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Special Number on Non-Streaming

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Non-Streamed Teaching

It has become the fashion in the educational press – and unfortunately among *some* HMI's – to 'knock' non-streaming, or, as it is usually put, mixed ability teaching. This is a predictable concomitant to the general attack on 'modern methods', comprehensive education, and the like. So far have things gone that the official conservative spokesman on education, St John Stevas, now promises that, if returned, a stop will be put to all further such developments – except those of proven success!

This Special Number has been produced as a restatement – or, better perhaps, re-assessment of the case in the present context. From its establishment 20 years ago, **Forum** has specifically encouraged the movement for the modification (this is how we put it in our first number) of the rigid streaming system inherited from the past. It was one of the 'New Trends' the journal was established to discuss, the other being comprehensive education. And since that time there has, in fact, been a massive swing to unstreamed teaching, first in primary schools, and then in the lower forms of comprehensive schools.

In this number we consider the reasons for this – they are, of course, closely linked with the rejection of the theories of intelligence testing as put forward in the inter-war period (which still lingered on). But other factors also played their part, in particular the new emphasis put on child *development*, an emphasis which militated strongly against the pre-determination of that development implicit in the streaming and classification procedures of the past.

The transition to non-streaming is, then, a movement which aims to put *educational* considerations first. In this sense the schools are not seen as having, as their prime function, the programming of children for a specific role in the job market; even if these pressures still exert their influence in the secondary age range. Non-streaming has been a teachers' movement, based on their professional expertise as to the most effective form of grouping in the light of modern approaches, resources and methods. It is adapted to the objective of educating all our children, and not only a selected few.

In this number we cover all levels of contemporary schooling, infant, primary, middle and secondary. Annabelle Dixon assesses the situation in infant schools, suggesting that a hidden form of streaming still continues through the grouping systems adopted by some teachers – and this is certainly an important point, not only in infant schools. Philip Sherwood tackles the vexed question of mathematics teaching in unstreamed junior teaching, while Arthur Razzell gives his personal view on middle schools. In the secondary field Roger Seckington considers the pros and cons as to what has been gained from this movement over the past ten years or so, while two articles tackle the two subjects that present most difficulties to those implementing mixed ability teaching – mathematics and modern languages. Both suggest some modification of complete non-streamed teaching, and both contributions are offered in the hopes of promoting further discussions of these issues. We have deliberately not included articles on the teaching of other subjects, for instance the humanities and sciences, in secondary schools, since these do not appear to present difficulties to the same degree as those chosen. In addition Professor Wragg contributes an article on preparing teachers for mixed ability classes, based on the Nottingham/Leicester project, while John Elliott probes interestingly the significance of different forms of organisation of unstreamed classes.

We hope that this number will contribute to a sane re-appraisal of the transition to mixed ability teaching. It is offered as a constructive contribution to the current discussion.

Why Unstreaming?

Brian Simon

Streaming was introduced, as a general principle of school organisation in this country, as a means of providing for *individual* differences, the extent and crucial importance of which, it was claimed, had been 'revealed' by psychometry (in the form of intelligence testing). No doubt there were social and administrative reasons why the system caught on to such a dominating extent from the mid-1920's to the mid 1950's, but this was the rationale – or educational justification – advanced.

From the start, therefore, there was a contradiction between theory and practice. The inception of streaming allowed a reversion to annual promotion, but now combined with classification by 'ability'. It is a point of historical fact that the streamed system *superseded* the individualised Dalton Plan approach based on assignments, which reached its high point in the early 1930's. As Hadow reorganisation was gradually implemented (it took 40 years) the classification and streaming of children developed as its concomitant.

Streaming, then, reinforced the traditional approach of class teaching, which was already being called into question in the early 1920's. It gave it, as it were, a new lease of life. The object (and official advice) now was to provide each *stream* with a differentiated content; one adapted to its general ability (or level of intelligence). Classes were seen as 'homogeneous'. Techniques of individualisation or grouping within the class were neither recommended nor sought (except in infant schools). The object was to take the class *as a whole* through its differentiated curriculum.

Hence the basic contradiction, referred to at the start. Introduced to provide for *individual* differences, streaming in fact meant precisely that form of *collective* instruction which necessarily ignored such differences, These were only allowed for in the sense that broad 'ability' groups were taught together.

What was the rational basis for the move to unstreaming, a grass roots or teachers' movement, which gathered pace in junior schools from the late 1950's and then (in the 1960's) pressed into the early years of the secondary (comprehensive) school? These can be briefly summarised.

1 A growing recognition that a 'homogeneous' class, even if accurately classified on the basis of measured 'intelligence', is in fact 'heterogeneous' as regard many abilities and skills with which teachers are concerned.
2 A questioning of the validity of the 'hard line' approach of psychometrists (on which the streaming rationale was based) as to the *fixed* innate (inherited) character of 'Intelligence'. If children's intellectual ability can be developed in the process of education, is it educationally justifiable to 'stream' them on the basis of their *existing* level (or measured intelligence) at any given moment?
3 Allied to this, a questioning as to the scientific accuracy (as claimed) of intelligence (or other 'objective') tests as measures of 'ability' – particularly since such tests appeared to reflect to some extent at least the child's cultural environment (ie, the tests were not 'culture free').
4 A growing suspicion (later confirmed by research findings) as to the self-fulfilling nature of the practice of streaming – that the process of streaming itself determined its outcome (briefly that A stream children would always 'do better' than C stream children). A growing understanding that this was due to (i) the differences between the environmental context of different streams, (ii) to the effect of the teachers' differential expectations as between streams, and (iii) to the effect on the children of their own self-image resulting from stream placement.
5 A growing suspicion as to the alienating social effects of the practice on low stream children.

No doubt there have been other reasons, for instance, ideas relating to equality and social justice; but the points above comprise strictly *educational* reasons for the move to non-streaming, whether in primary or secondary schools. It is worth noting here that many secondary modern *and* grammar schools began to unstream in the early 1960's, so that the subsequent movement in comprehensive schools was part of a general tendency – reinforced, of course, by the fact that comprehensive schools were established specifically to overcome divisiveness in secondary education.

However there is another factor, I suggest, which has reinforced the move to unstreaming. Education is now seen, by many teachers in primary and secondary schools, as going beyond instruction (and its concomitant 'assimilation') to the promotion of learning (and so, 'appropriation'). This is a shorthand means of signalising a rather fundamental change in outlook and objectives. Streaming was well adapted to promoting assimilation; it is not well adapted to promoting the 'appropriation' of knowledge – since this requires the child's independent activity (and therefore scope for individualisation of learning).

The abolition of streaming, then (or at least its modification) aims to free the child from the determining effects of classification, and, in theory at least, makes it possible to provide a teaching/learning environment which allows for *individual* development (often unpredictable). In other words it overcomes the contradiction implicit in the streamed system (between its rationale and its practice).

The move to unstreaming can never be a simple administrative change – that is, if its basic rationale is understood. Nor can it be something imposed from above. Unstreaming implies a new approach to the whole educative enterprise; one which must pervade the school as a whole (just as the rationale of the rejected – streamed – system pervaded the school, and, indeed, the entire system). It embodies a distinct and specific theoretical outlook concerning both child development and the practice of teaching. To impose non-streaming by administrative fiat is to court disaster (as has been documented).

Perhaps it is best to see the movement to unstreaming as a *process* in the course of which appropriate techniques, resources, approaches generally, are hammered out in practice – in the course of daily and weekly experience in the school and classroom. It was disenchantment with the classificatory system of streaming which originally led to the change, and this initial disenchantment snowballed. The new techniques and approaches had to be worked out *ab initio* and we are still in the position of finding our way. The problems differ to some extent between primary and secondary schools, from school to school within these systems, and between subject areas, some of which present more difficulties than others due to the nature of subject matter. A great deal of practical experience has now been accumulated; and of course very real problems certainly do arise.

This is not the place to go into these; nor into the question as to what modifications can be made to meet specific problems. The purpose of this article is simply to emphasise the general principles behind the transition to non-streamed teaching. It is the more important to do this in view of the current moves towards the imposition of mass testing by certain local authorities which may pressurise schools to revert to traditional methods based, as indicated above, on a very questionable rationale.

The real problem now is not whether to revert to a system which has already been rejected as inadequate. It is to find the means to maximise the effectiveness of the new system and approaches within the limits imposed by present conditions concerning examinations and the like. A great deal of discussion and exchange of experience has been going on on this over the last ten or even twenty years. The bulk of our primary schools now operate on this basis, while the latest information indicates that the same may be true of the 11 to 14 age range in comprehensive schools (and in 9 to 13 middle schools).

What is needed now is a constructive approach to this question from all concerned (including educational journalists), rather than the kind of ill-informed criticisms that the schools have suffered over the last year.

Non Streaming: Retrospect and Prospect

Roger Seckington

Roger Seckington is Principal of the new Earl Shilton Community College and a member of the **Forum** Editorial Board. His 'Comprehensive' teaching experience covers all-through (11 to 18), High (11 to 14), and now Upper (14 to 18) schools.

'One of the issues is streaming, and its rigid forms are abhorrent; but we must be careful not to replace them by systems which may turn out to be equally rigid in their own way. The future will lie with diversity.' Thus Maurice Holt closed his article 'Is Unstreaming Irrelevant?' **Forum** Spring 1969. I firmly believe that his writings, together with those of others, urging a flexibility of approach to grouping, have been amongst the most helpful to those comprehensive schools embarking on unstreaming.

Current evidence shows that there is a wide measure of some form of unstreaming, especially in the lower secondary age group, in many comprehensive schools. It is generally accepted that there are social gains when a mixed ability grouping policy is adopted and that some very exciting and highly productive teaching – learning can result. Most also accept that to be successful, unstreaming must be a grass roots and organic movement. Yet those of us who are daily in the staffroom know that the issues covered by the grouping debate have changed little over the years. Argument polarises, and teachers experiencing even minor difficulties may wish to revert rather than come to terms with and solve the problem.

Mine is solely a gut reaction to the streaming issue and the practical task of teaching mixed groups based on my own comprehensive experience, which stretches back to the early 1960's with work in four different comprehensive schools. My present school in common with the three former schools has a measure of mixed ability grouping. More importantly all the schools tried to develop an overall structure that allowed for various patterns of grouping.

A central issue is individual teaching-learning. It should be argued that it is impossible to form homogeneous groups. Every group is made up of individuals each with a unique set of characteristics. It is our obsession with group teaching that is at the root of the problem. Almost everything in educational planning and provision reinforces teaching by groups, namely design of buildings (classrooms), staffing ratios and resourcing. Teachers are by training and experience orientated towards teaching groups. Even well thought out and carefully prepared destreaming may result in an albeit new, but none-the-less rigid form of group teaching. Despite the generations of experience gained in teaching children of all abilities in streams or sets the task of working with a group containing within it the widest range of ability can be awesome.

The worksheet was an early method developed to provide the necessary variation of pace, depth and content of work. In the hands of a master teacher the worksheet is a very effective aid. I well remember attending a conference a decade ago on 'Unstreaming in the Secondary School' during which a very skilled and experienced teacher then working in a 'well-known' northern comprehensive school explained how he tackled mixed ability groups and his methods of preparing materials, including worksheets. He certainly was enthusiastic and convincing, and it was clear to all in his group that he was an excellent teacher who could work in any type of school or group effectively. Towards the end of his session he was asked how much time he spent preparing materials. His answer that he probably spent 60 to 70 hours per week sadly saw off most of his audience on the spot. Undoubtedly the preparation of materials to stimulate and create investigative learning is a serious business, but ordinary teachers are helped by working together and banking their material. Some educationists rightly express 'concern at the growing over-dependence on the worksheet and its use to keep children quiet. 'Not another worksheet' can be the heartfelt cry of some students and where this is heard the 'rigidity' feared by Maurice Holt may already have been achieved.

Up and down the country it is possible to find examples of exciting and effective teaching in unstreamed groups in all subjects. Combining them in one school may not be so easy. Nor is it necessarily for the best to unstream in a doctrinaire way, for the grouping needs of one subject may not be the same as another. With this in mind I tried to adopt a pattern of organisation that

gave each subject or faculty an opportunity to group in the way it felt best. How many teachers will remember when the art group was determined by French sets or when grouping in English and mathematics had to be identical? The strategy that I have adopted in two schools is certainly not unique nor pioneering, but owes a huge debt of gratitude to others who have shown a possible way forward.

Firstly, a 10 form entry high school covering the 11 – 14 year age range. On entry to the school each pupil is placed in one of ten mixed ability tutor groups. These groups reflect friendship patterns and have an approximate balance of the sexes, feeder schools and range of ability. Half year groups, that is five mixed ability groups of approximately 150 children, are timetabled at one time. As a high school covers only the first three years of secondary schooling there are six half-year groups or populations which are matched to seven faculties or subject areas – English, Mathematics, Science, Modern Languages, Design, Social Studies and P.E. A possible Period 1 might look like this:

1st Year	Population A	Science
	Population B	Modern Language
2nd Year	Population A	Social Studies
	Population B	English
3rd Year	Population A	Mathematics
	Population B	Design

P.E. (including Music) are non-teaching.

Each subject area requires a minimum of five teachers.

Some of the advantages are obvious. Each subject area has a team of teachers who can, if they wish, teach co-operatively. Planning is helped because all members of a particular department have their non-teaching time together. Resources can be concentrated and planned for the half year group at a time. The half year group can at times come together to watch a film or listen to a visiting speaker. Field-work or visits can be less disruptive to the timetable. Where the design of the teaching areas includes some elements of open plan, or glazing or integration of the space available, not only can groups work more easily together but the teachers can control groups of varying size or following a variety of activities. Support for the disadvantaged pupil can be given either by withdrawing individual students or small groups of students, or by the specialist teacher joining the subject team as an extra resource. Above all else each subject area has autonomy over its own pattern of grouping. In this particular school all work is in mixed ability groups during the first year and for much of the second. Only mathematics and French set across each population at some stage in the second year. Grouping in other departments depends on interest or the activity, and rather less on ability.

Schools with this kind of variety of grouping are sometimes described as having a 'mixed economy'. I believe such a mixed economy is an entirely justifiable stage in schools that see growth towards unstreaming as organic, because a move to mixed ability grouping requires a 'readiness'. Teachers need to be ready in attitude, to have the right kind of resources available and to have adopted an appropriate methodology. Some subjects, especially those that follow a detailed sequence, may need longer to get ready. Rarely is much harm done by setting in one particular subject if the general ethos of the school is overtly one of equal value. Where some harm can be done is when students are excluded by their teachers or by the system from a course on the basis of ability, particularly if the student would rather continue with that course or feels that the alternative is 'second class'.

The second school catering for 14 – 19-year-olds has only just opened with 280 4th year students. Though far too early to make any claims, the grouping and curriculum can be outlined here, since it basically mirrors existing practice in a few other schools and may serve as yet another example. The intake of 280 students coming from two feeder high schools has been divided into 12 mixed ability tutor groups, which are mainly based on friendship patterns and number about 22 students. These group sizes reflect our present improved staffing ratios as a new school, but we would always anticipate keeping future tutor group size at or below 25 students. Three groups form a 'division' and it is the division that is used as the unit for timetabling. As in the previous school each division is matched to a faculty.

In a 20 period week 16 are spent in common subjects and 4 in options. Each faculty is able to teach a division at a time and arranges groups to meet its own needs. Groups are determined by choice and ability. The English Faculty works in mixed ability tutor groups, mathematics in sets, whilst in Humanities groups are largely determined by interest and choice. There is such a

	Eng	Maths	Sci	Mod Lang	Hum	Design	PE	Option 1	Option 2
	Drama		Bio	French	Geog	3D		Phys	Chem
			Chem	French Studies	Hist	2D		Bio	Comp Studies
			Phys	Eur Studies	Int Hum	Dom Sci		Hist	Community Service
			Gen Sci					German	Music
								Drama	RE
								PE	Office Practice
								Typing	Tech Drawing
								3D	
								2D	2D
								Dom Sci	Dom Sci
No of Periods	3	3	2	2	2	2	2	2	2

variety of grouping that an adequate description is difficult in a few sentences. The aim is to organise for a flexible pattern of grouping that reflects the differing needs of laboratory, workshop and playing field. A basic concern is not to shut doors too firmly or too early in students' faces thus showing an optimistic anticipation of the student's potential for development. It is our concern to share all resources with all students. At the point when we arrive at individualised learning unstreaming will be irrelevant.

Meanwhile we see our way forward through flexible grouping patterns.

In grouping for education unstreaming has been seen as the panacea. It is not of course. That mixed ability grouping is effective is beyond doubt, but all research points to the critical importance of the teacher. As unstreaming becomes more common so more and more teachers are being involved. Those schools first in the field were able to attract teachers with a high level of commitment. The experience of those earlier workers clearly demonstrated that teaching mixed ability groups is hard work requiring detailed planning, new methods, good resource provision and a school organisation sympathetic to their needs. Although the debate itself is still much the same, and is extending its frontiers continually, at times it seems that little progress has been made.

This is not so because of all the related aspects of the unstreaming movement. That movement itself must be seen as on-going and organic. At heart is the drive to individualise learning. Some primary and secondary schools have made immense strides already. Others are on their way. Meanwhile perhaps we should judge matters from the widest viewpoint in comprehensive schools. More and more teachers are working together to plan and prepare. Co-operative teaching is a new experience for older hands who almost certainly started out in fairly isolated classrooms. Unstreaming demands new methods, it is impossible just to go on as before. New curricular materials, resources and techniques

Training Teachers for Mixed Ability Classes: A Ten Point Attack

E C Wragg

Professor Wragg is Chairman of the School of Education, University of Nottingham, and is currently co-director, with Clive Sutton of Leicester University, of a four-year DES-funded Teacher Education Project, part of which is to devise training programmes for mixed ability teaching. He worked for a number of years in schools in Wakefield and Leicester, and spent seven years on the staff of Exeter University School of Education. He has taught mixed ability groups in a variety of situations, the most recent being a third year class taking Media Studies at a Nottingham Comprehensive School.

A few months ago I attended an international conference on teacher training in West Germany. The British delegation's concern about helping student teachers devise and use materials suitable for mixed ability classes was heard amid polite silence from the West Germans. As many German teachers had recently received letters reminding them that they were likely to be dismissed if they either used non-approved textbooks, or created materials of their own which had not been subjected to official scrutiny, such problems did not arise. My suggestion that they should inundate the bureaucrats with thousands of specially fabricated worksheets and booklets was received with weary amusement.

In Britain there have been substantial changes in secondary schools since 1965, not the least of which has involved the rapid spread of mixed ability teaching, particularly in the last three or four years. As part of a four year Teacher Education Project we have attempted to document the current state of play by conducting 21 case studies of mixed ability teaching which involved interviews with over 40 teachers and heads of department and live observation of lessons in various subjects. In addition we have analysed questionnaires from 40 heads of schools in the East Midlands.

At present the situation is fluid. There were 23 out of 40 heads who reported that mixed ability teaching was used in their schools, and whilst most of these thought the position was fairly stable, several described recent or imminent changes, as their heads of departments decided to extend or reduce mixed ability teaching in the various subjects.

The preparation of student teachers is nothing like so straightforward as it was when almost everyone teaching French used Whitmarsh and every other subject had its recognised 'brand leaders' and associated modes of teaching. There are great uncertainties within the profession currently, and few teachers would claim to have mastered fully the wide range of preparation, teaching and assessment procedures necessary for successful mixed ability teaching.

(continued from page 38)

have been devised. They in turn have helped in the improvement of reprographic facilities and in classroom or student use of audio-visual equipment. Central, well organised library-resource centres are being developed in schools or to serve groups of schools. Students are not necessarily tied to a desk, but can move to the resources as appropriate. Amongst other factors this had led to a re-thinking of the design and furnishing of school buildings..

Unstreaming is not the single cause of these kinds of development, but it has played a major part. If we are to maintain the momentum and consolidate successes, we must remember that we will be involving the majority of teachers and not just a few. We must enable teachers to adjust to this changing pattern and make their individual contributions within a flexible infrastructure in our schools.

Given such unresolved problems, a wide range of strategies must be employed when training students, and these should involve not only teacher trainers but practising teachers as well. I propose a ten-point attack which is not meant to be exclusive but rather to highlight some of the areas in which young teachers need to acquire professional skills. These are then further developed below.

Ten sets of skills for mixed ability teaching

Preparatory

1 Understanding individual differences amongst children in the class.
2 Understanding the importance of issues to do with language in the classroom.
3 Ability to be a member of a team.
4 Devising and preparing appropriate curricula.

Teaching Strategies

5 Using whole class teaching judiciously.
6 Handling small groups.
7 Interacting with individual children.
8 Developing flexibility and adaptability.

Evaluation

9 Monitoring pupils' progress and keeping records.
10 Evaluating one's own teaching and undertaking professional self-development.

A healthy affection for children, personality traits such as warmth and patience, a good knowledge of necessary subject areas, and a positive professional attitude are all regarded as essential prerequisites for any kind of successful teaching and are not included. On the other hand acquisition of the professional skills listed above ought to enhance teaching in any circumstances, not exclusively mixed ability work.

The four preparatory skills

Many studies have now been conducted into classroom life. Almost all have shown that classrooms can be busy places where teachers engage in as many as 1000 interpersonal transactions in a day, and where there is little time for leisurely decision-making.

In such a context adequate preparation before classes is crucial, and trainee teachers attempting to rely solely on robust self-sufficiency and deft footwork come to grief. Their downfall can frequently be attributed to lack of the first skill in the list, to a failure to understand *differences between individuals* in their class. They need to anticipate difficulties by knowing, for example, which children can work quickly and accurately, which need more time, who lacks self-confidence, or who is impulsive.

This suggests that early experiences on teaching practice should include work with individual children whilst the class's regular teacher works with the rest of the group. At every professional conference on mixed ability teaching experienced practitioners confess that they are not wholly satisfied that the quickest and slowest learners in their classes are receiving adequate attention. Intensive work with individual children can sharpen students' awareness of their varying needs, and they can learn the kinds of tasks which extend the brighter child and those which are appropriate to someone of limited ability.

In training institutions videotapes of different children doing reading or other tests, being interviewed, or shown at work in their classroom can be used to develop students' powers of observation. At Nottingham we use several videotapes showing children of different abilities and backgrounds performing similar tasks. Graduate students are astonished at the performance of average and below average children. Currently some two thirds or so of graduate entrants came through grammar schools, and many assume that 'average' performers on tests are slow learners, and are surprised when they see the performance of children receiving remedial help.

Acquiring experience in judgment making can be extremely heady, and when students have developed insights they need reminding of one of the reasons why mixed ability teaching arose, namely the 'expectancy effect', whereby premature and over-positive labelling of children may to some extent affect subsequent achievement.

The second aspect of preparation concerns *language in the classroom*, which has been the principal focus of attention of the Teacher Education Project team at Leicester University. Unless students are able to prepare worksheets, charts or blackboard displays which contain appropriate language, unless they are aware of the crucial importance of language in the classroom much of their teaching will be misguided.

A great deal of preparatory work can be done before any school experience. For example, students can learn

to apply readability measures such as the Smog or Flesch formulae to calculate the approximate reading age required for various texts. They can analyse transcripts of lessons, or study tape recordings of children talking amongst themselves during group work, as described by Douglas Barnes in **From Communication to Curriculum,** where he reports on conversations amongst children discussing a poem, investigating air pressure, or talking about a Saxon settlement.

Mixed ability teaching frequently requires teachers to work in teams planning courses, particularly in areas of the curriculum like Local History or Humanities where home-produced courses are common. My third demand, therefore, is for students to develop the considerable interpersonal skills required of a *team member.* When a department in a school plans a new course a considerable amount of forward planning is necessary: films must be ordered, visits arranged, rooms booked, assignments and projects devised, record keeping agreed, and if team teaching is involved the strengths of members must be brought out.

Student teachers can role play planning groups, working to devise a course called 'Man in Society' or 'Our Environment' and, where possible, trying out the course on a group of children. Teacher trainers face assessment problems when joint projects are undertaken, but these are not insuperable. If the training institution operates a half day or whole day 'school experience' system students can be attached in groups to existing teams of teachers and see at first hand an experienced unit at work. This is also a useful service to teachers, who, if consulted sufficiently in advance, can build a squad of students into their teaching programme, enabling them to undertake much more small group or individual work than is often possible.

Finally under this heading novices must acquire the inventiveness, sensibility and determination required to *devise and prepare appropriate curricula.* This is the culmination of the other three sets of skills. It is vastly more complex than has ever been the case with previous forms of grouping because mixed ability teaching poses more planning problems at both a macro – and micro-level. Since a greater variety of teaching strategies is involved, successful planning will require not only viable ideas for the whole group, but, additionally, appropriate individual and small groups tasks. The range of equipment and materials needed to sustain a group over a period of time can be immense, and if they are home-produced require substantial planning time and skill. Students who are inefficient in their planning will either suffer once their classes are in session and the effects of poor preparation become apparent, or will have to spend an inordinate amount of time every evening getting ready for the following day. The traditional 'Aim, introduction, development, evaluation' lesson preparation format is often totally inadequate when activities and procedures are of various kinds.

Four sets of teaching strategies

It is commonly said that whole class teaching has disappeared in mixed ability work. Our own studies of mixed ability classes indicate not only that it is alive and well, but also that it is in many cases the predominant mode of instruction. Hence the need for students to learn the *judicious use of whole class teaching.*

Most teachers find it more economical of time and effort to deliver instructions, show films, explain issues, demonstrate experiments, read stories, elicit group progress reports or summarise what has taken place, before the whole group, rather than separately for each pupil or sub-group.

The stand-up-and-talk skills involved are most important, involving the ability to chair proceedings with a group of thirty, to speak audibly and distinctly, to command attention, to explain clearly, and to listen to pupils. Hence any training programme which only exposes a student to individual and small group work does him a great disservice. Paramount here is the ability to maintain eye contact. Students can be videotaped in school and can watch themselves doing whole class teaching. Those who stare at their shoes, speak inaudibly or give ambiguous instructions can work specifically at this aspect of their teaching. Dr George Brown at Nottingham University has devised programmes to develop student teachers' explaining skills as part of our Teacher Education Project, and the improvements are often remarkable.

Small group work is used less frequently than one would perhaps suspect. Our research assistant who was specifically engaged in studying teachers' use of small groups in mixed ability classes had great difficulty finding such work. Consequently it is an aspect of teaching which needs considerable development.

In some ways it is easy for a student to acquire experience with a small group. What is more critical, however, is the ability to handle several small groups at once, often greatly different in size, constitution and task in hand, sometimes with changing membership. One prime tactic in this context is what football coaches call the 'split-glance', that is the ability to divide one's attention between the man with the ball and the rest of the field. In classroom terms Jacob Kounin, an American investigator, referred to teachers who could work with one group but keep a vigilant eye on others in the room as possessing 'withitness'.

As part of the Teacher Education Project we have made a special study of student teachers' class control problems. From a total of 56 case studies we were able to identify 'flashpoints' when management problems were most noticeable. One of the more frequent occurrences was when a class split into groups or was working in groups. Competent managers had devised clearly defined tasks and managed to sustain a high level of work. Less competent students lost control and anarchy developed, particularly when the task was not clear or when groups completed their work earlier than anticipated.

The third skill in this set, that of *interacting with individual children*, is a vital one in mixed ability teaching. Much of the criticism of so-called informal teaching is directed at teachers who are unable to secure a high degree of industry from children working on their own. Frequently the teacher has under-estimated the amount of independence which children need if they are to handle individualised learning successfully. A further complication in the British concept of individualised learning is that, whereas in the United States large numbers of commercially produced unit-type packages are available, allowing mixed ability groups to pursue a linear programme at different rates, our version has been based on individual worksheets and assignments devised by the teacher. Students, therefore, need to learn the whole technology of creating individual assignments and monitoring individual progress, a process which requires considerable imagination and dedication before, during and after lessons. Indeed great mobility is required in the classroom, and the static teacher cannot hope to make the necessary contacts with each pupil.

Finally there is the question of *flexibility and adaptability*, as much personality traits as learned skills. If groups and individuals are engaged in several different activities, myriads of decisions must be made during lessons. Operations thought to need an hour may be completed in half the time or require twice as long. Successful mixed ability teaching demands a wider range of professional skills than was required for any previous form of grouping. Inflexible teachers will not be able to make the necessary adjustments to new tactics in mid-lesson and frustration will result.

Two evaluation skills

Mixed ability teaching has called into question the whole assessment process. Some teachers claim that *evaluation of children's progress* should be played down, others contend that what is taboo in mixed ability classes is matching a child's achievement against some notional group mean, but that regular assessment and recording of children's progress is, if anything, more important than in traditional forms of grouping.

Here again student teachers need to learn a wide range of assessment techniques and develop an awareness of when and why to make evaluative judgments. Many home-produced mixed ability programmes culminate in a CSE mode 3 examination, and a young teacher can find himself involved in devising and testing a CSE mode 3 syllabus in his induction year.

Perhaps more important than the evaluation of children's work is the *assessment of one's own teaching*. Since induction year schemes are non-existent in some parts of the country and secondment is a rarity, one must accept that young teachers will not readily obtain opportunities for professional renewal. Thus they need to learn ways of appraising and improving their own teaching.

At Nottingham we are currently developing procedures for pairs of students to work together on teaching practice, each taking it in turn to scrutinise the other's teaching and be studied himself. Ultimately improvement in teaching only takes place when a teacher decides for himself to change his teaching. Indeed it is probably the present group of trainees who will one day devise and implement better forms of grouping than mixed ability classes. Any training procedures which merely report contemporary practices to the next generation and no more, are unnecessarily conservative.

How Unstreamed are Infant Schools?

Annabelle Dixon

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Mention 'streaming' or bring up the subject of mixed-ability teaching and very few will think in terms of the infant school: the impression seems to be that infant classes represent the ideal mixed-ability teaching situation (or otherwise, depending on one's point of view). It could be argued that a considerable amount of the inspiration behind the establishment of mixed ability classes was derived from the observation of the successful attitudes and learning of children in infant classes who were 'unstreamed'.

Mention streaming to latter day infant teachers as I have been doing recently, and there is indeed an instant denial of its existence in either school or individual classes; ask how they 'group' their children and the answers lead one to reflect on the use of language if nothing else. 'Streaming' seems to be treated as an emotive term rather than a possibly practical means of sorting children for teaching purposes. 'Grouping' on the other hand, appeared to have no such emotional charge and there seemed to be little unwillingness to discuss the various methods, even if grouping by ability appeared to figure amongst them. While I would hesitate to assert that many infant schools actually grouped their separate classes by ability – although the personal memory of teaching a 'D' stream infant class on final teaching practice still bears the scar tissue – I believe that many infant classes still maintain a system of grouping which suggests that a hidden system of streaming still exists. The possible reasons for this seem to me interesting and various and I would like to detail them below as I think it relevant in the understanding of future developments and indeed the present situation in infant schools, but my main point is to challenge the assumption that in infant schools at least, the case for non-streaming has already been won.

Open-plan schools give a particular reason for examining present day grouping of infant classes more closely. Their many disadvantages for children of infant age, which practising teachers in such situations are not slow to point out, include the insidious effect they are having not only on the principle of the integrated day (the increased competition for limited resources is seeing to that) but also on the way in which children are grouped. This is particularly noticeable when the teachers in such a situation have decided, or it has been decided for them, that they should have 'overall responsibility for particular areas of learning'. Cut away the jargon and in most instances this means one teacher teaches Maths and the other English. When that includes responsibility for nearly seventy children the sheer

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Implications

There follow two major implications for the profession. First of all there must be sufficient flexibility in schools to allow innovative training procedures to be accommodated. If students are to make a gentle start, working initially with individuals and small groups and gradually building up to the whole class, then this work must be built in to the school timetable in good time.

Secondly a mature profession is necessary for many of the proposals described above. Surgeons who devise new techniques often demonstrate to their peers or to trainees either live or on videotape. Teaching has traditionally been more closed and less open to inspection. When teachers help to train students their own procedures come under close scrutiny. It may be embarrassing when working with a student on, say, the readability of workcards, to discover on analysis that one's own creations for a mixed ability second year class require a reading age of 18. On the other hand, in view of the uncertainties which many teachers express about the best ways of handling mixed ability classes, having to put one's own procedures under the microscope with keen and sharp-witted novices may be a healthy and rewarding form of professional self-development, even for very experienced practitioners.

logistics underline the need for some kind of basic organisation, which in turn means grouping the children according to pre-selected criteria.

With the regression to 'subject' teachers for children of infant age must go the abandonment of integrated learning and the erstwhile stress on the importance for effective teaching (if for no other idealist reason) of knowing and providing for, the 'whole child'.

This does not necessarily reflect the individual teacher's own personal ideas however and it should be stressed that several of those I asked, who work in open-plan teaching situations, felt that the architectural and resource limitations forced methods upon them which they would not have had to employ had they been teaching in traditional classrooms. Others who would have had a more time-tabled day for infants anyway did not feel this to be one of the main disadvantages. The methods of grouping infant children within these open-plan situations did seem to give some kind of indication as to the fundamental priorities held by individual teachers, and/or headteachers, and varied from straight ability grouping – usually, but not necessarily, based on level of reading ability, and sometimes paralleled by a separate grouping for number work – to grouping based on friendship (as perceived by the teachers). Another method included making 'mini classes' i.e. the children being split into small groups each roughly representing the range of ability to be found in the class.

One feature in common worth noting was the sometimes elaborate means by which the grouping was concealed from parents, even if the criterion used was not ability, as it was thought that it would automatically be thought of as such. Those who used ability grouping also seemed to consider that it was worth attempting to conceal the fact publicly. The reasons given were that parents would demand to know why their child was in one particular group and not another, or that they would denigrate and label those in the lowest groups, the overall impression being that the ill effects of such grouping could only come by outside 'interference' – a point to ponder on both educational and sociological grounds.

Although perhaps not quite so extreme as an American six year old's explanation to me of his previous class's organisation. '... see, you couldn't move to the Math table till the Donald Duck table had finished with it and the Yogi Bears were always quicker', the accent certainly seemed to be on a system of naming that could give no clue as to possible ability rank. For instance the children themselves were sometimes asked to name their own groups, the theory being that it would be difficult to discern whether a daisy was a higher form of intelligence than a cornflower. Colours seemed to be the most popular method of naming groups, however, and in most instances a deliberate effort had been made to avoid simple colours that could be readily identified with certain ability groupings. Thus in place of red, green and blue, for instance, one school now has russet, mauve and orange. It is admitted that in general this system does not really succeed – just that the parents now take slightly longer to work it out. Some open-plan schools, in which three classes share resources and in which each teacher has her own subject, pride themselves on teaching individually: what this appeared to mean in practice, in two schools at least, was that the teacher responsible for reading, for instance, did nothing all day except hear ninety children read from their reading books.

Open-plan constraints

A few teachers did seem able to manage an open plan situation without grouping and the units ran as two independent classes linked only by their common fortitude in the face of the practical problems presented by the physical limitations of open-plan design. However there was a feeling amongst other teachers that to run a unit in such a way was to 'waste its potential'. I think the claims for apparent 'potential' especially with reference to infant children, is worth looking at as it seems, inevitably, to involve grouping and to some extent, timetabling. The argument runs that with two teachers there is double the strength of talent and that this should be utilised to benefit the children. In reality the odds are by no means that one is conveniently 'good' at maths and the other at creative activities or teaching reading etc; while a poorer teacher might be compensated for by the strengths of another it might also be that the latter, by having to spread her talent over the teaching of 70 children, is not even able to do her own job well.

What is also reported as happening is that young teachers may teach for three years, say, and have next to no experience of teaching infant children maths or any other subject in which she and/or the Head consider her rather weak. Where this is perceived to be a risk to the professional development of a teacher, the 'subjects

are swopped around so that each term or half term or year, children are virtually taught by a new teacher with all the loss of information about the children's previous experience and learning problems that this entails.

Detailed record-keeping which is offered as an answer to this problem of continuity rarely tells what a child has actually learnt – only what processes he has been exposed to. There is also the important loss, mentioned above, of being able to integrate children's learning so that a mathematical follow-up can be taken not only easily, but what is essential for infants, immediately from an interest in, for example, some aspect of natural history or music. Admittedly this may not figure largely in the teachers' priorities, but whereas in an ordinary classroom setting, the opportunity to do so existed and the teacher might have been led to try to teach in this way, open-plan organisation would seem to militate actively against it, especially if its 'merits' are those of supposedly linking the teachers' talents with grouping for subject teaching.

If I have concentrated on open-plan classes it is because there seems to be a greater tendency to group infant children in such classes and one of the most popular methods of grouping still seems to be that of ability – even if, interestingly, efforts are made to disguise it (which suggest a certain internalisation of the attitudes thought publicly acceptable). It is this psychological aspect relating to the ways in which infant teachers group their classes which I find of particular interest. The Barker-Lunn study on streaming may not be considered the most avant-garde piece of research to quote in 1977 but one of its most relevant findings to me, from the point of view of psychologist rather than infant teacher for the moment, is the distinction it draws between the 'streamer' type of teacher and the 'non-streamer'. It was noted in the study that there was considerable dissatisfaction expressed by 'non-streamers' who were having to work in ability-streamed schools, and likewise by 'streamers' who were working in unstreamed schools. The type of school by no means altered the basic attitudes of such teachers, even seeming to strengthen them, in fact.

Up to now, attention seems to have been concentrated on the differing educational ideals held by the 'streamer' and 'non-streamer' types of teacher; less attention seems to have been paid to the cognitive style of the different teachers concerned and I think this is fundamental to the way in which teachers structure their classrooms and affects their entire teaching strategy. If, as I believe, an infant classroom is a fairly accurate reflection of the furniture of a teacher's mind, the means by which the children are grouped or not grouped also says something about the way in which he or she thinks: not *what* they think necessarily, but *how* they think. Although the following suggestions are speculative, if nothing else they might serve as a basis for argument.

I personally find Liam Hudson's classification of thinking styles as divergent and convergent illuminates many situations and I would like to suggest that it is relevant to this issue. It has been argued that difference in thinking style may well be related to the degree to which an individual can tolerate anxiety, Hudson's 'convergent' thinkers being less able to do so than 'divergent' thinkers. Grouping children could then be seen as a way of closely controlling the classroom situation, thereby reducing the anxiety produced by an apparent lack of obvious structure, and grouping by ability could be seen as a further refinement. Those who might be described as divergent thinkers, on the other hand, are perhaps those who are more attracted to a style of teaching which is more open-ended and flexible and certainly less bound by rather rigid categorisations, and who are able to think in terms of a fluid and changing social structure within the classroom without experiencing an uncomfortable level of anxiety.

Inadvertent retrogression

If this is the case, then perhaps there should be less surprise at the number of infant classes that are still grouped by ability in whatever disguise. J B Thomas's study of the relationship between pupils' self-concepts and school organisation indicates that, for older pupils admittedly, a 'streamer' teacher in an unstreamed teaching situation has a noticeably worsening effect on the self concept of the average and below average pupil than a 'non-streamer'. It could be argued that these teachers' anxiety level was higher in such an unstructured situation and that the answer for the moment may not lie in trying to convince such teachers by argument but by suggesting alternative forms of grouping e.g. by friendship. This, too, is not altogether without its drawbacks, as young children's social groupings are essentially and perhaps necessarily, fluid over time and also change with the task being undertaken (Oeser). Nonetheless it should be recognised that infant schools by no means represent the ideal mixed-ability unstreamed teaching situation that it is

Mathematics and Mixed Ability Grouping

Philip Sherwood

Philip Sherwood has been a headmaster in Leicestershire for the past twenty years. He has attempted to interpret the innovative ideas of Dienes, Varga, etc, for classroom use. He edits a journal 'Z' for those interested in these ideas.

Modern educational jargon and abbreviation tends to bewilder me. I have never had 'mixed ability grouping' explained and defined to me. I take it to mean 'unstreamed' and to imply the approach to learning typified by the Swedish I.M.U. Programme (Individualised Mathematics Instruction). The expression is current and modern, the practice has been with us for a century or more. It was the mode at Tolstoy's school, but if you find his educational approach too anarchistic perhaps you will accept a not untypical Victorian village school in the days of Payment by Results, sixty on roll, one certificated teacher (Miss E M Castle) and a monitor paid out of her slender salary. There were thirty-one separate groups in the class, not counting the infants who played with their bricks in the midst of it all. Miss Castle admitted to the members of the Commission on Elementary Education (1886) that 'it was Bedlam trying to get sixty children up to the standards' but she realised that the only way to do so was by working with thirty-one separate groups and using her own sitting-room as a 'private study area' for the children. In the midst of this Bedlam she managed to teach violin. She found time to play with the infants and declared 'I will not believe in learning and it being made a drudgery, I like to hear them laugh'.

Compare that with Jubilee Year 1977 and a High School Head of Department defending the very rigid setting 'sheep and goats' regime of a Leicestershire school. He was being baited by the staff of a local junior school and in fairness was defending a system for which he had no enthusiasm. He had calculated that to run his department with mixed ability grouping would require each member of staff to work an additional twenty hours a week. 'And where do you find teachers with that much dedication, particularly a married man, with say two children?' His junior school colleagues listened with awe and astonishment, as of course would Miss Castle (unmarried, no recorded children).

He was right. Class teaching with its attendant setting, streaming and selection is easy. If as frequently happens I find myself standing in at short notice for an absent teacher, I never attempt mixed ability or individual work. A class lesson is easier, neater, less demanding and requires minimal involvement by me. I am never very proud of my performance. Our classes are unstreamed, individual work is the commonplace and my class lesson, particularly in mathematics can only be appropriate for one level of ability, for some it will be too easy, for many too difficult. I accept that I could vary the levels of difficulty in the work set but I know from long experience what Miss Castle knew, given sixty children you need a minimum of thirty-one groups. In no subject is this more true than in mathematics.

I was a mathematical 'drop out' by the age of twelve. I was caned for my elementary school incompetence, the subject was used to make Saturday afternoon detentions insufferable. I was well plied with mnemonics like 'change the sign on the bottom line and add', 'turn the divisor upside down' etc, but I realized that I was 'dropping down the ladder rung by rung.' There seemed little point in trying to reclimb. No subject has quite such well-defined limits of minimal competence.

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sometimes imagined and that, sadly, open-plan schools, whatever their original intention, appear to be having, if anything, a retrograde effect.

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You may write English, and I frequently do, with scant regard for the importance of paragraphing, but attempt mathematics with only minimal awareness of place value and you will find yourself in a morass. Awareness of something symbolised as H.T.U. is less than minimal.

Having decided to leave mathematics to others I bluffed my way through an engineering apprenticeship and found that with a few stereotype techniques it was possible to survive at least at technician level. Engineering schools then were quite capable of teaching the techniques of transposing formulae without complaining aloud at the inadequacy of the nation's mathematical education. When however, I came to teach I realized that my own mathematical incompetence together with my jaundiced view of the subject and those who taught it, presented problems. I concluded that my own difficulties were the results of bad teaching, coercive methods and the inability of my teachers to see when I was floundering or foundering. They could not see the latter because they only had eyes on the ultimate, getting a maximum of us through to grammar school and a maximum of that select group through to matriculation. Noble aims. At that time I was a great admirer of the Victorian artist, Lady Butler. She painted imperial triumph and disaster with rare panache. Her 'Remnant of an Army' should hang in every staff room, it shows Dr Brydon on a spent horse staggering into Jelalabad, all that was left of the thousands who had invaded Afghanistan in 1842. Our present day Remnant of an Army is the few who survive the system to collect its ultimate accolade – A level passes. No one is unduly concerned with the stragglers cut up along the route. I suspect that Science and Mathematics have the lowest survival rate. No doubt because the stragglers are eliminated at very early stages and are most vulnerable.

To avoid driving all my class at one pace toward the first hazard (the 11 plus) I used Beacon Arithmetic Books and let children pace themselves. Although the field spread quickly no one opted. out. The text books were well written and the children's difficulties anticipated. As we drew nearer the 11 plus I shamelessly concentrated on Moray House 'banker' questions, the ones that were certain to appear. The results were acceptable and there were no casualties. I did not delude myself that I had taught mathematics, but at least by individualising work I was able to devote more time to children who needed help at critical moments. I was aware that it was a negative attitude to a subject that deserved better. I did no great harm – and no great mathematical good, although no doubt I would have earned Mr Callaghan's praise, those children could 'do' sums.

I would have still been teaching children to 'do' sums with Beacon's successors Alpha and Beta, or Fletcher, had not some maverick Leicester University lecturer (Z P Dienes) come into my school and started children 'playing with bricks' in the midst of it all. I had a sudden glimpse of what mathematics was about, I could watch ideas explored, see children reaching conclusions that had eluded me and listen to them talk out loud their thinking. I was humbled to find a ten-year-old who devised his own approach to long division in multi-base systems and who could explain his method to me without being over-patronising. It was creative mathematical thinking; I had never encountered it before.

It was an auspicious time for innovative teaching. The 11 plus was in decline, at least in Leicestershire. Piaget had been discovered live and well and living in Geneva. (He still is, though you might not believe it) and the Inspectorate under Edith Biggs was looking for ways to implement the 1955 Report of the Mathematical Association on the teaching of Mathematics in Primary Schools. Miss Biggs was insisting that 'The first aim is to ensure appreciation of the subject, its purpose, the order and pattern of numbers as well as of geometrical form; and to elicit an aesthetic awareness of mathematical shapes and patterns in nature as well as in the products of our civilisation. A right attitude is all important, appreciation of mathematics must come first.'

Dienes was writing 'the motive force for mathematics learning should be the thrill of discovery, not the dubious aim of getting a higher mark than somebody else or the kudos of a prize. It is possible that by encouraging the joys of doing rather than of having we shall be helping to bring up people whose behaviour is not entirely determined by self interest.'

It was a climate that fostered innovation and experiment. With a few enthusiastic members of staff we began to build up an individualised mathematics programme which would allow time for 'playing with bricks' and learning from them, which allowed not only for different rates of learning but also different ways. We are still at it. The bricks become more subtle, more colourful and the scope of their use extended beyond our expectation (and background mathematical knowledge). We have learned with the children. The 11 plus disappeared – underground. We began to see ways of using our ideas

so that those willing and able could explore mathematics at levels we had not thought possible. Unconventional topics like mathematical groups could be introduced via games and colouring activities. For some the activities themselves would be intellectually demanding enough, for others discovering isomorphisms between the games would seem sufficient while for a few the mathematical properties of groups would be stimulating. One problem we are encountering is that the capability of children is unpredictable. It is no use imposing limits. To say of a first or second year junior that 'multi-base number systems will only confuse, better stick to denary' is to risk finding at fourth year level that he is capable of using those ideas – and needs them. I am now less certain of who is capable of attempting 'advanced' work or even what is advanced.

Over the years we have built up our resources of materials, assignment cards, worksheets and ideas. This imposes no limit on the work which children attempt. It does not preclude teachers from introducing their own ideas or topics. The idea of developing a class topic on Time is not regarded as heresy. We use any mechanical device that will serve to teach facts that are best learned mechanically. Computational skill is assimilated via the bricks and Bruner's 'iconic' modes. We have never let 'syllabus' dictate our style of working. Groups have faded from the 'O' level syllabus, we still like our children to explore them, they have an elegance that we can both enjoy.

I have said that the 11 plus has disappeared – underground. In our part of the world it persists as it must do in many. In September when our children reach High School they will be 'unstreamed' for all of two weeks during which time they will sit a series of tests in basic arithmetical skills and be 'set' (or 'setted') on their performance. The tests will not attempt to test mathematical aptitude, such tests are rare and difficult to administer. They will assess computational skill and the ability to beat the clock. Normally our children would be ill-prepared for such an experience. We have never found any use for testing other than diagnosis. I have always thought mathematics a 'reflective activity' and have never associated speed with reflection. I cannot alter the situation and would agree with Stewart Mason when he said of the 11 plus, that only the very worst headteachers 'were prepared to allow it to distort the curriculum'. I do not allow the underground 11 plus to distort our mathematics curriculum, but I bend it ever so slightly. Once a week I set a test of the sort they will experience at High School and leave children to do it in their own time–and another portion of my integrity is eroded.

The work at the school has brought contact with others attempting similar approaches, Tamas Varga in Hungary, Nicole Picard in France, Dr Abele in Germany and Esther di Grossi, a Brazilian mathematician from whom I am still learning to samba. When Nicole Picard came with a colleague to the school she wanted to see a High School mathematics class. I took them to Oadby Manor High School and there we saw a maths lesson which mirrored our ideas and yet modified them to meet the constraints of secondary education. Where in our class children would be working at many different levels and topics, there the class worked at three levels and one general topic. The atmosphere was relaxed, children were enjoying real mathematical activities at quite complex levels, only the approach and method was varied. The French mathematicians became involved with children playing a vector game, they were impressed by the mathematical 'edge' of their opponents. This was no 'put on for visitors performance', it was mixed ability learning, for all abilities, with a rigour to match levels of competence.

I mentioned the Swedish I.M.U Project. This was intended for use in an 'unstreamed' classroom, work was individual, self-pacing, with opportunities to sidetrack and pursue topics and ideas. Swedish children are normally separated at Grade 7 into those who will need mathematics professionally and those who will need only everyday competence. The two groups are then taught separately. Schools using I.M.U. made no such distinction, all worked together. I would like to record that this was a great success, sadly only a few schools still use the approach.

Hidden streaming

Within an unstreamed class there may exist 'hidden streaming'. The children can be grouped by ability with each group working at various ability levels. I have encountered this indirectly. Children transfer to us from other schools and I am sometimes assured that they sat at the 'good' table. They rarely settle easily and resent the fact that we have no 'good tables'. The discovery that they are not so good as they had been led to believe is somewhat traumatic. In whatever way a class is organised it is both inevitable and desirable

that the field will 'string out' and there will always remain that element of 'hidden streaming'. If no particular virtue is ascribed to being ahead on any series of assignments, if there is opportunity to work together with the more able assisting and collaborating with slower children, then in our experience there is neither resentment nor feeling of inferiority. Mathematical skills are diverse, not all children are equally endowed but it is not too difficult to find some area in which they can achieve that one element which most influences motivation, success.

I have implied that there are advantages to the unstreamed situation. It does reduce the 'casualty' rate because there is always time to ensure that competence and understanding are surely founded. It does not 'imprint' failure and reduces the tension and stress to which John Biggs attributed many of the emotional blockages so prevalent in mathematics learning. The major drawback is that it imposes far heavier demands on the teacher. Unless that is recognised and accepted, attempts at mixed ability work in any discipline will not only fail but also bring into disrepute innovative work generally.

Within the primary school there has been an ideal climate for experiment and innovation. It is a climate that is changing with the threat of TAMs (Tests of Attainment in Mathematics) and the Assessment of Performance Unit. I do not feel menaced. I know that there is a zest for mathematics in the school. I know that within the school mathematical environment children are stretched fully but never threatened either by failure or lack of progress. We are keen on swimming at school, nothing delights me more than the seal-like 'at homeness' in water of the children, except that same recognisable 'at homeness' in mathematical depths. I suspect that when TAMs come our way we shall not fare too well. Conventional tests will not measure what we attempt. Conventional teaching best matches conventional tests as Bennett's Teaching Styles research shows (that and little else). Conventional teaching and testing contribute most effectively to the 'Remnant of an Army' scene. Miss Castle's strategy will ensure no mass massacre of stragglers; thirty-one groups to sixty children, plenty of bricks to play with, a minimum of drudgery and some laughter, lastly a very real concern for the best interest of the children. Unless you are committed to these, stay with the well-streamed class, a good text book and even better answer book; some will survive.

The Banbury Research

The report of the first phase of the very carefully conducted Banbury Grouping Enquiry came in just as we were going to press. The subjects of the enquiry were 2,000 pupils at Banbury school, organised into 'Mixed Ability' and 'Streamed' Halls (or houses). This provided an ideal set-up in which to study the academic and social effects of different forms of organisation. The study clearly merits full attention by **Forum** readers, and will be reviewed at some length in our next number. Here a few of the main conclusions only may be referred to.

First, as far as academic progress is concerned, the results of the two systems are generally comparable; that is, in general terms, neither can claim an advantage. However within this there was 'significant evidence' that 'low ability children gain in the mixed ability system', while there is 'little to suggest that high ability children may be held back'. The study also found that there was more mixing between ability groups in the unstreamed than in the streamed system, as also that more friendships are formed across social classes in the unstreamed situation. It was also found that there was a better attitude to form placement in the unstreamed situation, as also to the school generally.

Many other of the research results are of great interest —for instance, the analysis of teacher attitudes to the different systems. This clear and precise report is of especial interest to educators coming, as it does, at a time when non-streaming in the early secondary years has come under such wide (and well-publicised) attacks from people who should know better. David Newbold, the author, is to be congratulated on producing a most useful short and readable report, based on a mass of data 'delivered to' the DES (which funded the project) in 1975. Its circulation around the corridors of Elizabeth House might, perhaps, be expedited to advantage.

Ability Grouping—The Banbury Enquiry is published by the National Foundation for Education Research; price £4.95.

BS

Mixed ability teaching in the middle school—a personal view

Arthur Razzell

At present headmaster of a Surrey Middle School with about 700 pupils, Arthur Razzell earlier served for seven years as head of a large primary school on a South London housing estate. He has been Lecturer in Child Development, London University, and was Senior Project Officer, Lancaster University Research Project on Middle Years of Schooling.

Before any useful comments can be made there seem to be several points that need clarification so that the topic may be put into a realistic perspective:

(a) We do not, as a nation, tend to implement with any zest the official reports on education which are produced from time to time almost as a matter of conscience. Thus when Anthony Crosland (Labour), received from the Plowden Committee the Report which had been asked for by Sir Edward Boyle (Conservative), very little happened apart from a wave of headlines in the national press which spoke enthusiastically about a 'new deal' for primary education. The main recommendations of that eleven-year-old report have yet to be implemented, for example, most of what was said about nursery education and about the establishment of a system of first and middle schools. All that we have at the moment is a comparatively small number of middle schools randomly scattered across the country with a variety of age-ranges and little chance of many more being created. The concept of first and middle schools seems dead; such middle schools as do exist were the product of the educational mustard-and-cress sown during the last decade. The new rotation of crops fascinating our masters at the present time would seem to involve the growing of sixth form colleges and some of the arguments supporting this development make sense, at least at the economic and expediency levels, if not on sound educational grounds. All this adds up to the fact that when talking about middle schools we are discussing minority-type institutions which have had little time to develop any clear distinguishing characteristics.

(b) Even in these days of instant change, some allowance needs to be made for the time-lag that inevitably exists between the opening of a new school and its ability to function properly as an institution that is representative of its type. The middle school where I am working now is a not untypical example. It was opened in 1972 as a purpose-built, Plowden-type, middle school designed for a four form entry. It will not be until 1980 that our *first* group of children will leave the school having had a 'normal' four year course in an 8 to 12 year middle school. Even these youngsters will have had to make-do to a certain extent, for we have had to manage with a five-form entry in a building designed to house a four-form entry. Whilst sympathising with the anxiety of outside observers to assess the value of such new schools, it might make sense to give them a chance to develop a little before too much critical evaluation takes place. They need to be weaned before being made to sit their O-Levels.

(c) Some consideration should be given to the external pressures brought to bear on many primary schools to effect somewhat rapid changes at a time when it might have been felt that many of the schools were somewhat ill-equipped to cope with major changes of philosophy and organisation. The Plowden Report quoted Jackson's 1962 survey[1] which showed that only four per cent of junior schools had rejected streaming. Only a few years later the results of the Plowden Committee's own enquiry[2] seemed to indicate a considerable shift of opinion – by this time only 34 per cent of the teachers surveyed approved of streaming for 'all or most junior children'. There are several variables which may account for part of this quite dramatic change, but it seems more than likely that one of the main causes, if not *the* main cause, was the great upsurge in interest in the late 1950's and early 1960's in what

has come to be generally recognised (if not adequately defined) as progressive primary education. A wave of HMI and LEA courses and conferences extolled the benefits of a more open, liberal, active course of studies for primary youngsters, to replace the somewhat sterile approach common to many schools of that period.

There were a few, very able, dedicated primary teachers, who offered a vision of what was possible in the education of young children. They showed something of the quality of work possible in mathematics, in science, in written language, in movement and indeed, in the whole range of the expressive arts. Their schools were visited, their techniques studied and reported on in considerable detail. What they did was seemingly easy, as so much that is undertaken by skilled artists and craftsmen appears easy. It could be that those responsible for teacher training, both initial and in-service, underestimated the professional qualities of these teachers, for it was *that* which enabled them to teach at this level of excellence.

In an effort to bring about a speedy reformation of teaching at the primary level a mass of short (often only two-day) courses were offered – the new maths, science to replace nature study, vertical grouping, the integrated day, project and topic work, mixed ability teaching – course after course, in their scores and in their hundreds. Many of these short courses called for teachers to make basic, fundamental deep-rooted changes in their *thinking*, not just in ways of organising their classes. The hard won advances made by that small band of dedicated pioneer teachers over a period of many years, were now being offered and widely advocated, on an almost instant-change basis. Did we overlook the fact that many who were urged to make a whole range of changes might include those who lacked the skills to make such changes with any real hope of success, *unless* the changes were made slowly and thoughtfully, and based on a sound understanding of their educational value?

The Plowden Report has encapsulated a picture of the state of the primary schools at this time. Paragraphs 878 to 885 make sombre reading – 'We write at a time when, despite all the efforts of our colleges of education, the primary schools are still 20,000 teachers short of the number needed on present staffing standards'.[3] 'Many authorities are in a permanent state of emergency and thankful to recruit *anyone who can keep a class occupied*' (my italics).[4] It is perhaps conceivable that after decades of shortage and neglect, much of it justified in view of the tremendous expenditure necessary at the secondary and tertiary stages of education, some cumulative deterioration might be expected at the primary level. In evaluating the success or failure of 'modern primary methods', some account must surely be taken of the resources available in the schools when they were expected to do so much and so quickly.

(d) When we come to consider mixed ability teaching it seems important to recognise it for what it is. In essence it is no more than an organisational device which researchers may study until they go blue in their statistics, but which is likely to prove as neutral in its overall effect as open-plannedness and integrated-dayness. Almost certainly in the hands of a skilled and enthusiastic teaching team it will be found to triumph magnificently. In the hands of a group of reluctant Deadwood-Dicks, coerced into making the change by an over-zealous local adviser or headteacher, it will fail dismally. And almost certainly we would expect to find a range of other levels where 'inbetween on the murky flats the rest drift to and fro'. When the chips are down, it would be impossible to find any organisational device in primary education that has not, in the last resort, depended for its success or failure on the quality of the teachers involved. Mixed ability teaching is no exception to the rule. It is unlikely to provide an overall solution to any major educational problem, but in certain conditions it may well provide the sort of situation where the quality of the learning and the teaching may be vastly improved as a result of its adoption.

(e) Any evaluation of mixed ability teaching seems likely to be made more difficult by the fact that few schools are completely doctrinaire in their approach. It is rare, almost to the point of uniqueness, to find any type of organisation or any methodology existing in a pure and unadulterated form. Even the great Neill had to make some compromises, and in the state schools, it is often the carefully considered and wisely applied compromise that makes all the difference between success and failure so far as the children's learning is concerned, and between acceptance or rejection by the local community.

(f) The first middle schools came into being at the height of the post-Plowden euphoria, and in the climate of the time it seemed almost to be taken for granted that such schools would adopt a year-group structure with, in the main, mixed-ability teaching. Since those heady days of the late 1960's, when so much seemed to be possible, the chill winds of economic adversity have blown down the educational corridors and some of the

visitors who come into the schools appear to have donned fresh protective overcoats. The questions that many of the inspectors asked with such vigour in the past seem also to have changed with the climate. If the key question asked in 1967 was 'Do you adopt a discovery approach in the teaching of primary mathematics?' Then perhaps the key question for 1977 is 'Do your children know their tables?'

The research evidence which might conceivably have brought about this change in emphasis is hard to find. Some slender studies have been undertaken, but it is a subtle change in atmosphere which has won them such startling press headlines rather than the depth and dedication of their scholarship. Certainly nothing has been undertaken that has studied the schools in such depth, or canvassed informed opinion so widely, as the Plowden Report. It might still have a place on our bookshelves, but the contents seem largely forgotten. At least by those holding the purse-strings.

At Ravenscote, we have adopted mixed ability teaching, not as the result of any deeply held conviction that this is the *right* way for a middle school to be organised, but simply that, on balance, it seemed likely to result in better teaching and better learning than any of the possible alternatives open to us. Maybe, had the children arrived at the school neatly packaged and reliably classified as 'highly academic', 'average ability', 'slow learners', 'Late developers' etc. etc., and had these youngsters come in regular form-sized groups then it *might* have made sense to have adopted a form of streaming by ability, provided the teaching team could have been equally clearly classified into those with special gifts to teach each clearly designated group of children. Thank God nothing of the sort happened. We were, and are, a community of human beings, all gloriously and blessedly unique – mixed ability teachers working with mixed ability children living in a pluralistic, mixed ability society. Having made that claim, it would be unwise to make the further assumption that, as a school community, we should therefore expose all children to the same 'class lessons' with the same content and assignments, all geared to a notional norm for the group. A curriculum designed for the average child taught by the average teacher. Far from it, a cynical outside observer might judge that we are, in some respects, an elitist school where clear provision is made for the high flyer to fly as high as possible, and for the slower learner to follow a programme of work tailor made for him by the form teacher advised by our remedial consultant. Our concept of mixed ability teaching involves considerably more than the regular diet of class lessons, although these clearly have a place.

Much of the curriculum is implemented through group and individual activities, some of which are highly structured and provide a clear progression leading to the development of certain skills and concepts, but there are other assignments where the progression is less precisely planned, so that there is the opportunity for the individual growth of initiative and the development of personal learning skills. *All* these approaches call for, and receive, careful monitoring. Too much freedom of choice, given before a child has developed the skill to choose wisely, can be as destructive to healthy growth as too little freedom. Our close observation of children in the on-going school environment over the past five years has led us to the inescapable conclusion that there is no regular pattern of development that is clearly discernible in all children of a given age at a given time – at least not in *our* community. The 'mix' needs to be right for the individual, not the stream, or the form or the Year Group.

Diversity ensured

As a team of professionals, we make certain judgments about what we think it right for children to know, or to know how to do, for a considerable part of their schooling, but there is also the expectation that the children themselves will be active participants in living a full school-life – perhaps wanting more of certain elements than of others. Thus for example, in music, we have made the judgment that all pupils should follow a course of study which, amongst much else, includes learning the skill of sight-reading and how to play the recorder. A minority go on to play the clarinet, oboe, violin, French horn and other instruments of the orchestra or to become members of the choir. But this is not a pathway that all choose to follow, their interests and enthusiasms may well flourish in other aspects of the curriculum. It is part of our job to ensure that there is a rich provision of opportunities and resources and by far and away the chief resource is the skilled teacher, observant and with an informed mind, ready to take the child at the flood and lead him on.

So often in educational debate, the obvious becomes overlaid with a host of subsidiary irrelevancies and this is nowhere more clearly demonstrated than in the

'Topping and Tailing': A Cautious Approach to Mixed Ability Grouping for Mathematics

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Implicit in any discussion of mixed ability grouping for mathematics in secondary schools are the issues concerned with the merits of streaming and setting. The social implications and educational outcomes of numerous setted and mixed ability schemes have been discussed elsewhere[1] and so it is not my intention in this article to do other than relate something of my own observations and limited experience.

Before relating what I have described as a cautious approach to mixed ability grouping, it seems pertinent to take a brief look at the background against which such schemes have been and still are developing.

The tremendous change in the structure and content of our syllabuses during the past decade or so has come about for many reasons. Many would argue that the change has occurred because of the belief by teachers of mathematics that there are now fundamental inadequacies in both the content and techniques of teaching the recommended syllabuses based on the Jeffrey report of 1944, not to mention the methods of examining that have been and still are being used.

Among other reasons, changes in a school curriculum may originate from within a school, often because one or more teachers feel that the curriculum fails to take account of the stumbling blocks inherent in the process by which pupils learn. For some dedicated teachers, curriculum change has been the result of a desire to extend to the majority the opportunities previously available to only a few. This may sound idealistic and yet not more than thirty years ago the majority of pupils in England and Wales were taught no mathematics other than arithmetic. It is indeed a tribute to the initiators of curriculum change that the majority of today's pupils will also meet something of algebra, geometry, and perhaps trigonometry and elementary statistics. A W Fuller HMI remarks 'we shall soon be faced with a situation unparalleled in history, with most adults having received a modicum of mathematical education up to the age of 15 or 16.[2]

Although statistics can be misleading it is worthy of note that during the 5 year period 1969-1974 in mathematics there was a 97.1% increase in the number of

(*continued from page 52*)

discussions about the pros and cons of mixed ability teaching. To my mind the inescapable fact in *this* issue is that even in a school where children are streamed to the ultimate, every teacher who works there will still be teaching mixed ability forms. The fact may be ignored, but glory-be—children are human and they are all unique!

References:

1 Jackson B. **Streaming: an educational system in miniature.** Routledge and Kegan Paul 1964.

2 **Children and their Primary Schools Vol 2.** Appendix 1. Tables D 19 and 20. HMSO 1967.

3 **Ibid.** Volume 1. Paragraph 878.

4 **Ibid.** Volume 1. Paragraph 884.

pupils achieving grade 5 or better at CSE whilst the number of passes at 'O' level GCE increased by nearly 9% as they had done in the preceding 5 year period.[3]

Perhaps the rapid growth of comprehensive education has highlighted, even exacerbated, already existing problems. In any event its existence has brought about a prolific flow of published views as to the quality of mathematics education in our secondary schools.

An evaluation of our aims and objectives for school level mathematics courses was perhaps long overdue and views still differ as to what these should be. But even for those who are able to agree on objectives Bryan Thwaites suggests that in mathematics we should be 'conceiving of a fifteen year period as roughly the natural rhythm of curriculum reform' if we are to keep pace with the rapid development of mathematics and its applications to human activities.[4] It is, then, hardly surprising that many of the problems of teaching mathematics across the wide ability range that may be met in a comprehensive school have not yet been fully resolved.

Among the problems mathematics departments are facing two form major points of controversy: whether or not to adopt (i) a mixed ability approach and (ii) a modern mathematics syllabus. The two are worth separate consideration, though for this writer the use of a mixed ability approach implies a modern mathematics syllabus.

My own experience as head of the mathematics department in a fairly large comprehensive school was perhaps typical of many. We had already adopted a modern mathematics scheme and the headmaster and senior management team had for some time been increasing their pressure on us to conform with the other departments in the school in a policy of mixed ability teaching. We had valiantly resisted, arguing (using an oversimplified model) that mathematics was essentially linear in nature. Pupils had to have acquired mastery of point A before moving to B, and then on to C further along the conceptual path. There was no way in which we could cope with pupils who performed at either extreme of the conceptual line. Furthermore our best pupils seemed to be doing quite nicely – could we afford to prejudice their chances by going at what seemed inevitably to be a slower pace?

What of our least able? Would they not suffer too as a result of larger working groups with less, and not more, help from our staff who would be under greater pressure? How could we be expected to have such versatility of mind and organisational ability? Not all (an understatement!) of our pupils enjoyed mathematics anyway, was it not likely that placing them in a situation in which the staff could be seen to be over pressured would lead to a breakdown in class discipline?

Our determination to convince all around us of the strength of our case led to our decision to set down on paper the merits of setting in mathematics. The reasons for our objecting to mixed ability teaching were to be there too, supported by our readings from any relevant and respectable research findings we could lay our hands on. We were surprised that we were able to find very little relevant conclusive research evidence to support our argument. Furthermore the majority of research into ability grouping had been carried out in countries other than our own. The Barker-Lunn studies,[5] concerned with junior school children, had not at that time been completed but a number of our experienced colleagues in feeder junior schools had already communicated to us that they were 'teaching' mathematics in mixed ability classes with no apparent loss of standards and a noticeably favourable change in attitude.

There was one factor which seemed to be outstanding throughout the whole of our deliberation and this was our unanimous agreement that mathematics taught in a strictly setted system produced an apparent two-state attitude of mind among our pupils. Those who were in sets 1 and 2 could do mathematics, whilst by implication those who were in sets 3, 4 and 5 etc., could not. This was clearly the cause of much anxiety for parents as well as pupils if the number of requests to 'put him up to the next set; if you do, I'm sure he will keep up with the others and will be a lot happier', are anything to go by. There was certainly some research evidence to indicate that anxiety levels in test and learning situations would be increased as a result of streaming and amazingly there seemed to be no evidence to contradict this.[6] We all felt that mathematics was in any event probably more likely to be anxiety provoking for most children than any other subject. The physical manifestations of this with our more difficult pupils ranged from tears of anger or despair, to outright refusal to try whenever there was a likelihood of failure, despite all attempts on our part to ensure that the work was appropriate and our expectations not too high.

The views we held concerning our level of expectations of our pupils were considerably modified by Rosenthal and Jacobson's book **Pygmalion in the Classroom.** This purported to show (using a technique of questionable

ethics) that when the teachers' expectations of the abilities of disadvantaged school pupils were raised, the pupils performed better on a standardised IQ test as well as in teachers' estimates of their attitudes to work?

The end product of our deliberations was that we had experienced a change in our own opinions and now were prepared to concede that even disregarding the arguments in favour of friendship groups and other similar social factors supporting mixed ability grouping there could well be distinct advantages for the pupils and for us.

Our next problem was how to reconcile the fact that something of the order of fifteen per cent of our pupils had special abilities in mathematics well above those of the majority whilst nearly twenty per cent were in need of remedial help. We made what we considered to be a reasonable and justifiable compromise. We would accept the pupils in two parallel ability bands as suggested by the headmaster and then 'top and tail'. This meant forming in each band a set for high flyers, a remedial set and then regrouping the remainder of the pupils in relatively narrow range mixed ability classes.

In terms of arithmetic, we were a nine form entry (very inconvenient) school with a positively skewed ability distribution. This meant that the pupils arrived at the mathematics department, manned by seven staff, in one of two 'parallel ability' bands consisting of 120 and 150 pupils respectively. For the first half-term of the first year we divided the pupils at random into classes of thirty pupils. We used worksheets and a fairly wide variety of textbooks but mainly **SMG** BK1 and **Mathematics Through Experience** (Holt and Marjoram) BK1. We chose topics such as sets, new approaches to basic number work, and elementary work on two and three dimensional shape as 'starters'. These were introduced by class teaching and followed up by quite a lot of both written and practical exercises. This necessitated our being prepared to spend much of each period moving around the classroom helping, advising and encouraging as well as taking stock of the wide range of ability which was to form the basis of our frequent discussions.

Homework was set once a week during this six week period and invariably involved a fixed assignment from a textbook to which we added an open invitation (not always taken up!) to pursue some kind of open ended task.

Towards the end of half-term two NFER tests were administered. One being a verbal reasoning test and the other a non verbal reasoning test (NV3). These tests were marked by the school counsellor and the standardised scores made available to heads of department.

Meanwhile each member of the department made a list of their estimates of the eight most able and eight least able pupils, ranked in order of ability, in each class. These estimates together with the NFER NV3 scores were used to form the sets which represented the two ends of our ability spectrum. Primary school records were then checked by myself and the school counsellor to ensure that obvious candidates from either end of the range had not been overlooked. The result of this procedure was that in round figures we had in each band a top set of 20 pupils, a remedial set of 28 pupils and the remainder in classes of 33 pupils.

Our top set was deliberately small since it was our intention that, where appropriate, we could and would move pupils from *any* of the other sets into it if we believed it to be in a pupil's interests. We did not want to move any pupils out of this set once they were in it since, whilst the error of judgment would have been ours, the real distress would be the pupils'.

The somewhat large remedial set was split between a member of the mathematics department and one of the specialist remedial teachers. This really meant that in each band the remedial group consisted of eight or nine zero scorers on our NV3 receiving specialist help, occasionally sharing a room (and a home made shop!) with twenty other low scorers and a member of the mathematics team. Occasionally we also benefited by the presence of interested sixth formers.

It seemed to us that the advantages of this scheme were:

For us

(i) We could handle the problems of teaching mathematically very bright children and very dull children in what we believed to be a successfully tried and tested controlled manner.

(ii) We would receive a much less demanding introduction to mixed ability teaching about which we knew so little.

(iii) We were already committed to teaching a modern mathematics course based on the rather practically biased **Mathematics Through Experience** series, though we also had enough **SMG** and **MME** books for two whole classes of each year. This meant we had insufficient funds available to embark on a full scale mixed ability programme. In any case, at that time there seemed to be nothing commercially produced that was suitable.

(iv) We now had all our mathematics at the same

time for each band and had gained the assistance of the remedial department and school counsellor. As a result of this a whole range of teaching methods became greatly facilitated. We could team teach, interchange classes and staff as well as follow a common syllabus at the same pace. New ideas could be tried out not just with parallel sets as previously, but with all the middle range classes.

(v) Nobody would be required to teach a 'sump of reluctant learners'. We could now spread our small numbers of difficult pupils between the various groups. Since these tended to be rather more able than those requiring remedial help and very rarely top set material, this usually meant dividing their number by three and placing them in the middle ability range classes. Previously our most difficult pupils had tended to congregate in the last but one set of the setted system – a recipe for aggression and disillusionment for staff and pupils.

(vi) If our scheme proved to be unsuccessful it was not likely to prove administratively difficult to return to setting within each band.

For the pupils

(i) The knowledge that all sets would be covering the same ground though at the extremes the pace and depth would be different for certain topics.

(ii) Many more pupils would be given the opportunity of doing well within their own group.

(iii) Transfer between sets would no longer become a matter of constant concern and major source of anxiety. There was only one set in each band that moved at a faster rate through the work for the majority of pupils. The pupils in the slowest set undergoing remedial help could reach the average ability sets as soon as the 'remedy' was complete. (Compare the plight of similar pupils in those systems which set rigidly from 1 to 10!)

(iv) If, as on rare occasions, transfer from one class to another was deemed necessary for social reasons then this could be done without fuss and concern over different work patterns.

(v) The staff were anxious to maintain the level of enthusiasm that they felt for teaching groups which were neither uniformly dull nor what they considered to be unmanageably mixed. The effects of teacher attitude on pupil performance have been documented elsewhere but even an educated guess suggests that the effects are likely to be far reaching.[8]

In fact after three years of operating the scheme we were impressed that it had worked so well. Certainly standards, judged by myself and other experienced staff, had in no way fallen in either pupil attainment or attitude to work. Indeed our internal examination results when plotted as histograms were clearly moving towards a negative skew (more high scores), whilst the NV3 scores taken in the first year undoubtedly provided a positively skewed distribution.

There could, of course, be a number of reasons for this, but assuming that the judgment of myself and my experienced colleagues was not in question, the implications were that our scheme in academic terms was relatively successful. We were pleased too with pupil attitudes towards the scheme and towards mathematics. We had not at that time acquired the research worker's acumen for selecting appropriate tests and used instead such mundane (though very real) indicators as monitoring:

(i) the number of pupils completing homeworks regularly

(ii) the effort grades, based on classwork, assessed termly for each pupil

(iii) the number of confrontations with pupils during teaching time.

Again in comparison with previous years we had, in our terms, been successful.

This three years had been an honest attempt to do our best by our pupils in a manner we were now confident was more appropriate than that we had previously employed.

At the end of the third year pupils could opt to continue with five periods of mathematics a week or two. If they chose two then they also had to choose an additional three period option from such subjects as statistics with computing, rural studies, cookery (for boys), craft (for girls) and several others. Naturally the choice was assisted by full parental consultation and advice from staff. All courses, including the two period option for mathematics led to one or the other external examinations in the fifth year.

Only sixty of our third year pupils opted for the two periods of mathematics and twenty of these also took the statistics with computing option. The remainder of the pupils were then regrouped and setted in two bands containing four sets each. We would have preferred three bands but this was not possible at that time.

I left to take up another post convinced that the scheme was successful in its first three years of running. It could

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Mixed Ability Teaching and Modern Languages in the Comprehensive School

Ian S Taylor

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Before embarking upon consideration of the implications for modern language teaching of mixed-ability groups, I must specifically exclude from discussion certain issues which are likely to remain controversial for some time: how they are resolved will have a bearing on the speed and direction of developments in language teaching, and could even make discussion of mixed-ability irrelevant for languages.

I make the assumption that learning languages has a positive contribution to make to the personal, social, cultural, vocational or intellectual development of all educable children. Some of that contribution is non-assessable in any terms, some is possibly assessable, though not by techniques at present at our disposal; of what is assessable, still only a limited range is given credit in our public examinations, yet these examinations live in the minds of many as the principal yard-stick of successful teaching (even HMIs are not blameless on this score)[1].

I assume too that it is inappropriate to expect the same relative or absolute degree of mastery of the different language skills from all children; productive skills are more demanding than, and dependent on, the receptive, and skills involving the written word only make sense in terms of the spoken.

Let us now turn to our subject, and examine what strictures, if any, the nature of language might place upon the context in which it can most profitably be taught.

It is often suggested that mathematics and languages are 'linear' subjects, in which concept A must be mastered before concept B can be understood. While this may be true of mathematics, it is true only of and between certain skills of language, rather than of language itself. For unlike mathematics, whose essence is logic and whose aim prediction, language is a complex of social behaviours founded in the whims of groups, in the arbitrarily established conventions of combinations of sounds which man uses to communicate with his fellows. In each language, each dialect, social group or family, not only is the precise choice esoteric, but it is for ever irrationally changing; in short, language is no more logical or predictable than most other human behaviour. Nor is there always a logical or consistent relationship between its spoken or written forms.

The first language

The learning of a first language normally takes place in a random series of mixed-ability groups, broad bands, narrow sets, vertical groups, inter-disciplinary and specialist groups, all of widely varying size and age-range. Oral language predominates in kaleidoscopic audio-visual and stereophonic audio-lingual presentation. Comprehension, though only partial and selective, far outstrips active re-use. The learners make hypotheses on the basis of what they perceive – test, revise and refine them. They construct by making analogies. Conformity to phonetic and structural norms is gradual and seldom complete, and the whole process is far more 'snowball' than 'linear'. The role of the teacher of a second or subsequent language is to contrive a non-random context in which the same processes can take place at an accelerated pace.

If language itself is not logical, then its acquisition can depend to only a limited degree on logic, and that exercised chiefly in retrospect. The teacher must take care to confine his logic to the choice of elements to be

presented, and to the methods he adopts, so that the new may be significant in terms of the old, and thus be learned with optimum efficiency; language teaching has long been bedevilled by those who would reduce the learning of the habits of language to a 'logical process' – so logical it requires a 'mental discipline' to master its illogicalities.

Let us not imagine that learning a language requires above a minimum of intelligence. Success is more a function of exposure-time, of motivation, of lack of inhibition, and of youth. Learning a second language takes place most easily before mother-tongue habits have become so entrenched that they impede the learning of new ones. The major structures of mother-tongue are normally acquired in a phase of the child's life largely devoted to acquiring skills rather than to using them as tools; we, unfortunately, delay most of our second language teaching until the learner has moved on to using the tools acquired at ever more varying levels, and for ever multiplying purposes.

Language is a tool for solving problems. Until recently, formal education has laid emphasis on its use for solving abstract or intellectual problems, and largely ignored the interpersonal, social and practical. The amount and complexity of language needed to solve a problem is not necessarily a function of the complexity of the problem; it is, however, often a function of the conceptual level of the thought processes occasioning its use, and it is when in a random group these involve specialist concepts, abstractions, or complex linking of ideas that the tool of communication becomes the generator of mutual incomprehension. The mechanics of a language can be learned as readily as any other habits; the message may make widely varying demands. So too may the mode, oral or written, in which it is conveyed or to be conveyed. There is also the added complication that affective factors may strongly influence progress in learning oral language skills, more perhaps than in any other area of learning, and more sensitively at some ages than at others. For learning oral language inevitably involves interplay with a teacher (live or recorded) or with a fellow learner; it is hard to conceive of it not being 'teacher-intensive', and personal relationships will always be liable to cloud less immediate issues, to the longer term advantage or disadvantage of the learner.

With so many variables, and their number and range increasing the older the learners, the choice of criterion for grouping is wide. And group we shall in some way, even if we leave the composition of the group entirely to chance, thus retaining something of the randomness of the 'natural' situation, but fossilising it, and denying ourselves the opportunity of limiting the number of extremes our teaching must attempt to accommodate. (Is this really *mixed* ability grouping?)

We can deliberately create groups composed of learners with a wide range of performance in established skill areas. In attempting to do so, the criteria we adopt are no more likely to be purely linguistic ones than were those commonly adopted for streaming (and who would care to define what those were!). In either case, assuming an oral start, the language teacher is faced by a mixed-ability group for whose individually differing rates of progress increasing accommodation must be provided. For the streamed group, however, there is usually assumed a degree of homogeneity justified only by their apparent mastery of reading and writing their mother-tongue; this may well account for the failure of many selective schools to generate much in the way of intrinsic interest in language learning.

Condition for success

The failure to motivate many mixed-ability classes has resulted from a lack of provision for the widening variables; there are few examples yet of satisfactory solutions to the teaching problems posed at secondary level except where the experience of the teachers, the allocation of time and resources, or the size of group has been better than average. The most promising results to date have come where widening variables have been allowed for by some sort of setting, thus ensuring that the greatest possible amount of teacher time is spent reasonably near the optimum learning rate of whole groups of pupils, and allowing whole groups to work towards differentiated objectives. There is again a danger of assuming greater homogeneity than exists, and of making self-fulfilling prophecies, but a greater degree of real individualisation of work becomes attainable through more efficient use of teacher time.

Size of teaching group is a critical factor in oral teaching; it must be small enough to allow of high individual levels of participation, but large enough to give internal flexibility; it must provide an atmosphere in which the individual can feel secure and uninhibited, and enjoy both challenge and success. Since language

cannot be deduced, either the teacher or previously recorded (and thus to some extent impersonal) material must provide the models. How much recourse to depersonalised matter is tolerable will relate closely to the extrinsic motivation of the learner; for most younger learners, and many not so young, the major motivator is the social activity involved, and the personal experience afforded by the learning process, centring around the teacher as initiator, as provider of challenge with encouragement, and above all of success. If mixed-ability were to go hand in hand with the reduction of oral groups to the size normal for other practical teaching, linguists might begin to sniff the air of success which, for them as for their pupils, breeds success. The early disenchantment frequently arising after two or three years of a language course in secondary schools has been blamed on mixed-ability grouping; I would suggest it is far more due to a failure to provide the conditions in which it could succeed, given the added demands it makes upon the energy and ingenuity of the teacher. There is also a lack of identifiable and attainable hurdles for those who opt for subjects other than languages before CSE or GCE; for them any motivation is allowed to peter out, leaving a long-term sense of failure and pointlessness which is infectious.

The teacher shortage

The most urgent reason for aiming at optimum use of teacher time is the desperate shortage of trained language teachers. If we are to take as representative the sample used by HMI in their recent survey[1] (unfortunately the forthcoming DES survey will yield little more complete information) then only some 70% of those teaching languages in comprehensive schools are trained as language teachers. Graduates are concentrated in the upper and 11-18 schools, presumably mainly teaching examination forms in the latter. This leaves much of the most demanding work to those least qualified. Small wonder there is a disturbing drop-out rate, and that examples of poor teaching are easy to find.

Before comprehensivisation, modern linguists were, unlike other subject teachers, largely concentrated in the grammar schools, where their experience was principally of teaching their own academic language skills to extrinsically motivated, examination oriented pupils. They were unused to selling their subject in a buyer's market. Only a minority had any experience of teaching so-called non-academic children. Most senior posts in comprehensives went to teachers from grammar schools whose expectations, not surprisingly, remained fundamentally those implanted by their own education, training and experience, but which were inappropriate for many pupils in comprehensives. It takes time to acquire experience of new conditions, longer to adjust to its lessons, and longer still to assess results, let alone incorporate them in training schedules.

At the same time, however, as the attempt to offer a language to as many children as possible was spreading the available expertise ever more thinly, the science of linguistics was challenging many cherished tenets, while technological advances were making new methods possible, and new priorities realistic. Amidst the cries of 'où sont les neiges d'antan?' some set about making hay in the sunshine melting the snows. A new era seemed to be dawning, in which people would actually learn to *talk* to each other. New courses, new equipment became available, though capital investment was often wasted by pennypinching over soft-ware, training, maintenance and technical support, so that efficiency was not always raised. The Primary School French experiment offered exciting prospects; public money was invested in producing new teaching materials embodying the experience and ingenuity of hundreds of teachers, not only for French at primary level and on into secondary, but also for German, Spanish and Russian in the early secondary years. But these excellent materials remain underexploited as a result of the Burstall report.[2] This recommended no expansion of the project for the time being, but was seized upon as an excuse to reduce it severely, rather than implement the conditions the report identified as necessary to success. Many able teachers felt their hopes dashed by this volte face, their enthusiasm damped by failure to build on their success.

Few groups of teachers can have been exposed to the same sort of scrutiny as that meted out by the Burstall report, and some more recent ones. Nor has the morale of language teachers been boosted by official expressions of public concern at our national shortcomings as linguists, since these have not been accompanied by material help in an uphill struggle. It is galling and discouraging to be made the scapegoat for long-term official neglect, vacillation and parsimony.

Constant new demands are seldom matched by concessions elsewhere. Group sizes must rise, but standards must not drop. Oral skills must be given priority (cf

Council of Europe guidelines, agreed 1966)[1], but examination requirements change only slowly, and written performance still predominates at most levels. Failure to expand numbers taking O and A level is bewailed but a huge increase at CSE is largely ignored. Expansion in the numbers being taught a language has not been matched by an increased teacher training programme, and the already severe shortage will worsen unless urgent action is taken to counter this year's further disastrous drop in numbers entering training.

A vicious circle?

Shortage breeds mobility of staff, rapid promotion for the relatively inexperienced, lack of continuity in teaching, and discouraging situations for the probationer to inherit. Despite the pious hopes of Houghton, able and experienced teachers are tempted out of the classroom by better rewards elsewhere. Those most overstretched are those least easily released, but most liable to benefit from in-service training.

It is small wonder that the average modern linguist sees the continuance of mixed-ability groupings beyond the early stages of language teaching as liable in present conditions merely to add to his existing difficulties, and doom him to continued failure in his own and other people's eyes.

I have already indicated some ways out of the impasse, but none is alone sufficient. We could increase the number of languages taught in our schools if we were less obsessed with continuity; for many children a survival knowledge of several languages would be more useful and attainable than several years of slog to satiety in one. A modular approach, perhaps in short intensive bursts, could yield satisfying results. Grade tests in individual skills or topic areas could help provide short-term objectives, thus improving long-term motivation. If differentiated groups are to succeed (whether based around interest areas, conceptual levels, degree of mastery of skills, or learning aims) then a research and development project is needed to avoid multiplication and dispersal of effort in the production of materials. Perhaps the most profitable area for expansion is after all the primary school; the reappraisal of Primary French teaching just published by the Nuffield Foundation[3] is more optimistic and encouraging than most. There is an ample pool of trained but unemployed primary teachers, many of whom could be offered retraining as linguists. Ample suitable teaching materials are already available, and proven.

Given a period of relative stability and consolidation (and there are indications that provision is sometimes rather better than HMI's survey suggests[4]) and serious attempts to agree priorities and to solve some major problems, there is a likelihood that linguists will adjust to mixed-ability teaching; but it will be at the expense of efficiency of language teaching. Some of the aims of mixed-ability grouping, such as maximum individual motivation or experience of success, might still be more rapidly achieved by differentiating groups for languages than by the blanket imposition of mixed ability.

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The Politics of Classroom Organisation

John Elliott

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We are witnessing a situation in which some Tory dominated governing bodies are pressurising schools to abandon mixed ability grouping and return to streaming. They claim that this is necessary if 'falling standards' are to be arrested. At first sight the argument appears to be mainly a technical one about the most effective means of preventing a decline in standards. But as I hope to show the decision to abandon mixed ability grouping is a political one (at least with a small 'p') inasmuch as ways of grouping pupils are inevitably based on social values rather than purely technical considerations about effective means to ends (see Bridges 1976). They embody different views about the aims and purposes of education. Even the general umbrella title 'mixed ability grouping' tends to obscure the fact that mixed ability classes can be, and are, organised in a variety of ways and that different patterns of organisation imply different views about aims and purposes.

In this article I shall try to describe a range of alternative organisational patterns which are possible in mixed ability situations and attempt to make explicit their underlying values and assumptions. I hope this might serve as a framework for the description and analysis of classroom organisation in schools. Only by being clear about the sort of things particular organisational patterns commit us to will we be in a position to accept responsibility for them, and able to render some reasonable account of our practice.

Approaches to classroom organisation

Some alternative patterns of organisation are as follows:

Class Learning

1 The whole class is required to complete the same tasks at the same pace.

Individual Learning

2 All the individuals in the class pursue different programmes and can perform the tasks involved at their own pace.

3 All the individuals in the class are expected to complete the same programme of tasks but each is allowed to work at a different pace on each task.

Group Learning

4 Pupils are streamed within the class. All pupils are expected to complete the same programme of tasks but variations in pacing on each task are allowed between groups.

5 Pupils are streamed within the class. Different programmes are followed in each group which is allowed to work at its own pace.

6 Pupils are placed in mixed-ability groups within the class. Pupils in all groups are expected to complete the same programme of tasks but variations in pace on each task are allowed between groups.

7 Pupils are placed in mixed-ability groups within the class. Different programmes are followed in each group which is allowed to work at its own pace on on each task.

Underlying assumptions

A number of factors will influence a school's, department's or teacher's decision to adopt one pattern rather than another. I shall mention just three:

(a) social values
(b) the subject-matter
(c) practicality

Individualised or group situations like 2, 4, and 6, in which all the class are expected to complete the same collection of tasks, imply that progress can be made in eliminating individual differences in achievement.

Benjamin Bloom has claimed that his research on mastery learning has shown how individual differences can be eliminated. In 'Individual Differences in School Achievement: A Vanishing Point' (1973) he argues that for a programme of sequenced tasks it is possible for 90% of students in a mixed-ability situation to reach a criterion of mastery given variations in pacing and amount of teacher guidance. As pupils proceed through the sequence the variation in time and guidance required for the mastery of a particular task 'gradually moves towards a vanishing point'. Bloom explains this dramatic possibility as follows:

'... assume that 90% of the students learn Unit 1 adequately (or to a level of mastery) while 10% do not ... those 10% are then helped (outside of classtime) until at least 5% or more have achieved mastery. The proportion who achieve mastery will now reach 95% ... before they enter Unit 2. Assume that this process is repeated on each unit and the goal is always to have 95% of the students achieve mastery on a unit before embarking on the next unit in the sequence. We should find that over 90% of the students reach about the same level of achievement as the top 10% of the students under Condition A.'

Condition A is a situation in which there is little variation in the pacing and amount of guidance given on each task. Under this condition which is the normal one only about 10% of pupils achieve mastery on the final unit.

Bloom comments 'what has been especially exciting in some of our research on mastery learning is the shift in the amount of time and help required at each of the units in our course. On Unit 1 we are likely to find that some of the students reach mastery in 1x amount of time and help while other students reach this same level of achievement only after as much as 10x amounts of time and help. Perhaps, by the sixth task, the variation may be 1x to 4x. By the tenth unit, if all has gone well, the variation in time and help required may only be from 1x to 2x.'

The elimination of individual differences requires a core curriculum defined in terms of the programmes of tasks all pupils are expected to complete. Why would teachers want to eliminate certain individual differences through the provision of a particular pattern of classroom organisation around a core curriculum? The reason surely is to provide pupils with *equal opportunities* of access to socially important positions and roles. This is the social value which underlies patterns 2, 4, and 6. But teachers will only agree on what the core curriculum ought to be when they agree on what the socially important positions and roles in society are.

In assuming that pupils ought to have equal opportunities of access to socially important positions and roles, patterns 2, 4 and 6 imply that provision ought to be made in schools for meeting the *needs of society*. Equality of opportunity is simply a formal principle which regulates the way social needs are to be met and does not in itself specify the substantive nature of these needs.

Patterns 3 and 7 imply that pupils follow different curricula either on an individual or group basis. The underlying assumption here is that *equal opportunities* ought to be given for pupils to have their *individual needs* catered for. Pattern 7 simply involves grouping pupils on the basis of shared individual needs. These patterns assume a different kind of *equality of opportunity* to 2, 4 and 6, based on the aim of catering for the needs of individuals rather than the needs of society. Again it is a formal principle regulating the way this aim is to be pursued rather than specifying what individuals need.

Ideological tensions

Pattern 1, class learning, in requiring all pupils to complete each task at the same pace, cannot accommodate individual differences, and for all practical purposes must treat such differences as if they did not exist.

It therefore appears to be a particularly inappropriate pattern for mixed-ability situations. Its appropriate situation is a streamed class where pupils are selected on the basis of similar attainments.

Streaming assumes that individual differences are determined by innate aptitude rather than environmental factors, and therefore that it is only natural and proper for some pupils to achieve more than others. It is this *meritocratic* social philosophy which underlies class learning and some recent attempts to pressurise schools into a return to streaming and the use of these methods.

If class learning is an inappropriate organisational pattern for mixed-ability situations why then is it so prevalent in them in secondary schools? This becomes more understandable when one realises that individual teachers may have little control over whether they

teach in mixed-ability or streamed classes. The re-organisation of secondary schools has brought about the widespread phenomenon of teachers committed to the idea of a meritocracy having to operate in situations devised by those committed to egalitarian ideals.

Teachers operating with pattern 1 in mixed-ability classes will not view their problem as one of eliminating individual differences but rather as one of 'doing justice to the brighter pupils'. (see Elliott 1976). Pattern 1 only appears feasible in mixed-ability classes if the teacher ignores those pupils who present the extremes in achievement levels and instead 'aims for somewhere in the middle'. But in doing so, such a teacher contradicts his own meritocratic philosophy by imposing constraints on the progress of 'brighter' pupils. In mixed-ability groups we have a situation where class learning is forced to contradict its own underlying social philosophy. When the problem becomes intolerable there are two possible solutions. The first is a return to streaming, but the ordinary teacher at the 'chalk face' is not usually in a position to determine this. (He can, of course, move to a Tory authority and hope, or await the implementation of the Taylor proposals.) Instead he may adopt the second possible solution, that of shifting into pattern 5; namely, streaming within the class and giving each group a different programme of tasks.

Competition or co-operation

The values of *social-co-operation* and *competition* are also expressed in different patterns. Any pattern which aims to provide pupils with equal opportunities for access to socially important positions and roles implies at least the desirability of tolerating competition. Not all pupils will secure access to these scarce social 'goods'. Patterns 2 and 4 both imply 'tolerance of competition'. On the other hand a pattern which aims to provide pupils with equal opportunities to have their needs as individuals satisfied is compatible with an ideal of social co-operation. It is social co-operation, based on the perception of a common humanity which transcends individual differences and people's different social positions, which pattern 7 appears to express in addition to that of equal opportunities for individual needs satisfaction. Pattern 6 appears to embody a paradox. Pupils in the mixed-ability situation are required to help each other and yet the implication for 'the high achievers' is that they should help 'the low achievers' compete with them for success.

The grouping of patterns according to their underlying social values can be summarised as follows:

Social Values	**Patterns**
Meritocracy	1 and 5
Equality of opportunity (access to socially valued positions and roles)	2 and 4
Equality of opportunity (access to socially valued positions and roles) plus social co-operation	6
Equality of opportunity (individual needs satisfaction)	3
Equality of opportunity (individual needs satisfaction) plus social co-operation	7

In addition to social values the nature of the subject-matter being taught (see Bailey 1976) and practical considerations may influence the adoption of a particular pattern. Some tasks can only be learned in groups e.g. acting a part in a drama, playing soccer, performing a symphony, and taking part in a discussion. Other tasks can either be performed alone or are open with respect to whether they can be performed alone or in a group.

Class size and the availability of resources, specialist rooms etc. can virtually rule out individualised learning on practical grounds. Group learning is often the only practical compromise. But even here such factors can impose severe limitations on the feasibility of pattern 7. The amount of time, effort and skill required by busy teachers with respect to preparing resources such as work-cards, managing the classroom situation, and assessing pupil progress, also impose limitations on Individualised Learning and reinforce a movement towards Group Learning. Of the four patterns of Group Learning I have listed 6 and 7 are likely to demand most from the teacher in terms of time, effort and skill.

Busy teachers with large classes, inadequate resources, and lack of inservice training are most likely to move away from class learning into patterns 4 and 5. Pattern 4 appears to offer a reasonable compromise between social ideals and practicality. However, one of the urgent matters which requires large scale discussion is that of making adequate provision for the realisation of patterns of mixed-ability teaching which cater for the individual needs of pupils and facilitates the development of their capacities for social co-operation.

Clarifying aims

Finally, I would like to make a suggestion about how the above descriptions and analyses can be used in a staff development context. For various reasons schools are increasingly having to produce statements about their aims. This usually involves a basically introspective armchair exercise. It would be interesting to compare the results of such an exercise with the results of getting staff involved in a process of clarifying their aims from a description and analysis of their actual classroom practices. The latter process would of course be more time consuming but in my opinion would be far more effective in helping teachers to reflect about what they are doing. It would also impose a check on the tendency to cite aims which fit one's dreams about, rather than the realities of, classroom practice.

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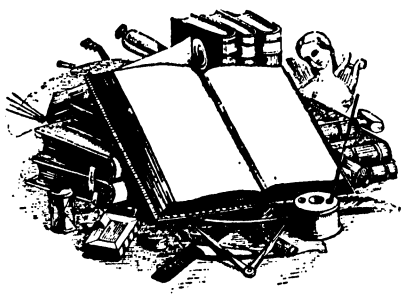

(*continued from page 56*)

be that a Hawthorn effect had been in operation or that our non standardised instruments of measure for academic performance and attitude were grossly inaccurate or misinterpreted by us. I cannot believe this. Indeed, I would argue further that given the wider opportunities now afforded by such schemes as SMILE, the Kent Mathematics Project, the Scottish Modular Mathematics Scheme, the Fife Project etc.,[9] there seems to be much to be gained and little to be lost from such a modified approach to mixed ability mathematics teaching not only in the first three years but through to the fifth form.

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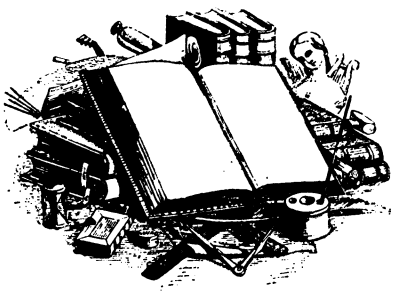
Reviews



A Vague Term?

Gifted Children in Middle and Comprehensive Secondary Schools. HMI Series: Matters for Discussion 4. HMSO. £1.75

Part I of this discussion paper is the 'Working Party Report' of a team of HM Inspectors investigating the identification of, and provision for, gifted pupils in comprehensive schools. Part II, 'Some Views on Giftedness in School Subjects', by a wider range of authors within the Inspectorate, comprises separate short papers on eleven basic areas of study.

'Gifted' is acknowledged to be a vague term. Although an elaborate working definition is attempted, the pupils concerned may most simply be thought of as those of IQ 130 and over, say the top 2% of the full ability range, together with those who, whether or not they fall into that category of all-round intellectual excellence, display some specific talent to a similarly exceptional degree.

According to the Appendix to Part I (p 42), out of 107 schools named comprehensive, visited by HMI in connection with another survey, only 60 tried to identify pupils with specific gifts and only 40 tried to identify pupils of superior intellectual ability! On the face of it these figures suggest that many comprehensive schools show a deplorable lack of concern for the fostering of talent, surely a self-evident and basic aim of education. It seems more likely, however, that of these schools 'named comprehensive' maybe half were well aware that they were still, at the time of the survey, schools with only average and below average pupils in them. If so, these shocking statistics are merely the millionth example of how the word 'comprehensive' has so frequently been misapplied, with very damaging results for the image of comprehensive education in general.

On the other hand, this book makes it clear that even genuinely comprehensive schools are often found to be making insufficient or inappropriate provision for gifted children. Interestingly, the form of grouping does not make much difference. Streaming and setting are not particularly helpful, contrary to 'commonsense' assumptions. Predictably, in most schools where mixed-ability grouping took place it left the ablest children 'unchallenged and unprovided for'; yet some splendid examples of special provision for the gifted were found, within as well as without mixed-ability classes, including differentiated work, individual tuition, more advanced reading and a consistent demand for high standards. The good comprehensive will no doubt ensure a variety of classroom experience for gifted children: they must have the opportunity to learn in each other's company, with the pleasurable and companionable 'challenge' this provides; and they must also learn and study in the company of pupils of other ability levels, cultivating the virtues of acceptance, co-operation and mutual respect.

In Part II, readers will dip into different sections according to their own special interests. The uniquely difficult position of foreign languages in comprehensive schools is emphasised: how unfortunate that a subject which requires urgent and widespread development in a Britain that is also a part of Europe, should have to labour under the psychological handicap of having been for so long the preserve of a privileged minority. In the chapter on Classics, we find the downright statement that 'excessively severe examination standards in comparison with other subjects should be acknowledged and lowered, since through assuming the participation of the ablest pupils, such standards can nevertheless deter them'.

Other notable points include several which would readily bear a wider application beyond their immediate context. Thus: 'Schools should be enabling places where idiosyncracies are at least tolerated; to some extent originality depends on the freedom to be original' (Art). 'Gifted pupils may know more, have perceived more and investigated a greater variety of sources than their teacher. To the perceptive teacher, this will be a measure of his success, not of his shortcomings' (History). 'The effects of these early and prolonged pressures on the lives of young people and their families need to be examined critically. . . . Where there are competitions there are many more losers than winners' (Physical Education). A doubtless unintentional joke at the expense of traditional academic teaching occurs at the beginning of the paper on Science; a list of characteristics regarded as indicators of giftedness (2% of all pupils, remember!) starts with the following item: 'Seeing the relevance of what is learned in a science lesson to situations outside the laboratory'.

Throughout this book, as often happens when educationists set out to consider the needs of any one category of pupils, there are fundamental implications for the teaching of all. The authors themselves point out that many of their recommendations for the support and development of

specially talented children would in fact improve the provision for pupils of all abilities. At least up to the minimum school-leaving age gifted pupils, like all pupils, need a broad curriculum which does not exclude the less 'academic' subjects. Finally, and very truly, 'gifted children are like other children in one important respect: they are individuals and should not be thought of as a group, with common characteristics'.

The conclusion is irresistible that gifted children need and deserve individual attention and provision, neither more nor less than any other pupils, but also that a better general level of such individual provision is essential if all our children are to derive maximum benefit from their secondary education. This being so, there is a sad irony in the wording of the small print on the reverse of the title page: 'Nothing said is to be construed as implying Government commitment to the provision of additional resources.'

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Jargon Free

The Sociology of Comprehensive Schooling, by Paul Bellamy. Methuen: (1977). 127pp, £1.60.

In some circles the term Educational Sociology has much the same regrettable effect that the word Culture is said to have produced in Hermann Goering. When Paul Bellamy adds an astringent Marxist ingredient to the pot, the resultant mixture may be too highly spiced for the moderate palate. This would be a pity because I found this slim volume informative and illuminating: having taught in a Comprehensive School for the past ten years it was salutary to have ideas and preconceptions scrutinised and questioned, and even if one disagrees with the Marxist interpretation, it does give a coherence and bite to the book which I found stimulating.

Comprehensive, like Shakespeare, means all things to all men, but when applied to English education it has come to mean educating all children of secondary school age in an area in one school. Starting with the premise that 'the prime function of schooling in capitalism is to sort out children by their personal characteristics, and to inculcate attitudes and behaviour that will ensure they accept their roles in the production system,' Paul Bellamy examines comparative developments abroad, supplying a wealth of detail which gives an added dimension to the subsequent survey of the home product.

Here it was almost poignant to be reminded that in the early days the issue was not the political football it has since become, with the attendant acts of hooliganism and cries of foul play. It was in the conservative soil of Leicestershire that the Comprehensive idea took strongest root in the Fifties and it was not until the mid Sixties that Labour belatedly threw in its political weight. When the author says 'The Comprehensive School has sometimes become a battleground of competing interests', one is irresistibly reminded of the current argument about the right of the Grammar Schools to exist side by side with the Comprehensives; they have that right, but the latter then become Secondary Modern Schools and should be publicly known as such: however, there is no political mileage in that label.

For me, the most interesting section is the examination conducted by Paul Bellamy into the internal workings of the schools. It was soon realised that 'putting adolescents under a similar type of schooling within a common building is unlikely to have an effect on the pattern for good or ill', and we are in the process of discovering that as long as the development of talents is interpreted along narrowly academic lines, many working class children will find school increasingly irrelevant and react accordingly. In his description of the attempts of three particular schools to come to terms with the situation, the author shows how the best laid plans can go astray when re-interpreted by the individual teacher! He examines the validity of streaming within a Comprehensive School, which supposedly came in response to criticisms of early selection, but points out that mixed ability groupings *per se* are prey to what he calls 'informal academic differentiation' and can set up disruptive tensions if clumsily handled. It is essential to let each individual teacher and child know that his contribution is valued, and, for me, the mixed ability situation seems to offer the best chance of doing this.

The book is mercifully free of jargon. I only counted one 'ongoing', and other mind-boggling terms like the 'Technical function theory' are carefully explained. I enjoyed Paul Bellamy's book and share some of his hopes. However on a day, 9 October, when *The Observer* leads with a newly converted Mr Prentice complaining about 'the growing emphasis on class war and Marxist dogma' and follows up with a celebration of the Phoenix

like qualities of the Public Schools on the front page of the Review, I fear we are both in for a long wait.
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Memorial Volume

Education for Self-Discovery, edited by J B Annand. Hodder & Stoughton (1977). 104pp, £3.95 (Boards), £1.95 (Unibook).

This volume is a fitting Memorial to Peggy Volkov who from 1934-1963 edited the **New Era,** the journal of the World (formerly New) Education Fellowship. Contributions were invited from a number of leading members of the Fellowship who knew her well. The Editor has worked to good purpose in bringing them together to form a coherent and powerful plea for a new balance and wholeness in the education of the young.

To give a conspectus, and with a book of this quality and content there might be several: Professor William Wall calls for the presentation to all young people in their 'teens of the possibility of, and firm guidance towards, a fully autonomous adult identity; Professor Staines for teaching to focus upon the experiential self as a primary value in education; Professor Ben Morris for the concept of education as a transaction between the generations and of the educative process as the nourishment of persons in which the role of feeling should be fully integrated; James Hemming for new perspectives upon man and his cosmos, and recognition of a universal incentive in the search for one's own nature and significance and place in things; James Henderson speaks from his own experience of the self-discovery of a world citizen and of the Self we share with our fellows; Marjorie Hourd of the life of feeling, exemplified in Wordsworth's 'sentiment of being' that linked him both with Nature and humanity: Ruth Frøyland Neilson of the discovery of the physical self as perceived and as experienced, with special concern for the handicapped; Hiroshi Nakajima of the influence of Western thought in making self-discovery a tenable educational concept in Japan.

The manner and style of the individual interpretations of the general theme give the book an unusual appeal.

In the opening essay Professor Staines expresses the opinion that the centrality (to behaviour and attitudes) of the Self-Concept is a conviction that the educators, to judge from their practice, do not share with the psychologists. He goes on to analyse the Self-system, its three levels (I, me, and the ideal self) and their several categories and dimensions, in order to validate his conclusion that, if we are really concerned about giving the child 'legitimate grounds for self-esteem' (Foshay), there is need for new concepts of the teacher's role, the curriculum, and teaching methods.

The identity crisis of adolescence, says William Wall, can be better understood in the light of earlier critical periods. In Gesell's cycles of growth, the Freudian interpretation, and Piaget's stages of cognitive and moral growth he finds a coherent pattern of development that leads to the stage when the adolescent has to come to terms with his different 'selves' and discover the essential or moral self.

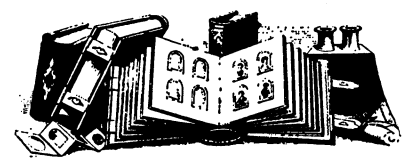
Ben Morris on the role of feeling in education places his topic in the context of an overview of the main social thrusts of western industrial democracies, that have carried education with them in the last fifty years. 'We are all now part of the "achievement society" .' Personal life is impoverished. A desperate search for 'me' takes strange forms. The counter-culture, mainly of the young, proclaims its 'new' values in such exaggerated forms as to suggest what the psycho-analyst would call the return of the repressed, of what we have tended to deny. But polarisation and new dichotomies are not the way. What is really needed is a more fundamental re-interpretation of values to include all that is truly human. His new horizons for education are set out searchingly and sensitively, and will give heart and courage to those depressed by Black Papers.

Marjorie Hourd presents Wordsworth for today as a poet whose insight into the mother-child relationship reveals him as a forerunner of Freud and Jung and of the 'mothering' theories of Melanie Klein, Winnicott and Bowlby.

Teachers planning courses in World Studies will share my appreciation of the syllabus James Henderson offers, and his exposition of the grounds on which it is based.

James Hemming, on personal development through education, argues that the search for the self is essentially a social process: to realise the self and its potentialities requires the support and stimulation of a social network that gives the confidence to accept ever new challenges as a condition of growth. To help self-discovery education should be directed to the side that it has hitherto neglected, the self of feeling, imagination, intuition and of the 'feminine' qualities.

Many schools have in recent years, he believes, begun to set their sights in the right direction.
RAYMOND KING



Positive Suggestions

Modern Languages in Comprehensive Schools. HMI Series: Matters for Discussion 3. HMSO. 50pp. 90p.

This report is particularly welcome, since it is the first time that the Inspectorate has put into print a professional judgment on this issue for general discussion.

The survey was born out of concern at the number of pupils abandoning study of languages as soon as may be, and in particular the falling numbers of 'A'-level candidates in French, Italian and Russian. Eighty-three schools were visited, all comprehensives, and the report gives examples of good practice (rare) and failure (common) which its authors saw. It remains to be seen how, if at all, the actual *practices*, which are not specified in the report, can be encouraged in those places where things are so bad. Nonetheless, it is a welcome feature of the document that, while it is scathing about most of what was seen, it spends as much time as it does on worthwhile practice.

But scathing it certainly is: in most schools, all pupils under-performed, the less able were given 'impossible or pointless tasks', excessive use was made of English, reading skills were neglected, written work was inaccurate and uninteresting. In the worst places, disenchantment leads to indiscipline. The report has much to say about the immediate causes of the mess, but shows perhaps too little understanding of the underlying causes: for the fact is that the mammoth task, for which few had any experience to build on, of teaching languages (largely French) to an ever wider range of ability, was undertaken largely by under-trained, indeed, in times of difficulty in teacher supply, by untrained, teachers.

Mixed ability teaching gets short shrift in the report, but this is less surprising than it might seem at a time when unstreaming/setting/banding is still a hot issue in modern language teaching. It is significant that the proportion of schools in the sample where languages were taught consistently in mixed-ability groups was minimal.

In its diagnosis, there are two major themes. First, the differentiation of objectives. It is clearly madness to offer the *same* course to all children, irrespective of linguistic ability and progress, and the report attempts to provide guidelines for devising differentiated syllabuses. This may help schools without schemes of work—and there are many—to make a start. It is, of course, in terms which are too general as they stand, and contains one curious sentence implying that since, with the second level of ability, 'the occasional error would be accepted', the most able would be allowed none—which seems harsh, since most natives make a fair number! I must admit that I was a little puzzled by the fact that, in a report which is nearly always firm to the point of harshness, there is one crucial issue on which the writers come near to being 'without preferences'. There *are* caveats and reservations, I know, but the writers view with favour schools where there is great emphasis on comprehension and oral expression on the one hand, and schools where these play little or no part, on the other. I should like to know exactly how, in the latter school, 'the pupils' general education was benefiting'.

The second recurrent theme is the crucial role of the Head of Department. The report goes a long way towards defining his duties: writing schemes of work, liaison with other schools, inviting colleagues into his lessons, visiting their's, devising and keeping records, and so on. All of this makes sense, and applies, I am sure, to all Heads of Department in the school. The picture of the Head of Department as a near-autonomous dynamo is, however, modified, when the report says firmly that there is too much diversity in provision of language-teaching, and calls for discussions between 'Central government, local authorities and the teaching profession' which should lead to a rationalisation. Given the present diversity, I wondered just how realistic it was to say to training agencies that they should take account of 'regional and national needs'.

There is much else of interest in the report. Notably, a call for non-specialist courses in the 6th form, and encouragement for advisers and those involved in inservice training. It is to be hoped that the document gets the widest possible readership, and that we can build on the positive suggestions which make up a substantial part of it.

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Language Policy

Language Policy—
The Child's Acquisition of Language and **Language Needs of Minority Group Children** both by June Derrick. NFER (1977) pp 53 £1.75 and pp 59 £2.10.

These are short surveys of recent work in two related areas of basic education. Much scholarly effort has been invested here, a good deal of practical development has taken place in the past decade, and June Derrick's concise summaries of the interactions between researchers and teachers, and between each of these and planning authorities are both informative and salutary. Newcomers to the fields of language-learning and teaching will find these digests clear and encouraging introductions to two very complex topics. Teachers, and those with a contribution to make to the planning of language provision, will be grateful for these insights into the attitudes of the other members of the triangle.

Each survey traces the route by which we have arrived at acceptance of the need for intervention in the language education of the young child. Understanding of the mother's role in the child's acquisition of his mother tongue, and of the differences between first and second language learning underly the discussion of language policy in early education. Especially useful, in **The Child's Acquisition of Language,** are: the reminders of the importance of the young child's physical pleasure at his growing command over his speech apparatus; the emphasis on the acquisition of the functions of language, as well as of its material; and (in a different category) the attempt to correct some of the grosser prejudgements of the work of Basil Bernstein. Some attention is given here to the various language development programmes in the USA during the sixties. (It is not here, but in **Language Needs of Minority Group Children** that the Bereiter and Engelman scheme is characterised as 'notorious'.) Like the Bullock Report, **A Language for Life**, June Derrick opts for what could be seen as the middle way between full-blooded interventionism and Labov's acceptance of non-standard language in education – the work of Joan Tough and the Schools Council Project on Communication Skills in Early Childhood, at Leeds. Indeed, the principles underlying Joan Tough's work are implicit in the discussions of **Language Needs of Minority Group Children.** An overview of the events and attitudes that polarised the educational thinking of the sixties ('benevolent inertia' v intervention; assimilation v culture maintenance) include a description of the very useful initiatives taken at Bradford. It culminates in a plea, not only for the retention of the minority group child's mother tongue as a medium of instruction, but also for more information on the relative status *for the minority communities* of the several languages among which they live and through the medium of which they are required to function. Those interested in the maintenance of the mother tongue and the provisions of bilingual education in local authority schools at all levels will be grateful for the support they will find here. The evidence June Derrick cites is drawn largely from the experience of planning authorities in the USA, since the failure of the 'melting-pot' policy. (There is, as yet, virtually no 'linguistic demography' to guide policy makers in Great Britain, nor is there likely to be much while assimilationists insist that the most helpful thing we can do for 'immigrants' is to render them invisible and inaudible.) Language planning, in particular, has not traditionally been of concern to educationists in this country; it is especially interesting, therefore, to see the need for such planning so persuasively argued in an introductory book for the interested non-specialist.

It is questionable whether such a reader will find as helpful as June Derrick suggests (in her Introduction to **The Child's Acquisition of Language**) the lack of apparatus to help him connect reference to source. In each book, the interested reader is brought to a halt by such phrases as 'A survey carried out earlier in 1966 . . . .' (p. 6, **Language Needs . . . .**). Is this survey to be identified with 'the survey', mentioned on p. 7? If so, which one is it? If not . . . . On p. 16 of **The Child's Acquisition of Language**, we read of 'A study of children aged five and upwards . . . .' This seems, from the context, to refer to Carol Chomsky's **The Acquisition of Syntax in Children from 5 to 10**, much of which is not only accessible but fascinating to students, as many of the experiments can usefully be re-run, without difficulty. It is hard to see what purpose is served by concealing the identity of the book from the reader, while entering it in the bibliography. Again, twice sixty such detailed pages would have been well worth indexing – in double columns, perhaps, on the blank sheets remaining at the end of each book. Very little extra expenditure would have added greatly to their usefulness. Proof-reading has not been so careful in the 'Introductory Reading List' section of **The Child's Acquisition of Language** as elsewhere in the books. The author of **Language Development: Form and Function in Emerging Grammars** is *Lois* Bloom (not Louis); the 'modulations' acquired at Brown's Stage II include case-*markers* (not case-makers).

But, far outweighing the irritation at these imperfections, for this reader, are the appreciation of June Derrick's skilled and balanced summaries, and satisfaction at the good uses to which they will be put.

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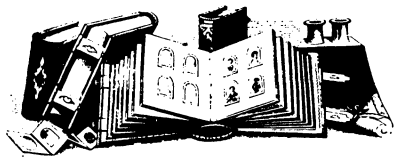

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