications Centre.

Three HMIs invited to attend team meeting and comment. Result – most of proposed structuring material thrown out in favour of greater emphasis on creative activity. Second bulletin hastily sent out to schools.

Michael Armstrong from Resources for Learning calls in.

*Note:* Communications Centre established this month as an integral and central feature of curriculum development scheme. New office furnished with necessary facilities and efficient secretary.

## **March**

Four schools now committed to new approaches in First Year next school year. Meeting between team and interested teachers in several other schools. First efforts to prepare resources in detail. Book lists, etc. Beginning to count the cost.

One of the team schools in major building programme. Headmaster agrees that First Year Centre needed, specifically designed for new ideas. Thus architectural planning follows close in steps of educational thinking.

*Note:* Continuity over primary-secondary now an important issue. Primary schools visited. Advice now taken from primary colleagues.

## **April**

Team schools now planning organisation needed for September. Two vacancies given to posts in line with this. County Library eager to develop further their service to schools, supplying as many books as they can.

Definite suggestion of support from **Resources for Learning Project**. Meeting arranged.

*Note:* A full year definitely needed for planning such radical change. A project can be stifled by absence of financial support. Isn't there a scheme for trading in old class textbooks?

## **May**

Communications Centre acting as minor resources centre. Help being given by county audio-visual centres in production of aids. County Museum will help.

Timetabling season in full swing. Eight schools now committed to new or revised integrated courses in First Year. Six to receive limited support from curriculum development funds.

Meeting to plan project support by **Resources for Learning Project**. Four schools invited and agree to form joint team to try out and evaluate ideas. Two original team schools involved. Team of six teachers to be timetabled free for half day together next school year, planning for term course in Summer Term, 1968.

## **June**

Too busy for words.

## **July**

Increasing contact over county and with other areas. Day conference held under aegis of Oxford Institute. Talks by local teachers, exhibition of aids and ideas. 90 attend. Six Authorities represented.

A teacher's final thought for year – 'We've discussed as much as we can. We shan't get any further until we've tried these ideas out!'

*Note:* Much curriculum development today starts at national level. This project began at grass roots. Local teachers have developed ideas and shared them. An organic growth.

## **September, 1967**

New approaches start. Re-examination of earlier integrated courses. Communications Centre produced report on twelve months' thinking. Interest now swelling in reappraisal of whole problem of 11-13 education and continuity from primary stage.

*Note:* This is the diary of one project. It is still growing. Of course, no two situations are alike. The growth of any project should be governed by the schools and teachers involved.

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# Vertical Grouping in the Junior School

## Eric Linfield

Mr Linfield is a Senior Lecturer in Education at Newton Park College of Education and was previously headmaster of a Hampshire junior school.

Many of the current projects concerning curriculum development in the junior school need the support of careful investigations of methods of grouping within the school. If the school is to remain the basic unit of organised education in this country, the vast spectrum of variations in internal school procedures must be carefully analysed for the benefit of the children in these schools. Every educational encounter, teacher with class, tutor with seminar group, supervisor with student, depends upon a social relationship. There seems to be considerable evidence now that the non-streamed school provides a community of learning and living in which all children are encouraged to develop their personal and social potential irrespective of the differing roles which they will ultimately play in society when they leave schooling institutions. My own personal experience in and knowledge of a considerable number of non-streamed schools suggests that these vary in style and atmosphere from community to community, but overall one always detects a similar sense of purpose where every child matters. Many of us have thought for some time that the grouping of children in classes based on certain administrative criteria or on chronological age needs examining. Psychologists have stressed the importance of the child's peer group but the child also needs social relationships which extend beyond his peer group. In infants' schools, considerable progress has been made in the development of family grouping arrangements within the school. In these schools where the classes have an age range of eighteen months to three years, the younger children adjust to school more easily and the older children learn to help their classmates who are younger than themselves.<sup>1</sup>

In urban junior schools, some headteachers and their staffs have begun to experiment in vertical grouping too. Most of these would prefer to use the term 'family grouping' rather than 'vertical grouping', especially as they stress the basic sociological notion of the family. The school exists to further the family idea, to make the child realise that he or she is a member of a much larger local, national and international family than his or her own biological family. Non-streaming is based on a social philosophy of non-segregation of children within their peer groups;

vertical or family grouping seems a development from this basic position so that children realise their social, cultural, emotional and intellectual relationships to older and younger children. The vertical grouped organisation is a two-way process or more accurately a multi-way process. I have visited several family grouped junior schools in various parts of the country but the following reports are limited to two primary schools in Bristol which I visited in the early part of the Summer term 1967. Perhaps other teachers and headteachers in other parts of the country who are experimenting with family grouping in urban schools would like to write to me with some details of their work. The article is likely to be followed with other reports; the next **Forum** Primary school conference will certainly be dealing with organisation procedures including family grouping.

The two schools which I have called School A and School B are situated in the midst of growing and developing communities where housing, industry, community services and schools are not far from the amenities of large cities and the beauty of the countryside. In England, we are fortunate in having the historic and aesthetic so close to our school learning environments if we are prepared to explore round and about the school. School A is a junior-mixed school, in a new pleasant building, consisting of twelve classes and one special class for giving help to children on a daily basis, with a part-time assistant teacher. School A has a family-grouped infants' school on the same campus. School B is a primary school with six vertically grouped classes; two classes of 9-11s, one class of 6-8s, two classes of 5-6s, one of rising 5s. The patterns of the vertical grouping varied from School A to School B; this was partly the result of School B having infant classes in the same building.

Yates calls family or vertical grouping planned heterogeneous groups.<sup>2</sup> He gives the following procedural definition of interage or multiage grouping. 'This procedure involves a deliberate attempt to group pupils of different ages for instructional purposes. The spread is over several years and is far greater than would be found normally in the graded classroom. Such grouping aims at enabling older children to learn by helping younger ones, while the latter, in

turn, profit from the simulation of the older ones. Groupings are perceived as more natural approximations of family groupings and social growth and maturity are supposedly increased.' So far as I can discover, and this certainly applies to the conversations which I had with the Headmasters of the two schools visited, the rationale for family grouping in junior schools springs from two main sources of evidence.

(a) reports of work in family grouped infant schools together with a considerable number of conversations with teachers and head teachers in these schools and some visits to make personal observations in infant schools where family grouping is established.<sup>3</sup>

(b) the two, three or four teacher village school where classes already have interage groupings, and where, as Brian Jackson shows in his statistics, the question of streaming or non-streaming is rarely posed. So far as I could tell, Schools A and B owed more to the urban infant school organised flexibly by design than to the inevitable flexibility of the smaller rural school. In Oxfordshire, where some experiments in vertical grouping in larger junior schools is progressing, the influence of the well-organised flexible village school has played an important part in supplying the evidence for further experiment.

**School A:** I visited two classrooms and spent half a morning in each. The first classroom that I spent some time in had a male teacher, where a very good relationship with the children had been established. The ages of the children varied from nine-plus to eleven-plus and there were thirty-nine children there. After assembly, the children gathered around their teacher sitting on the floor beside him. The classroom furniture was arranged in an informal way so that there was space for the children to gather round. He spoke to them about *Ladybird* books and produced forty which he had recently chosen for the class collection of topic books. These were introduced with some helpful comments and some children decided to begin reading these as their first task of the day. Gradually, the work began to take shape as the teacher quietly assisted the children in setting about their varying tasks. In one corner, two girls began painting, and near them three others were busy writing poems. A group of seven boys near me were reading a selection of the *Ladybird* books. The children moved easily about the classroom and there was purposeful activity all the time. I was very interested to see one boy found two empty paint tins

in the cupboard and began making the telephone shown on one of the pages in a *Ladybird* book called **Toys and Games to make**. Another girl was making a list of countries and their capital cities, and adding their distance in miles from London. Overall, one noticed a most pleasant orderly collection of learning situations with no apparent differences in the work attitudes of the older or younger children.

In the second classroom, with a young probationary year teacher in charge of first and second year juniors ranging in age from seven-plus to nine-plus, the children were much more communicative than the older children. Some came up to me and told me about their work without waiting for me to come round and ask them. Here the desks were grouped in five main groups and the workshop buzz was slightly higher than in the previous class. Two boys were working on graphs, in another group five girls and two boys were writing stories, five boys were finding the distance between two places on a road map, two boys were in a corner making puppets, and one little girl's careful watching of the hamster was very compelling. The classroom walls abounded with visual aids and charts of all kinds and one felt that the atmosphere was conducive to interesting and worthwhile learning.

In both classes, the teacher was available in many varied situations in the classroom so that there was no fixed point at which the teacher operated. There was a teacher's desk but this was used as a resources centre and not as a static focus for the teacher. Both these classes were well organised yet flexible and seemed very similar to non-streamed classes using the integrated day. It did seem that both teachers had more demands made on their assistance than one would normally expect in a non-streamed class without such a wide chronological age span. The Headmaster of School A was very keen to use teacher-aides and was already involving parents in school assistance; he had asked the mothers to help with book-repairing, for instance, and this was proving a very useful social operation. He stressed the role of the school as a centre for community activity and the importance of informal staff/parent contact. He saw the family-grouping system in his school as an essential basis for accommodating the varying learning speeds of children; he felt that 'more strata were provided in the family-grouped class so that each child can find his own layer at different stages of his development.'

**School B** is a new primary school with a most

attractive design. I visited two classes; one, with a woman teacher, had an age range from six to eight years, the other, upper juniors, with a young man teacher, age range ten to eleven years. Both classes had College of Education students working in the classroom on the day of my visit, but in both cases the work atmosphere was stimulating. In the first classroom, a small group of lower juniors were experimenting with paper-making in the corner sink, helped by the mature student teacher. During the previous week, the group had visited a nearby paper-mills, taken by the Headmaster in his own van. Four children were engaged in word games, four were painting in a corner of the classroom, two girls were making butterfly mobiles, another group were working on mathematics work cards, some girls were writing poems and stories and occasionally they stopped to help a younger boy with his word difficulties in writing some simple sentences depicting scenes on another work card. The classroom was festooned with a variety of paper kites, which had been made on an earlier project concerning Wind. The class teacher went quietly and efficiently around the classroom, pausing wherever her help was needed. Both she and the headteacher felt that the three year age span was too great considering the overall numbers in the class - forty-one. In the upper junior class the children were preparing for their forthcoming visit to Belgium, an organised school journey. Not all the class were going, but it was obvious that all were sharing in the experiences of preparation. The student teacher was taking a group of eight children with some creative writing, others were painting and drawing, and a small group were working with the teacher in the French shop corner of the classroom. I was intrigued with a large working model of a windmill which some boys showed me - the result of considerable ingenuity and effort. It would have been impossible for me to detect the older or the younger children in this class, except by awareness of one or two girls' early maturity in physical development. Overall, the class seemed to be a purposeful family, helping and assisting wherever help was required, and the displays of work all around the classroom showed the extent of their enterprises.

Vertical grouping in junior schools must be investigated more thoroughly than any observer can do on his own. One needs to be many-eyed, many-eared and many-limbed to observe a flexibly grouped class. We must elaborate new techniques of evaluation

where factors such as size of classroom, type of furniture and equipment, age and experience of teacher, display and storage space, book and library provision and so on can be isolated as important factors in the learning-teaching situation. We need above all procedures for all-round assessment so that teachers and children can benefit from forward-looking policies with more awareness of possible potential.

<sup>1</sup> *Vertical Grouping in the Infants' School*, M A Mycock (Unpublished M Ed thesis, Manchester University, 1966). Summarised in *British Journal of Educational Psychology*, February 1967.

<sup>2</sup> *Grouping in Education*, ed Alfred Yates (UNESCO/John Wiley, 1966).

<sup>3</sup> *Family Grouping in the Infants' School*, Lorna Ridgway and Irene Lawton (Ward Lock Educational, 1965).

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# Discussion



## Esperanto and Culture

I write to support Mr R Markarian's plea for Esperanto as a worthy school subject. The image of Esperanto may have suffered somewhat in educational circles from well-meaning propaganda by a few culturally inadequate Esperantists, but its real cultural possibilities are tremendous and extend to many children who are not capable of profiting from a course in French or another national language. My own experience as an examiner for the CSE in Esperanto has strongly confirmed my faith in it.

Esperanto is not only a language of great logical simplicity and pleasing euphony, but speedily opens a door to an astonishingly wide range of richer cultural and personal experiences through correspondence, travel and a substantial original and translated literature with a good variety of general and specialist magazines. Moreover its notable clarity can improve for many people the general interest in the exact meaning of words.

Having seen something of the pathetically inadequate results achieved by many children after several years of hard work at a modern national language and having also seen what children of very limited linguistic ability can do with Esperanto, I deplore the apparent indifference or even hostility of many authorities to further investigation of the possibilities of this subject.  
M BOULTON, *Principal, Charlotte Mason College.*

## CSE in an Unstreamed School

A R Lynch (*Forum*, Vol 10, No 1) is not very helpful to the cause of un-streaming when he talks so loosely about 'passes' in CSE. It is not pedantry on my part to insist that this kind of language is meaningless. CSE is *not* a pass-fail examination. Candidates gain a certificate if they achieve Grade 4 in any one subject. If in some other subject a candidate is awarded a Grade 5 *as well* this, too, will be recorded on his certificate, but not if he has no Grade 4 achievement.

Grade 4 indicates 'average' attainment. Is this what A R Lynch means by a 'pass'? If not, what does he intend us to understand by 103 'passes' in CSE? Clearly he doesn't mean 103 Grade Ones - he claims only 13 of these.

Please, for the sake of CSE, unstreaming, and *Forum*, do not let this kind of thing slip past the editorial blue pencil. It might make readers of *Forum* wonder whether CSE is yet understood by those who use it and commend it.

H OWEN, *Essex.*

(The editors disclaim responsibility for contributions submitted for discussion, but welcome comment and correction. *Ed.*)

## Examination Confusion

'Examining in universities' is the subject of a special number of the *Universities Quarterly* (Vol 21 No 3, June, 1967) of interest well beyond the university world. One article examining the psychological assumptions underlying the use of examinations (by A N Oppenheim, M Jahoda, R L James) comes up with the following:

'The assumption that forced regurgitation of knowledge under stress is *predictive* of future performance.' Assumptions concerning mental growth and development based on the following analogies: 'Culinary: we seem to regard our separate courses rather as the ingredients in a recipe which have to be beaten together (integrated) and then made to fuse or stew or simmer over considerable heat . . . Failures are like the burnt bottom of a cake, somewhat disgraceful . . .' 'Horticultural: here we talk about maturing, ripening . . . fertile ground, etc. Some of our analogies seem to have been taken from specific processes, eg, wine-making, where a slow fermentation process is required. We use similar phrases for our best students and our best wines; certainly we reject any idea that education is merely the filling of casks or the mixing of ingredients.'

'Packing station analogies: here we refer to the "gatekeeping" functions . . . which are rather like grading eggs or fruit - partly for the benefit of the consumer, and partly to fix the price of the product . . .'

It is remarked that in this respect university examinations differ from 11+ or GCE which 'we regard more as switching-points on the railways, which are used to assemble carriages to make up trains and put these on the right rails to make sure they arrive at their destinations'. By contrast, with the 'gatekeeping' function, 'the university has a

*monopoly* position, like the packing station, and this monopoly position is partly what we mean when we speak of academic freedom'.

Among other assumptions – that pressure is required, that anxiety is necessary, that results should be distributed in a certain way, that papers should be uniform for any given year group. It would be helpful, it is concluded, if – pending empirical testing of these assumptions – universities could decide which they wished to maintain and which to abandon.

J SIMON.

## No New Trend

I find the article in your autumn 1967 issue, 'A New Trend in Teacher Training', rather irritatingly amusing. The words 'new' and 'novel' are repeated throughout, as if, in fact, the training of teachers in technical institutions were a pioneering effort. At one point occurs the rather offensive and certainly incomplete statement: 'Since the early 1960s several technical colleges have dabbled in education courses of various kinds, but these have had no impact on the official college of education world except that of disdain or amusement.'

Mr Dalrymple, as a Chief Inspector of Schools for an important borough of London, ought to know his educational history better.

It was in 1930 that this college of education began its life as a department of the local technical

college at Loughborough. The initiative was due to the co-operation of three distinguished Leicestershire educationists, Dr Herbert Schofield, Principal of the College, Sir Robert Martin, Chairman of the Education Committee, and Sir William Brockington, Director of Education. An earlier effort in 1921 to train ex-servicemen as handicraft teachers had petered out. Mr J W Bridgeman was appointed as head of the new department and was in charge until his retirement in 1963. The original purpose of the department was to train teachers of handicraft, but the work was conceived on sound educational principles from the start. Students studied education, handicraft and academic subjects. Assistance for some of these subjects was gained from the staff of other departments of the technical college and from the University College (as it then was) of Nottingham. In 1931 began the Loughborough Summer School with Mr Bridgeman in charge, an enterprise which has achieved some name in teacher circles. In 1934 a supplementary course in handicraft and in 1936 another in physical education was started. 1945 saw the beginnings of the course of initial training in physical education and in 1948 were added post-graduate training courses in handicraft and physical education.

I came to the department in 1946 to take charge of Education. At that time it was still entitled 'The Department for the Training of Teachers'. In 1949 it changed its title to 'The East

Midlands Training College', though it still ranked as a part of the technical college. A year later it became autonomous, with the name of 'Loughborough Training College'.

It is not for me to sing the praises of the college. All I can say is that it is perhaps my chief source of satisfaction in my professional life to have known and worked with the four great men who established it.

One important point remains. The Pelham Scales for training college staff came into being in 1945, and from 1946 certainly, I myself and all the staff of the then Department were paid on those scales. There is, therefore, a precedent for paying technical college staff engaged in teacher-training the same salaries as those in colleges of education.

J HILL, *Deputy Principal, Loughborough College of Education.*

## B Ed Addendum

Since the publication of my article in the last issue of **Forum**, it has been confirmed that London is now offering the B Ed at Honours level. This amends also the information published in **Which B Ed?** and in the ATCDE's Interim B Ed Report of June, 1966, which reports the London B Ed as being classified as a pass degree only.

It is also confirmed that Lancaster University is now offering an end-on Honours B Ed as from this year.  
G PRICE, *Chorley College of Education.*

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## Forum's New Design

The Editorial Board wishes to thank Mr Leslie McCombie (of Leslie McCombie & Co Ltd - Design Consultants) for his help and advice in preparing the new design of **Forum**: help that was freely given by one who supports the general policy **Forum** has advocated over the years.

First reactions to this new design have been enthusiastic. Mr McCombie's professional expertise has enabled us to present **Forum** in a style consistent with modern taste and appropriate to a journal concerned to promote discussion of new trends in education.  
*Ed.*

# Thoughts on the Nuffield Junior Science Teaching Project

**N F Newbury**

Until recently Mr Newbury was Director of Education at St Helens. Author of numerous science textbooks, he is now Research Consultant to a publisher and serves on the Primary Science Sub-Committees of the Nuffield Foundation and the Association of Science Education.

The Nuffield Junior Science Teaching Project was set up and financed by the Nuffield Foundation. Its main aim is to provide all possible help for teachers of children aged five to thirteen who are learning science. Its final findings were not published when this paper was prepared but they are based on 'three years intensive study of the problems facing teachers in schools'. They stress the importance of using the child's own questions and the role of the teacher to remain helpfully in the background while the children pose and solve meaningful problems linked with their environment. Stress is laid on the importance of children being 'put in the way of learning' rather than merely being taught.

It is impossible at this early stage to present a systematic assessment of the values derived from the introduction of the Nuffield Project into our schools. Indeed, although precise quantitative evaluations of the immediate and long-term benefits is a difficult task, a plea is made for some form of continuous evaluation and for full support by the School Council and research workers.

The title above indicates the theme of this paper and the points made below are intended to encourage discussion and investigations. The author feels that the leaders of the project should regularly call together their team to report progress and act as counsellors.

It must be emphasised that the Nuffield Project is an experiment and is only *one* way of teaching science. The speed with which it has been accepted – often with insufficient evidence – by the Department of Science and Technology and Local Education Authorities is hardly typical of the normal development of education in this country. It should be noted that at recent meetings of interested teachers, both Scientists and non-specialists claim that the so-called Nuffield material is not new but is a summary and extension of the teaching methods used by good teachers for the last fifty years. Indeed, the individual and group method so successfully used in the best of our infant schools sets the same pattern. Montessori and Froebel methods, modified Heuristic and Discovery methods were in use long before the Nuffield Project began. This statement was frequently en-

countered and challenged by members of the Nuffield team.

## Topics for Discussion and Research

Many challenging statements have been put forward which need thorough investigation. For example, that topics should be based on the interests of the children only; that the investigation of a particular topic should continue until the child wants to begin another one; that no syllabus, scheme of work or curriculum should be used; that investigation, discovery or instruction cards should not be used. There are questions too, that, although dealt with in the publications, still require further amplification. These include how the teacher may build up a personal knowledge and appreciation of the Science background needed, methods to ensure that all members of a class actively participate, methods of changing from the traditional to the more flexible methods and using Science as a basis for an integrated course. The relative value of both traditional and improvised apparatus, methods of recording results, the relationship with reference books, the integration of Science and Mathematics and other subjects, benefits carried on to the Secondary stage, how far the Scientific attitude develops in the child and at what stages, a comparison of the methods and contents recommended in the Nuffield Foundation publications with those actually being used in our schools today, all need consideration.

It is true that many critics of the project do not read the Teachers' Guides carefully enough but worthwhile criticism should be considered and the team allowed to reply since, in many cases, similar difficulties were encountered during their field work.

One unusual development, partly due to pressure by certain authorities on accepting Nuffield ideas in their entirety, is the development of structured methods. Science Research Associates' ambitiously devised Science Laboratories, programming, kits of apparatus, investigation cards and radio and television programmes may be mentioned. One must assume

that children are so adaptable that they can switch from structured to non-structured approaches and survive in spite of all the changes made by teachers and other educationists and that a true assessment of the relative value of the different ways of learning Science becomes almost impossible.

## Advantages of Introducing Nuffield Junior Science

The financial and moral backing of the Project through all the Nuffield resources, including publications and courses, has aroused an interest which any individual or lesser association would have found quite impossible. It is a pity that after such an excellent beginning there has been a gap in administration which has slowed down, in some instances, the development of Teachers' Centres. The creation of these Centres, primarily for Science and Mathematics, has brought together, often for the first time, teachers of all ages and experience to discuss teaching problems with colleagues and other experts. This has been one of the most valuable stimulants in the in-training of teachers in recent years. Local Education Authorities have generously released teachers during school time and supported the development of the Nuffield Project both financially and educationally. In these Science Centres, misconceptions and alternative ways of interpreting the statements in the Project can be clarified and problems worked out. The occasional assumption, too, that its adoption means a return to teaching Nature Study only must be rectified.

It is too early yet to find out if projects, centres of interest, course work or topics developing in CSE courses can successfully be linked with the pioneer work at the Primary Stage but there is some evidence that much help is derived from the early introduction of these methods.

It must be stressed that completely new ideas produced by Nuffield Primary Science include the need for Science Centres, the development of 'open-ended' topics, emphasis on sensible if unusual ways of recording, the study of case histories and emphasis on integration. As in other progressive approaches, the Nuffield publications stress the need for individual and group working rather than class-teaching. It is assumed that the methods are child-centred and include Physical Science as well as the traditional material. The

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child is expected to have wide experiences and personal involvement with the environment. The teacher realises the need to supplement first hand experience with information books and will advise, inspire, encourage and guide rather than teach and instruct. Great care should be taken, however, to make sure that the child does not fail too often or he will become discouraged. This seems to be one aspect not solved by this Project. It must clearly be said that Science is not a subject learned in a laboratory at a particular time but it is a method concerned with the child himself, his home and school and, later, a wider environment. Some facts and principles are certainly learned for future use but procedures, skills and methods of wider value are of primary importance.

Some teachers disliking the Nuffield aims have returned to their former ways but, on the whole, a new atmosphere for both child and teacher has been created in the class-room. Time-tables and syllabuses tend to be abandoned and the children work purposefully in small groups while the teachers stay in the background ready to give help and advice. The final word has not, of course, yet been said but educationists agree that many children are now achieving remarkably high standards in their verbal discussions and written accounts of Science topics and are developing attitudes and reasoning powers far beyond what is normally expected.

## **Children's Interests**

Authorities agree that learning should be based on the interests of the children. Some teachers build up these lists of interests, group them under appropriate headings and grade them according to their difficulty. In the more incidental and less systematic method, permanent and creative interests should also be linked strongly. Far too few quantitative investigations have been carried out in this country on what children want to know but the relative merits of obtaining these findings from questionnaires, tape recordings, verbal questions, direct or indirect methods, analyses of the reading of information books or subjects consulted in an encyclopedia are beyond the scope of this paper.

A preliminary statement from the Nuffield Project reads 'the teaching of Science should indeed be geared to the known most common interests of children at various stages', and Plowden states 'There is good reason for allowing young children to choose within a carefully prepared environment in which choices and interests are carefully supported by the teacher who will have in mind the potentialities for further learning'. There is no doubt that interests shown by children should be fostered, recognised by authority and nourished. By such means a child takes an enthusiastic part in learning and in developing self-respect. At the same time, more precise and definite research should find out what the permanent interests of children at different ages are and these should be compared with topics included in the Case Histories.

The majority of teachers who have tried out the methods advocated seem to have benefited greatly.

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# New Methods of Assessment

## D Wheeler

David Wheeler was for five years secretary of the Association of Teachers of Mathematics and now edits *Mathematics Teaching*. He is on the staff of the University of Leicester School of Education.

Several recent contributions to *Forum* have raised questions about assessment, both in relation to curriculum development and to matters of guidance and prediction for the individual pupil. It is possible that these two purposes are interfering with each other, and we should perhaps look more closely at why we are assessing, and the uses to which we intend to put the assessments when we have them. I would like to associate myself with some of Mr Chapman's fears (*Forum* Vol 9, No 3) and suggest that his remarks demand more serious consideration than Mr Wood or Mr Eggleston offers (*Forum* Vol 10, No 1).

Mr Wood seems to be saying that he believes it unlikely that the results of assessment procedures will be abused, and that if they are it will not be the responsibility of educationists. I am not happy with an attitude which dissociates educationists from sharing responsibility for *all* the consequences of their actions, whether foreseen or not. And further, I do not think it can possibly be valid to separate educational from social or political considerations when, as Mr. Wood allows, one of the uses of more efficient assessment procedures is in more precise vocational guidance. What alarms me is the implicit assumption that the right thing to do for young people is to slot them into the society we have. We know our society well enough, I should have thought, to doubt whether the employment system has any of the flexibility that Mr Wood advises, or that we are necessarily best serving our pupils by offering detailed information about them to anyone who asks.

It is certainly not easy to see how members of a complex, mobile society can communicate with each other without sometimes using coding procedures such as 'examination results' and 'qualifications' (among others). But it is worth reminding ourselves that there may be other solutions to the communication problem. The 'special relationship' which exists between some Oxbridge Colleges and some public schools, infuriatingly unegalitarian though it is, says something about continuity between stages of educa-

tion, and something about mutual trust. I would rather see us approach greater justice by an extension of this kind of contact than through the impersonal discontinuous way of mass assessment procedures. I have little hope, however, that the determinist climate in sociology and education will permit it. I wonder if we are aware of our double-think? Inside the schools we are busy liberalising our curricula and adjusting our methods of teaching to individual needs. (Well, we say we are; and in some primary schools we are actually doing it.) In school, 'people matter'; but when it comes to transfer to higher education or employment, only labels and pigeon-holes matter. This is absurdity, however benevolent, and increasing the number and variety of labels doesn't make it less foolish. Perhaps we shall be convinced of our hypocrisy by the spectacular increase over the next decade or so in the number of academic drop-outs, delinquents and mentally disturbed adolescents.

I may appear to have escalated beyond anything that Mr Wood was saying. My chief reason for writing at all is to suggest that the whole matter of evaluation and assessment is being discussed on too narrow a front. I am not claiming to know the answers to all the questions that are raised if we do put the issue into a wider context of responsibility.

I do know, however, when I am having wool pulled over my eyes. Mr Wood's categorical assertion (1) is not supported by the Anastasi quotation he gives; there is no logical relation between the two sentences in his point (2); the assertion in (3) that making a variety of assessable observations is less obtrusive than setting periodic written assignments is unproven and improbable. None of my objections in itself destroys the case for improving assessment procedures, but my confidence in Mr Wood's arguments ebbs away at such imprecise expression.

My second plea, therefore, is that all discussions about assessment should be scrutinised to see if they are genuinely coherent or merely plausible. What, for instance, does Mr Eggleston mean by, 'In order to

improve these learning experiences . . . it is clearly useful to have available comparative measures of attainment'? (Comparisons between the same pupil's attainment after different learning experiences, or different pupils after the same experiences, or different pupils after different learning experiences?) 'One important criterion (is) that its backwash effect should not be in conflict with the best interests of the pupil'? (If the objectives are correctly defined, and the assessment procedure is correctly designed to measure the extent of their achievement, how can a disadvantageous backwash exist?) 'The broader, less definable gains which result from the kind of learning which goes on in schools may never actually be achieved'?

The last paragraph is in the nature of quibbling, but even this may be a successful device if it leads to greater care in writing and reading and thinking. Something else that can be tried is the teasing out of some of the strands in an argument. I think the following is a reasonably fair description of part of the case for new assessment procedures. It takes the form of a chain of implications.

(a) The objective of the teacher is to effect learning by the pupil.

(b) Learning by the pupil is expressed in altered behaviour.

(c) Behaviour alterations are observable.

(d) Observable alterations are quantifiable.

(e) Measurements can be used for prognosis and/or fed back into the system.

(f) Feedback modifies the actions of the teacher.

(I admit that this omits the specific definition of objectives and the subsequent matching with attainment, but I would need a flow-chart to include the lot.) If the chain is accepted temporarily (readers can construct their own improved versions), I suggest it be tested link by link. The one that snaps when I pull it is (d).

The third general point I want to make is that the argument about assessment often seems to leave things out. Some of them are superficially quite small. I want, for instance, to know what will happen when curricula *have* been evaluated comparatively. For Mr Eggleston this seems to be the main purpose of mak-

ing more accurate evaluations, and I sympathise very much with his desire to improve the learning experiences of pupils. But what is the *reality* about decision-making in this area? How are curricula chosen and how do they change? If they have not yet been chosen on the basis of comparative evaluations, perhaps the mechanism for implementing appropriate decisions doesn't exist.

But my greatest sense of omission is caused by the general exclusion of the affective aspects of assessing. Nobody seems to talk about the child's feelings; or the teacher's, for that matter. Mr Chapman's fears about the way assessment procedures might impinge on the teaching process may have been concerned with this, but neither Mr Wood nor Mr Eggleston takes this up. I guess they both genuinely believe the question of feelings is irrelevant in this context. When I reflect on my own experiences as both assessor and assessed, I know that my own feelings were not irrelevant to my actions and their effects. There seems to be evidence, particularly from Colleges of Education, that points to a substantial change in the way a teacher is regarded when assessment becomes 'continuous'. I would like to see more honest discussion of what assessment does to the person assessed and to the person assessing, and to the relationship between them. And what happens to feelings when the assessment is distanced by mass impersonal standardised procedures? (It certainly hurts the sensibilities less to drop a napalm bomb than to stick a bayonet in the guts.)

I have already said too much, and yet not enough. Most of it will be just Luddite stuff to many readers. But I know in my bones that we have been here before and that it was a disaster the last time. If one looks at the early and influential work of Burt one finds the same references to the need for objectivity and the quantification of abilities and learned behaviours, and just the same sense of a paternal concern for the welfare of the child and his place in society. That school was, we now know, rooted in the misconceptions of mental endowment. The new foundation (pun) has just shifted from one lot of sand to another.

# Transition to non-Streaming in Secondary Schools

## R Seckington

Roger Seckington is head of the Lower School at Exmouth School which is being reorganized into a co-educational comprehensive. Last summer term he was a schoolmaster fellow at Exeter University, looking at aspects of non-streaming and visiting non-streamed schools. He has just joined the Editorial Board of **Forum**.

What is really meant by the term 'unstreamed school'? There is the fully unstreamed school, using mixed-ability groups in every subject and year – a major step in social and academic re-organisation and consequently rare.

There is the school which is divided into ability bands based on IQ and attainment and which unstreams its pupils within these clearly defined limits. There is the school which has an unstreamed first year, or the school which merely has some subjects taught in mixed-ability groups, whilst the other disciplines remain setted or streamed. Some schools have unstreamed without the change of attitude or technique that seems so essential.

For years unstreaming has been one of the major topics associated with new developments in education. By itself it is not a complete solution to the problem of grouping pupils in secondary schools, but it does stimulate a re-examination of attitudes, methods and curriculum in the classrooms. At this time secondary teachers in ever growing numbers are being asked to consider 'teaching' mixed-ability groups. Most teachers accept that there is a need for change but are unsure how to proceed once the change has been brought about.

The rigidity of secondary school organisation, and the traditional concept of the teacher's role, present major problems. Perhaps most important is that the change of emphasis from dealing with classes and class teaching to dealing with groups and individuals be accepted. A change of methods from those used in teaching classes is needed when teaching groups and individuals. The teacher no longer dominates his class, controlling the content, pace and standard of their work, but develops a situation in which groups and individuals use the widest possible range of resource materials in a self-determined manner which does not so much involve teaching as learning. This is a matter of attitude as well as technique. Without the change of attitude and development of techniques for individualised and group learning, the change will be a

stagnant experiment in which the mixed-ability class will still be a class and will be taught as a class. Some schools have unstreamed and experienced social adjustment but not realised the academic reform possible.

Buildings are a factor. The vast majority are a collection of similar sized boxes linked by corridors and stairs. Each box tends to cater for a special interest. The physical environment of the secondary school rarely enables reasonably free movement and variation of group size. It is usually difficult but not impossible to make these schools more flexible. A comparatively simple step can be taken by considering not single classrooms but groups of classrooms serving as a focus centre for a particular line of enquiry. Further a classroom may be less classified by the subject and more by the activity, some rooms becoming reference or research centres – overflow from the library, others serving as areas for practical work, modelling, painting, building up exhibitions or mapping, and yet others for audio-visual material or discussion or written expression. An arrangement of this type suggests some movement of pupils from one type of activity to another and such movement will be determined by the needs of the pupil himself.

Teachers too will find their roles overlapping, new forms of co-operation have to be found, and older, more traditional, ideas of non-interference once they are in the classroom are challenged. Within this framework mixed-ability grouping can become much more than a new form of grouping children for subject teaching. The door is opened to team teaching, interdisciplinary enquiry and a fresh and critical look at curriculum content. If blocks of rooms, focus points or areas of enquiry cannot be provided then much can be done to liberate individual classrooms with a freer arrangement, giving various activity areas within the one room. This is especially applicable to the lower forms and does much to follow the pattern of junior schools.

Buildings have to be lived with and offer greater or

lesser restrictions to most new schemes, unless purpose built, but a fresh look can usually show new opportunities. The timetable is hardly less restrictive in much of the secondary field. Here the school that decides not to stream can rapidly and effectively create a more flexible working situation. Much has been written about the 40-minute cell, the fragmented day and the need for a flexible timetable. Schools are still faced with a meal service, staff shortages, buildings that create movement difficulties and transport arrangements that all too clearly define the start and end of the day. Indeed, notwithstanding the excellent extra-curricula programme of most schools, it is the nine-to-four tradition that is most limiting. It is more realistic at present to accept these limits and begin with a timetable that is based on equal units. An experience common to most schools which have mixed-ability grouping is the need for longer blocks of time, and yet some disciplines, especially languages, still value short, daily doses. Blocking can be the first step towards freeing the timetable while still permitting shorter periods.

The day can perfectly well be considered as two separate sessions, with blocking by sessions giving full opportunities for teams of teachers to effect their own timetable arrangements, especially where any inter-disciplinary enquiry is planned.

1	9.15 – 9.55	1
2	9.55 – 10.35	
3	10.50 – 11.30	2
4	11.30 – 12.10	
5	1.10 – 1.50	3
6	1.50 – 2.30	
7	2.40 – 3.20	4
8	3.20 – 4.00	

Within this framework variable group sizes can be more easily obtained and individual teachers will have greater control over the day-to-day organisation. It represents a first step in freeing the timetable, preventing some of the scurrying between lessons, yet giving more purposeful mobility with 'enquiry'

methods, providing a wider range of time lengths from the shorter language lesson to the longer blocked periods for the team teaching work in Humanities or other subject areas. More radical timetable improvements would come with experience but to unstream makes a re-think on timetabling essential.

Given a favourable administration that is ready to look anew at the available buildings and consider the timetable as the servant, not the master, of the teaching situation, the problem is brought to human terms. A teacher will say 'I see that we *must* unstream for social reasons, but how do I do it?'

After a lifetime of being taught and, most likely, teaching in a streamed situation, most teachers have developed methods geared to efficient class control and the movement of children along academic paths at set rates. It is the concept of the class, a so-called 'homogeneous' unit (with a predetermined ability and attainment level) that sets the standard, pace, and ultimate achievement level of work carried out. Many teachers have considered themselves, and rightly so, successful in this situation as a result of patient and continuous development of their skills, with which they have kept themselves up to date and efficient as teachers.

To unstream is to upset all this. As more and more schools considers unstreaming this step will not always be taken only by strong-minded headmasters who then assemble a group of like-minded staff. Teachers are being challenged by a new approach, some are inevitably ready, many hesitate, need and expect guidance, and some will simply refuse to change. Reaction is varied and often abrupt and to the point – 'Is it more demanding on the teacher?' 'Do we get more money?' 'Can't be done unless groups are smaller.' 'We will need a larger slice of the capitation.' To suggested methods it is often 'There is nothing new here, it's all been done before' or 'That's a good idea but surely it will work out well in the streamed situation'. Opposition, doubts and queries must be expected and need sympathetic and constructive answers.

With a homogeneous group the assumption is that the teacher will only have to organise one set of materials and teach it to the entire group rather than concentrate on individuals within the group. The children in the non-streamed situation must be encouraged to think of themselves as productive learners. Until, however, the teacher is aware of what mixed-ability groups enable him to do, he will teach no differently than before, for unstreaming is merely an

organisational change and by itself no panacea. It is the experience of one headmaster of a junior school that teachers, introduced to mixed-ability groups, react in three phases. Firstly, they treat the class as if it were streamed and use direct teaching methods; then some form of grouping within the class is organised, resulting in streaming the unstreamed, and finally they develop individualised learning methods.

Within the classroom situation fundamental problems requiring decisions arise that involve every single teacher. What is the place of text-books and exercise books, marking procedure and assessment of work standards? The teacher in a comprehensive school may be faced with a group with an IQ range of 70-140. The problems are, therefore, often the very simple ones of establishing the right kind of contact and allowing always for the different pace and standard of work that is going to be achieved. The non-reader may be literally rubbing shoulders with the potential university student and it is with such pupils at either extreme of the ability range that the greatest controversy lies. Within the heterogeneous group these abilities are expressed and sub-groups will appear, but they are constantly being reconstituted. It is quite clear that it is not the grouping itself that gets the results but that the composition of the group allows certain kinds of educative processes.

Textbooks continue to improve in quality and format. Many are breaking away from the aim of meeting the level of a particular ability group, but it will be difficult to find a set of books for one undifferentiated class. Many teachers of streamed classes have long had the practice of using a range of textbooks. To build up a wide selection of books for reference and research is an essential first step in the mixed ability situation. With the increasing development of forms of interdisciplinary enquiry sources of this kind become ever more necessary and need the addition of a variety of other resource materials.

Exercise books have many virtues but are, on the whole, another example of inflexibility. Not all work has to be preserved, indeed a wrong line of enquiry should be discarded. Demands of work usually require blank, squared and ruled paper at various stages. Paper itself may need to be laid on a tracing table, pinned to a display board, cut to shape, painted on, have light projected on to it or simply worked on by a small group. Freedom can be given to the pupil if he is encouraged to work with a variety of materials. Some form of folder is the simplest initial solution for storage. For pupils who have extreme difficulty with writing an expression outlet may be provided by a tape recorder.

Marking and assessment are the basis of a selection procedure and are traditionally comparative. Even putting aside the vital question of the meaning of marks to pupils, parents and teachers it is obvious that in a mixed-ability class, marking to a standard is even less realistic than in so-called homogeneous groups. Marking should be done with the pupil and centred on the individual and it is important to encourage self-assessment by the pupils themselves. Any form of comparative grading is not valuable but correction, praise and comment are.

Methods best suited to individualised and group learning are not well developed in the secondary field. Much can be learnt from the approach in junior schools and as primary pupils move into secondary schools there will be an intake capable of self-determined exploration into a learning situation that requires investigation, analysis and interpretation. Some secondary schools are trying out far-reaching ideas with great success, but many more have de-streamed without the radical change of methods needed. Much can be learned from the schools and departments that have established new techniques and tried to evaluate them. There is need for a vigorous exchange of ideas in this field.

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## Readers' Experiences and Opinions

The editors would welcome contributions to discussion (up to 800 words) or articles (about 1500 words) describing the development of new curricula and teaching methods in the more flexible school situations that are

currently being evolved at all stages of primary and secondary education. The conference advertised on page 45 will provide further opportunity for such interchange and critical discussion.

# Flexibility for a Comprehensive School

## I McMullen

Tim McMullen was the first headmaster of Thomas Bennett comprehensive school in Crawley. He was Principal Lecturer in Education at Coventry College of Education before his appointment as Co-ordinating Director of the Nuffield Resources for Learning Project.

In this article I am trying to show how both the process of planning and its outcome in my personal approach to setting up a comprehensive school have changed between 1958 and now.

In 1958 a team of teachers, ably supported by LEA officers, had the opportunity to build up an 'un-creamed' fully comprehensive school. In the beginning nothing existed except a plan for a campus site on which was to be built two modern and one grammar school; these buildings, only slightly modified, became the physical plant for the Thomas Bennett school.

Thus it was possible to plan the school completely. How did one start? Looking back now, I would say with some fairly clear aims which were never thought through into adequately defined objectives. These aims were based on a personal philosophy which puts the individual at the centre of his universe, looks at society at large only as an organisation to allow individual maximum development, but considers that, for most individuals, relationships with the small groups with which he lives, works and plays are the most important factor in giving him the satisfaction he needs. This implies the maximum development for each individual of his intellectual, emotional and physical capabilities.

At that time these basic beliefs manifested themselves in three clear aims: these were not felt to be complete in any way. At the time I convinced myself that this was as much as could be tackled in the first seven years; though there was some truth in this, I now think that it was because we had insufficient time to think through. As long as we continue to pitchfork heads into their position of exceptional power without a course which not only helps to make better managers of them but also subjects them to vigorous intellectual questioning and exposes them to new thinking on education, we shall, as Heads, fail to realise our own and our schools' full potential.

The first aim was to develop the intellectual ability of every child through exposure to academic – in its widest sense – activity; an assumption was made that we had totally underestimated the ability of children

to study and to achieve the very modest academic standards set by the GCE boards. We felt, *given motivation*, that though ability varies – whether from innate or environmental factors – very few children were not able to achieve 'O' Level by the age of 17, at latest 18, and that a very much higher percentage could also reach 'A' Level. A conventional streamed system but having cross sets in four subjects with great flexibility of movement and the minimum of 'bars' was used. For the most essential factor – motivation – the whole stress was on the external motivation, the carrot and the stick, great emphasis being made both to child and parent on the advantage of education for succeeding in careers; this was combined with an attempt to make school a reasonable and pleasant place to be, with non-authoritarian relationships with the adult world.

The second aim was to ensure that each child was looked after as an individual, that someone knew his parents, his background, his previous social and academic record, and his current performance. I have never considered that, at secondary level, this was achieved by the 'class teacher' concept. This presumes that, at the very difficult stages of early and middle adolescence, the *average* teacher with all his pre-occupations, can or will relate in any meaningful way with thirty-five children. I felt then, and still do, that one selected staff of senior Head of Department status with no other major duties and a reduced teaching load must have Headmaster's responsibility for between 150-250 children; that this body must be subdivided into groups of thirty under staff whom they meet daily in an area in which the head of the unit has his room; that a system of regular reporting on academic progress at least three times a term through the smaller unit to the head is essential. The most important factor is, however, the head of the unit, not the staff in charge of the sub-unit – the housemaster, not tutor-master, the year master, not form master. In the case of the Thomas Bennett School it was the housemaster organisation that was chosen but the whole stress was on the pastoral aspect, not on the

house as a social unit.

The third aim was to establish a relaxed and friendly atmosphere with authority linked to function not position, despite the size of the school – circa 2000. This implied that rules were made only to make the functions of the school possible and that authority was only exercised to make the functioning possible. For example, 'Don't talk while I am talking because it makes it impossible for the others to listen' not 'Don't talk while I am talking because it is an insult to my position as a teacher'. This implies that respect will only be won by what a teacher is, not for his position as such. The same relationship was aimed for between the staff hierarchy and staff generally.

That was nearly ten years ago.

Probably the biggest change in my thinking lies in the awareness that to design anything, a very clear definition of objectives is necessary, and that the process of deriving an organisation from a set of objectives is much aided by a 'model' to direct thinking. I do not think that my basic philosophy has changed, but in trying to derive objectives from it I am much more aware of the need to consider the world between 1975 and 2025 in which the individual must live. Simplifying, this is likely to be a period of continuing and possibly accelerating change – change in technologies implying need to change the mode or nature of work, change in ethics implying adaptability and lack of rigidity in determining personal ethos, change in society towards bigger units, wider associations and less emotional involvement in the large unit – the Country, the Firm, the Church – change in the relative importance of work and leisure.

This implies to me that the individual who will achieve satisfaction over this coming half-century must have a clear sense of his own identity and ability, must have developed intellectual and emotional strategies that make for adaptation to change. Emotional satisfaction must come entirely from his relationships with the small groups he lives, plays and works with but these may change over his lifetime and may involve others from differing social and racial backgrounds. He is unlikely to develop an absolute ethos that will serve him for the fifty years of his adult life; he will need to decide on ethical guide lines at any given moment, but he must also be prepared to re-examine them in the light of changing social structures and organisation. In the face of shorter working hours and less exacting or stimulating work, he will have to develop a full life outside his working hours, one that

allows him intellectual, emotional and physical actions that bring satisfaction.

Well, what objectives can we select to achieve our aims? I find it clarifies my thinking if I classify objectives in this way: the internal and external motivations leading to the achievement of all other objectives; individual personality traits and attitudes; logical strategies; skills; creative abilities; knowledge – information and principles/concepts. It is possible and useful to subdivide these, but for the purpose of this article, unnecessary. Also it is not possible at this stage, partly because they have yet to be worked out fully, partly for reasons of space, to outline more than a few of the main objectives.

Two essential objectives in terms of personal traits are firstly, the ability to study independently for a distant objective, planning your own work and overcoming immediate pressures from drives that would divert you from your goal; secondly, the ability to work as a member of a group for a corporate end, subduing the prompting of your own drives for a common end.

Logical strategies must include both the ability to deduce principles from data and ability to induce instances from general principles; they must also include strategies for 'problem solving' which embrace both scientific proof and judgement. Skills must include the ability to accept both aural, visual and printed information and to communicate in the same three ways; the widening society implies the possession of foreign language skills and knowledge of the strategies of acquiring such skills.

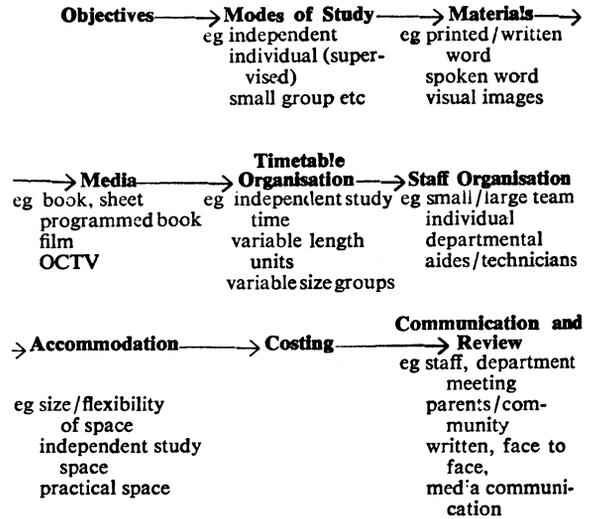
Creative abilities implies not only the ability to satisfy the basic drive to create in a given art or craft but the ability to harness those drives to enrich living generally eg design for the creation of living conditions. Challenges of all kinds that require individual or group creativity must be a major objective.

I have left knowledge to the last because in the past this has been thought to be the major objective in education. I believe that a very balanced attitude to this is necessary; some reformers would, if they could, abolish knowledge on the grounds that, in a rapidly changing world, knowledge also changes and becomes outdated: all we need is skills, logical strategies, creative abilities and personality development. However, all advances in knowledge, particularly in principles and concepts, are based on the status quo; it is essential that the individual, as far as possible, has in his possession the current knowledge of principles and

concepts in the area in which he is operating, enough information to make these intelligible, and knowledge of where he can acquire further information if he needs it. It is as well to remember also that much creative thinking depends on fruitful analogies and this is knowledge. Having said this, it is necessary to examine very carefully what knowledge our individual is going to need. Firstly, he must have that knowledge which makes it possible for him to choose a work activity or further education which he desires. This involves the passing of examinations at given standards, however much we may deplore the present nature and structure of examining. I suspect, however, that changes in the examining system which have already begun will accelerate, making them better tests of other objectives than knowledge, that more school control of content will become possible, and that even now, universities, colleges and employers will accept only too gladly well-educated individuals who may have less 'O' Levels or less 'A' Levels at high grades; in fact, they are coming to realise the importance of the whole person, not just his ability to acquire knowledge. Apart from the requirements of examinations, a major objective is to give the individual knowledge about himself, his relationship to the small groups he works, plays and lives with and the relationships of these groups to the larger societies; fields perhaps taken from Social Psychology, Social Anthropology, Sociology, Economics and Politics – remembering always that it is the principles and concepts governing relationships rather than information about the structure that is important.

I have left to last the most important objective of all, motivation. Of fundamental importance is internal or intrinsic motivation which rises out of the individual's drives towards satisfying curiosity, successful achievement and creation. However, external or extrinsic motivation must not be neglected: this involves the individual in desiring to please adults and peers – parents, teachers, his own group, and for that matter, in avoiding their displeasure; it involves the acceptance of distant goals – a place at a university, the ability to turn a part for a model machine, the ability to speak Spanish for a holiday.

From this selection of objectives, how can an organisation be derived? Here I personally find this 'model' useful. I would like to make clear that this is not a formula for right or wrong answers, but a way of organising thought; and I am finding that this model requires expansion to cover social organisation.



Now perhaps we can look at certain objectives in the light of the model and see how this will affect the organisation of the next school. Firstly, the objective which is 'the ability to study independently to a distant goal and to control immediate drives'. What modes does this imply? Certainly independent study, during which the choice of activity and intensity and pace of it is left to the individual; probably prior to or concurrent with this, individual study, time tabled or staff controlled. I envisage in the next school between 20-50 per cent of the time of the average child between 11 and 16 spent in such independent study, which might vary in kind between exercise and follow-up work from the class situation, through individual 'programmed' work to self-chosen project work. Materials will have to be devised for such independent individual work and must be in a form readily accepted by the individual – it is no use having a predominantly written/printed work material for those whose reading ability is limited. Media must be suitable for individual operation – perhaps pamphlets and sheets are less expensive than books where there is a heavy demand on books; individual loop projectors, tape recorders. Timetable organisation will require the necessary independent study periods, preferably in half days, and accommodation will be needed, both of a library/resource centre type and for practical work. Staffing will require – apart from re-education of staff to accept the concept – overall 'loose' supervision of the independent study areas and

the intelligent use of the staff for the time released; more seminar/tutorial work, more creation of suitable independent study assignments. Possibly slightly fewer staff but more technicians/aides and more money for materials/media will be required. Communications will require a system by which the quantity and quality of independent study is checked and the personal controller of the child is made aware of the degree to which the objective is being achieved.

The objectives in terms of logical strategies which imply both inductive and deductive methods and also scientific proof and judgement, will be achieved more by emphasis within subjects, but it clearly means the inclusion, throughout the secondary stage, of the study of subjects which encourage the development of such strategies, ie science and humanities. It also requires the introduction of these units into practical and creative situations: crafts should not be only skills training, but also exercises in logical strategies. Without going through all the stages of the model, it is obvious that such strategies can mainly be practised as an individual.

From the skills, consider the development of the ability to receive and use aural/oral communication. Modes encouraging this will include the seminar group, the large group and the small group, staff controlled or supervised. Material must be the spoken word which can be received from staff, peers, radio, tape, records. Staff organisation must emphasise face to face relationships, preferably individual, or small group or seminar.

Space prevents further illustration, nor is the process anything like complete, but it can already be seen that a very different structure and organisation from the normal school is likely to emerge. This will, I think, not alter the basic house social structure – the one responsible staff to 150-250 children – but will profoundly alter the 'academic' structure and the whole relationship between the school and the community. Perhaps general lines can already be discerned. Independent – child-chosen – study will be an integral part of all children's experience. Although the basic concept within subjects of one staff being responsible for the progress of thirty-odd children will continue, the class-contact time will be spent much more in small group, seminar and individual work, often in spaces in which sixty or ninety children are working with two or three staff; this will be particularly true of the arts and crafts.

Libraries/resources centres will be available in which access is possible not only to the printed word but also to tapes, films, loops, and TV programmes. Practical access, both in the sciences, arts and crafts will be available for on-going projects as well as for independent study. Combined Science and Technology and Art-Crafts-Technology will be an integral part of the curriculum.

Humanities studies of the individual, his immediate society and the larger society will run through from 11-18, implying staff with Psychology, Social Anthropology, Sociology and Economics qualifications rather than strict Historians or Geographers; this will probably involve special examination procedures.

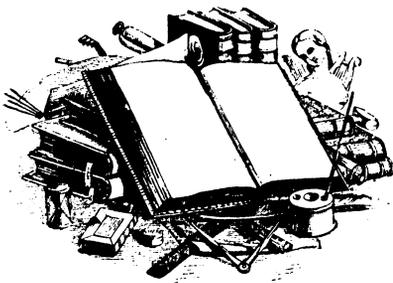
Authority relationships will be entirely functional, with no special position for Headmaster and staff; rules will be made by the school and any enforcement officers considered necessary will be elected by the school – with some security of tenure! Stress will be on the co-operative effort of staff, children, parents and the community. The school will also be the youth and community centre and activities involving both school and community will be possible between 9 a.m. and 9 p.m. The rigidity of the school day will thus be broken down, and combined groups of children and adults, mainly between 5 and 9 p.m., will be a regular feature.

Streaming or non-streaming will be irrelevant in a system which is based so much on individual and small group work but steps will be necessary to ensure that those children who need the resource of a highly qualified staff in a certain subject are in contact with them and that those who require a particularly understanding teacher for remedial work are in contact with them.

I imagine an initial marked reduction in the normal class instruction method, perhaps followed by an almost complete withering away of it, but a concomitant increase in the staff's real influence over the individual through much more meaningful contact in much smaller groups.

Three main differences will, I think, mark any school I may have the fortune to control in the future: the whole academic emphasis will be on the individual learning, not the teacher teaching; the intrinsic motivation rising out of the child's curiosity, desire and achievement and creative drive will be stressed equally with the extrinsic motivation; and the school and the community will be one unit.

# Reviews



## New Buildings for Old

**The Primary School: an environment for education.** Pilkington Research Unit, Department of Building Science, Liverpool University (1967), 163 pp, 40s.

This is the third publication of the Pilkington Research Unit, a group fostered by the Department of Building Science at Liverpool University, to make what they call 'a total appraisal of building performance' in different spheres. Previously the Unit has concerned itself with factories and offices but, on this occasion, they have ventured into schools – the Primary School since, as they say, this is the smallest and simplest type of educational building.

The team is architect based, but includes a sociologist, a geographer, a psychologist, and a physicist, and on this occasion they have incorporated an educationist, namely, Mr Harold Hayling, now a divisional inspector with the Inner London Education Authority.

The educational object is to help establish a more critical attitude towards the design of the school environment than at present exists. For this purpose the contemporary view of the aims and intentions of Primary Education is considered together with the views of teachers and students on the kind of buildings in which they work and would like to work.

For most teachers, alas, these are two different matters and only likely to coincide in some of the better

post-war schools through the design of which, under Department of Education and Science leadership, Britain is widely held to have made its most notable contribution to post-war architecture. Here too, as part of a detailed analytic procedure, the users, teachers and children alike, were consulted as to how things were working out.

What emerges most clearly from the enquiry is the contradiction between the old cramped buildings with their tight, box-like class rooms and the development of a new and expansive practice with its demands for broad flexible space.

It is an exhilarating experience to go on from there with the team to the consideration of what could be done by way of designing an environment purpose-built for the all-round Primary education which we are coming to envisage.

The Unit sees the whole school and its surroundings as a complete teaching instrument where groups ranging from one to the whole community can find space to work. For the latter it does not regard the present multi-purpose hall as an answer. School meals would be banished to a separate kitchen/dining area and it advocates a covered space (preferably heated) for physical activities, flanked by a changing room with showers and an equipment store.

Each class space is to be as large as possible – about twice the area of the traditional class room – able, with the use of moveable furniture or foldable partitions, to accommodate a variety of groupings. To allow for co-operative teaching within age groups, the spaces should be so grouped as to allow for linkage with common space for the children to use for book collections, interest corners and display, and for the teachers to use for the more technical part of their work.

The open spaces round the new schools are seen as part and parcel of the educational purpose. The old asphalt surface is retained but provided with specially built wall

space for ball games and in addition provision is made for landscaped surfaces with benches, a grass area for games, an adventure playground corner and a school garden plot to grow things in.

Primary school teachers still working in schools built in the last century which, according to the NUT survey, cater for at least half the age group, may well have decided by now that this particular book is not for them. It certainly goes beyond the more directly circumscribed aspirations of Plowden and in the present economic climate not many of the fine new schools will be built but, if we Primary School teachers are to fight for the right conditions in which to carry out our work of inducing learning in the vital early years with which we deal, then we must be clear on what we want.

This Report is extremely helpful in this respect. It is forward looking and stimulating and with teachers involved it does not lose touch with reality and many of us who know that we cannot have an ultra modern school will be encouraged, nonetheless, to see what more we can wring from our present environment.

G FREELAND.

## Teaching Mathematics

**Mathematics and the Conditions of Learning: A Study of Arithmetic in the Primary School,** by J B Biggs. National Foundation for Educational Research (1967), 441 pp, 55s.

This is the report of a research in which 5,112 children were given a battery of tests in the third year of their junior school – a verbal reasoning test, two 'mechanical and problem' arithmetic tests, two 'arithmetic concept' tests, an 'arithmetic attitude' scale, and an 'anxiety inventory' questionnaire. The participating

schools were grouped into three lots according to the type of arithmetic teaching pursued. The first of several conclusions reads:

'Using conventional problems and mechanical tests as criteria, there is no evidence that the use of uni-model structural materials, such as the Cuisenaire or the Stern materials, will produce results with average children that differ from those obtained under traditional methods, in similar school conditions.'

I give this preamble to show the kind of research with which the book deals. Dr Biggs places this research in a theoretical framework which, he admits, draws heavily on the work of Piaget, Bartlett, Bruner and Dienes.

The book raises the question of the appropriateness of using fairly large-scale sampling techniques in trying to answer the hypotheses it has formulated. Not a new question, indeed. But the practical relevance of this field to the teacher, and the extensive anxiety in primary schools about methods of teaching mathematics, will attract the attention of many to the book, or to summaries of its findings in the press, who may not have thought about the implications of this kind of study. The author says, 'As we are mainly concerned with evaluating *types* of teaching rather than with comparing methods within types, the main analyses were carried on the "traditional", "structural" and "motivational" classifications.' (p 123) The author's own difficulties in describing these categories with any precision demonstrate the futility of dealing with such coarse, global, 'black-and-white' relationships. They do almost nothing to reflect the variety and subtlety of the choices open to a teacher and a group of children. Is this not the reason why studies of this kind invariably yield the unsurprising and unhelpful conclusion that differences between teachers are greater than differences between methods?

Dr Biggs offers the usual disclaimers

– that the results must be interpreted with caution, and that the research should be regarded as a pointer to further investigations. He seems more confident about his theoretical formulations, but with rather less reason. His crude analysis of the literature about the teaching of mathematics obliterates important points and blurs controversial issues. He says at one point, 'As anyone who has studied these various rationales of structural methods soon realises, these theories are expressed in partial, highly individualistic and often mutually antagonistic terms . . . The present writer believes that much of this theoretical diversity is little more than a matter of terminology.' (p 8) There is either a serious deficiency in understanding here, or a determination to ignore alternatives for other reasons.

It is clear that Dr Biggs is heavily in debt to the theories of Z P Dienes. Fair enough. But it leads him to omit, misrepresent and load where convenient. Only three of Gattegno's books are mentioned and none of Goutard's. Dr Biggs asserts that the theory behind the Cuisenaire rods has moved towards a version of Piaget's theorising. (Gattegno translated **The Child's Conception of Number** before 1954, and the introduction to **For the Teaching of Mathematics** – 1964 – shows how he has moved away from the Piagetian position.) Piaget himself is mauled about in the course of the telling. One school represented in the main research that was using 'multi-model apparatus' – ie Dienes – was tested again later and its results compared with results obtained in the large sample; no other school was given this privilege.

I could go on to discuss the inadequate analysis of such concepts as 'understanding', 'motivation', and 'rote-learning'; and the misunderstandings so enormous that they become howlers – 'The sophisticated formal thought of the adult is characterised by the ability to covary a large number of dimensions

at once, as is required in *n*-dimensional non-Euclidean geometries or in matrix algebra.' (p 15) But my only reason for persisting so long with this unattractive volume has been the importance of the subject-matter. That it could lead to the newspaper headline, 'New ways of teaching arithmetic "no better"' (*The Guardian*, 25 September 1967) is an indication of the damage it may do.

I hope that with the publication of this book and the recent **Achievement in Mathematics** (ed Pidgeon), the NFER will turn its attention to other things and leave mathematics alone for a while.

DAVID WHEELER.



## Raising Our Sights

**The Teaching Revolution**, by W. Kenneth Richmond. Methuen (1967), 220 pp, 36s.

This is an ambitious book. Its central core is contained in a challenging quotation from **The Process of Education** by the Harvard psychologist, J S Bruner. 'We begin with the hypothesis that any subject can be taught effectively in some intellectually honest form to any child at any stage of development. It is a bold hypothesis and an essential one in thinking about the nature of

the curriculum. No evidence exists to contradict it; considerable evidence is being amassed to support it'.

Accepting this standpoint, Kenneth Richmond firmly rejects élitist ideas – the idea of a limited pool of ability has, he believes, been an important factor holding back progress and keeping educational provision pegged at 'an unnecessarily modest level'. The selective system has institutionalised failure, leading to a high proportion of rejectees. A teaching revolution, however, is now possible based on quite new principles. A full chapter is devoted to 'The Changing Concept of Educability'. The challenge now is to find the way to teach so that all can learn what previously was available to the few – indeed to develop a new pedagogy which will make a science of education.

The reader is taken on a whirlwind tour of new developments in the schools, and of new thinking about the nature of education and learning. Chapters are devoted to team teaching, the 'New Mathematics', curriculum developments in the sciences, contemporary conflicts in the teaching of English (creativity *versus* linguistics), to audio-visual aids and 'multi-media communication systems'. The book is a *tour de force*, readable and entertaining, providing a very useful introduction to a wide field of thought and practice in modern education. Although clearly an enthusiast, Richmond preserves a sane commonsense scepticism and never puts his claims too high. He is able to put the essence of a particular technology or theory clearly and simply. The value of his book lies in its attempt to provide a synoptic view of the new approaches, techniques and theories with which we are becoming familiar.

In the final chapter, 'Outlines for a new pedagogy', Richmond attempts to unify current theories – but, as he admits at the start, a viable 'theory of instruction' does not exist, indeed one wonders if a 'theory of *instruction*'

is what is required, particularly in view of Richmond's own emphasis on learning and on the need to encourage 'self-directed enquiry'. Emphasis is put on the need to structure knowledge, to isolate essential concepts, and to provide for their sequential learning. The nature of the learning process itself is, however, not discussed so that the lynch-pin is left out. This seems a common failing on both sides of the Atlantic and must surely be ascribed to the continuing dominance of behaviourism and therefore of behaviourist models in theories of instruction.

In the meantime there is everything to be said for raising our sights as Kenneth Richmond suggests, and in particular for developing techniques and methods which will make 'higher levels of attainment . . . accessible for an increasing number of children'. 'Contemporary pedagogy,' Richmond concludes, 'should not rest content until the same can be said for all.'

BRIAN SIMON.

## Structures for Teaching

**Topical**, by D B Boothman. Education Today Series, Longmans (1967), 103 pp, 12s 6d.

**Comprehensive Schools in Action**, by Maurice Holmes. Education Today Series, Longmans (1967), 86 pp, 10s 6d.

**Topical** is a report by a group of teachers on their attempt to restructure social science teaching to fifteen-year-old leavers in a relatively 'progressive' mixed secondary modern school. Mr Boothman and his colleagues are describing and commenting on the first year of their experiment and they are careful to begin by defining the objectives which

they set out with. These relate to the needs of school leavers in a changing society and the operational decisions are all described in terms of these objectives: no streaming, no subject barriers, no short 'periods', no traditional assessments of attainment and so on. In detail these methods involve teaching a series of themes chosen as being relevant to the pupils' present interests and adult life, teaching as a team, making wide use of audio-visual material, administering questionnaires to pupils to find out about their lives, 'master lessons' prepared by each teacher in turn and given by his or her colleagues and extensive use of purpose-directed visiting by large and small groups. The visits included service to old people and handicapped children. They also involved these urban pupils in exchange visits with age peers in a rural school. Among the most valuable aspects of the book is its frank discussion of difficulties and drawbacks.

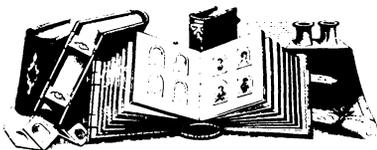
Some may question the decision to segregate boys from girls in spite of the authors' vigorous defence of this in terms of sex differences in maturity level. It is a moot point whether this well-known factor is not culturally induced so that, *ipso facto*, the educative process can itself affect the issue. This and other minor facets of the book perhaps suggest the limitations of teachers' thinking as much as pupils' – as for instance the apparent reason for the name 'Topical' given to the course, being a play upon the initial letters of the slogan 'A Time of Preparation for Industry, Commerce and Adult Life'.

But apart from such occasional lapses there is an eminently sensible and original spirit about **Topical** which should recommend it to the reader interested in the basic re-thinking of education for statutory-term leavers.

If **Topical** is original in tone, **The Comprehensive School in Action** is the reverse. Not only does it fail to do justice to the rich variety of current

comprehensive practice and the even richer potentiality of a growing area of experiment, it contrives to suggest that the practice it does describe is somehow a good prescription for *all* comprehensive schools. Mr Holmes appears to take it as axiomatic, for instance, that a mixed school will have single-sex Houses. The less able are talked about with great concern – and yet with the air of one describing a ward for incurables. In the Sixth Form, interest in politics and religion ‘will need closer supervision since in these fields emotions, even passions, are involved’.

In short, despite Mr Holmes’ evident sincerity, this book affords only a narrow view of ‘the comprehensive school’ while its conception of ‘action’ is limited indeed. D HOLLY.



## School and Society

**The Social Context of the School**, by S J Eggleston. Routledge (1967), 116 pp, 7s 6d.

**The School in its Social Setting**, by J B Mays. Longmans (1967), 94 pp, 10s 6d.

The titles of these paperbacks might reasonably lead a reader to believe that they dealt with similar material yet in many ways they are far apart.

Professor Eggleston has produced one of the first volumes in a series primarily aimed at students of education; a series which, we are told, will present material lucidly and usefully for the non-specialist reader. Certainly this has been achieved in **The Social Context of the School** in that this contains a brief but forceful account of the ways in which social forces impinge upon the school; showing how these forces have relevance for the classroom teacher and in general influence the outcome of educational decisions. The careful analysis of social pressures affecting the schools gives the lie to the old myth that our schools are somehow free to operate within a vacuum unswayed by non-educational considerations. Indeed we are shown how the pressures of the economy and of employers in particular, pressures of parents and of the middle classes in particular cause our schools to be strikingly influenced by external controls.

Reference is properly and usefully made to many major sociological investigations of recent years and inevitably the work of Dr Douglas receives attention. In particular his findings relating to the deterioration in attainment that appears to be related to placing in lower streams. Unfortunately, but inevitably due to later publication, mention of the work of Horobin et al (*Sociology I ii*) which casts serious doubt on the validity of Douglas’ conclusions does not appear. Horobin has shown that regression to the mean level of ability for each social class is a more likely explanation of statistical gains and declines observed over time. Doubtless this argument will be incorporated in a later edition.

There is much of value and interest in this work for the general reader, especially where it deals with immigrants, and in the excellent account of the interplay between the local administration and its values and priorities and, for example, the proportions of selective school places

made available. Perhaps the cool argument could have been relieved rather more often by some of the anecdotal material that can and does provide fascinating flashes of insight; though it may well be that anecdotal material is scarcely what most students lack. The quality of the text is matched by the realistically short reading lists for each chapter and the carefully selected and splendidly up to date bibliography.

By contrast, Professor Mays’ book, while often very readable, and certainly not resembling in style the almost clipped sociological precision of Professor Eggleston, seems in some ways to be a work of philosophy. It contains much of his values which while interesting are often unsubstantiated. Many would question some of the implications of his writing; for example, he suggests that social class today is more determined by educational qualifications than a determinant of these. He describes the contemporary scene as ‘a world of candyfloss affluence’ and claims an undesirable influence’ for the mass media.

There is, however, sincere, welcome and convincing matter in this book when Professor Mays is writing about areas where he may claim to be expert, like delinquency or the downtown school. He also has a perceptive analysis of the contemporary grammar school showing how its pretensions to liberal education are all too often overwhelmed by the orientation towards exam success as the means of achieving superior socio-economic status. He is no respecter of the traditions of chapel or cadet force yet he does not pursue his argument to a logical point by exploring the prospects and possibilities of the comprehensive school. The weakness of this book seems to be its lack of social scientific rigour, while its great strength lies in the experience and knowledge that clearly support some of the heartfelt conclusions.

C J JACKSON.

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