NEW IDEAS ON SCHOOL FURNITURE

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A hundred years ago John F. Moss in E.R. Robson's book "School Architecture" opened his chapter on School Furniture and Apparatus with these words:

> "Suitable appliances are to the teacher very much what proper tools are to the handicraftsman. The furniture and apparatus should be carefully adapted to the kind of instruction to be given and the most approved methods of imparting it. All ulterior considerations must be held subservient."

We uphold these admirable sentiments today, but the furniture that stems from them is different because children and teachers work differently. A hundred years ago, in Great Britain, on the continent of Europe and in the United States the obsessions were with the seated posture, the need for the pupil to see the teacher and for the teacher to command the attention of pupils and gain access to them. Discussions centred on the merits or otherwise of single, dual, or desks for four and more, and on whether seats should be separate or combined with them. If separate, they would be fixed to the floor, for loose seating was still a thing of the future. Furniture for other than reading and writing purposes reflected the low priority other work held in the timetable, and was designed as relatively complicated apparatus on which the teacher could demonstrate rather than as simple equipment on which the pupils themselves could work.

However, there was one feature of the classroom furniture of a hundred years ago which over the years has been ignored, and to which designers of the present generation have restored attention. This feature is the size of the furniture in relation to the size of the pupils. Recommendations and practice in 1870 were closer to those in 1970 than those during the first half of this century. At the end of the last century the priority was to read and write, and above all to keep still. Storage requirements amounted to little more than a slate. In these circumstances tailor-made furniture was relatively easy to achieve. During the course of this century the formality of the classroom persisted, but the content of education multiplied so that armfuls of books replaced the slate and created a severe storage problem at the workplace. School furniture makers naturally responded by providing deeper shelves or lockers which meant higher tops, and thus we soon had the grotesque postures that have come to be associated with the locker desk. Similar influences were at work in office furniture. Surveys in the early 1950's resulted in the confident claim that a very large majority of pupils were sitting at furniture which was too high for them. The surveys also resulted in British Standard specifications which in 1955 reminded the public that classroom furniture was primarily for children to work at (and not solely for reading and writing) rather than a repository for paper. They also showed how designers could reconcile the conflicts.

This outline shows how influential the academic tradition has been, in which the type of education thought most appropriate for the leading classes a long time ago resulted until quite recently in classrooms for pupils of all ages and kinds that could in essence be described by the words, desks, rows, blackboards; words that have become so familiar that they instantly conjure for the man in the street the image of a school.

There have been more fundamental influences at work for just as long, but it is only in this present generation that partnerships of educators and designers have been established which have been able to realise the implications of these influences in design. During the last century, educators have been making discoveries of how children learn, the importance of learning from the concrete, from experience. Concern for the whole child has become a cliché, but it is too important to put to one side, for through this kind of concern, we now realise that physical surroundings and our physical well-being affect our development and our power to think. Designers and educators now increasingly realise therefore that the provision of furniture in a school is not the closing phase of a building contract, but regard it as part of the ethos of the school, and as a starting point in school design.

Influences on furniture

It is not possible here to pursue closely these connections between how children now learn and their physical surroundings, but at the risk of oversimplifying for the sake of clarity it is important to state briefly the influences on furniture. For working purposes, teachers are concerned with individual pupils, rather than classes. Pupils learn in different ways and speeds, which together with the emphasis on learning from real experiences means that they are working in varying sizes of groups, and at many different kinds of work. Throughout the day the patterns of group size and work will change. Not often will everybody be doing the same thing at the same time. This means, among many other things, a less rigid division between reading and writing work, and work with the hands. The conventional design of both buildings and furniture has implied a rigid division in the past. These are principles which apply in varying degrees throughout the whole educational process, and ones which pioneering teachers have been applying before the physical attributes of a school and the furniture in particular had responded to them.

The dichotomy of education into primary and secondary stages is giving way to a more continuous process that is being encouraged by the special consideration of the needs of pupils in the middle years, whether at the upper end of primary, in middle, or in the first stages of secondary schools. In most buildings, therefore, the pattern of the self-contained classroom for the younger pupils, to which is added self-contained special subject rooms, is again giving way to buildings containing a much more complicated pattern of variety in which versatile and movable furniture is the chief means whereby changing patterns of groupings and activities are achieved. It has been the tradition that the room for the class group serves both for pastoral and for working purposes, the simple needs of the former restricting the complex needs of the latter. This is no longer acceptable because for varying group sizes and activities more variety of spaces and furniture is required, and these are no longer neatly divisible into general and special subject categories. However, the need for security and pastoral care is of supreme importance, particularly for the younger

children, but at no stage need this necessarily imply classrooms as we have known them.

How does this change the popular image of a school and its furniture which history has made so sharp?

Now it is unlikely that all the children for whom a teacher is responsible will be provided with the same kind of furniture. No longer are we concerned with 30 or 40 desks or tables for 30 or 40 pupils. The implications of working in small groups doing different things are that a variety of seating and work surfaces are required. Bench seating, soft cubes, stools, rostra, steps, a patch of carpet, for example, will have their place as seats as well as chairs. Pupils will move from one working surface to another, from sitting height to standing height, from small private tables to larger communal ones, from surfaces for clean work to surfaces for messy work. Furniture for practical work is closely associated with furniture for book work, both of which need to be serviced with trolleys, providing instant categorised storage, display and screening facilities. Furnishing of the vertical surfaces is equally important as the furniture that is placed on the floor. The image of the notice board, the blackboard and the occasional shelf has disappeared with the locker desk with its rows and gangways. The vertical surfaces are now fully equipped as working surfaces, with furniture for storage and display in two and three dimensions, both to inspire and to inform.

The movement of pupils in their work now makes it impossible for a pupil to establish permanently any one chair or work place as his own. This movement and regrouping means that work surfaces need to have mobility and possess what is most easily described by the ugly phrase "all round sittability". Therefore storage at the work place is giving way to separate storage in trays or lockers, which leaves the work surfaces unencumbered.

This mobility affects the principle of "tailor making" the furniture to fit the child, a principle that seemed admirable in the past, and that is only recently being challenged. Unless academic anthropometricians are to stand in the way of changing education, it is necessary to modify the aim of fitting each pupil accurately to one by which furniture allows people of widely differing statures to sit reasonably comfortably at a given size. Not only are children of different sizes working together but teachers are working with children, rather than merely having to "command their attention" from the blackboard. In Great Britain the educational pressure for this change is very clear, and a nationwide measurement survey of the school age population has recently been completed to enable existing recommendations to be re-examined in the light of both new educational methods, and changes in the growth of the population.

> "Now it is accepted that young children need frequent opportunities to move and change their position quite apart from times which are specifically set aside for physical education".[1]

On the continent of Europe on the other hand, where education tends to involve sitting still for longer periods, and with exercise often not part of school education, the medical profession has a stronger case for advocating so strongly the accurate design and distribution of furniture for perfect postures. Thus adjustable furniture, and a multiplicity of

sizes with consequent educational inflexibility are characteristics of European schools. However, educational trends, and the growing awareness in Europe of British furniture and its educational starting points, are giving rise to an interesting international dialogue.

Consortia of local authorities

The realisation of these changes has gathered speed in Britain over the last 20 years, but was slow to start when furniture designed for pioneering individual projects was not taken up by industry for wider marketing. It is understandable that the manufacturers' catalogues should contain only what they can sell, reflecting an accumulation of the past experience of the majority, rather than future trends representing only the minority. Manufacturers on their own could not themselves bridge the gap between industry and education, a gap that had to be bridged before school furniture could serve and encourage modern educational objectives. Individual designers and authorities had shown the way, but their order books were not large enough nor their programmes long enough to give industry the confidence to change.

The initiative taken by local education authorities (designers and users) in forming consortia to employ industrialised building techniques more effectively was first applied to furniture production by the Counties Furniture Group in 1962. In this way strong teams of designers and educators can establish requirements and present to industry a co-ordinated demand with continuity over long periods. In this way, too, new materials and new technologies whose use demands large scale production can be employed to produce furniture whose quality is high, but whose cost can be afforded by public authorities who are continuously hard pressed to balance quality with quantity. More recently other consortia of local authorities for furniture have been formed, notably one for some Welsh authorities (CLAW) and another for authorities in the south west of England (FLAG). The Department of Education and Science maintains an active collaboration with local authorities in the design both of buildings and furniture. This resulted in a partnership between the then Ministry of Public Buildings and Works (Supplies Division) - now Department of the Environment - and the CLASP Consortium of local authorities, and enabled furniture design associated with individual projects, such as the Eveline Lowe primary school, for which there was close collaboration with the Greater London Council, to be developed and made more widely available. The range of furniture stemming from this partnership of central and local authorities is now manufactured by Pel Ltd. and is known as the Forme Range. This is one example of the application of principles which are now shared and accepted by many and are being developed in different ways. The Forme Range is at the present time perhaps the most comprehensive and clearest demonstration of the ideas which are the subject of this account. These changed relationships between customers and industry reflect the fact that the combination of value for money with high quality and large quantity depends on larger buying organisations and manufacturers who have at their command large resources to employ sophisticated engineering techniques in metal, plastics and timber.

The modern range of furniture

Until recently the furnishing of schools has been the provision of set piece interiors, whether classroom, library, laboratory, or workshop. Now a furniture range must consist of a multitude of items for floors and vertical surfaces, for working, storage and display in great variety. In fact many of the attributes of building elements are now being assumed by

furniture, which increasingly is becoming the means whereby a school becomes an educational instrument. Moreover in the interests of flexibility, cost, and speed of construction, much furniture that used to be built into the building structure is now provided in the form of loose furniture. Educators and architects will select different combinations of many items, and teachers will rearrange them constantly in their schools. This variety is kaleidoscopic in its complexity, and poses special problems for design and manufacture, which are beyond the scope of this paper. Suffice it to say that a harmony in use, whatever the arrangement, can be maintained by the versatile application of a discipline of material specification, colour and dimension that is common to the hundreds of items there may be in a range. Thus the items are given a family relationship.

For industry the aim is to pursue the manufacture of standard components by whose assembly in different ways variety in use is combined with standardisation in manufacture. The aim is to apply skill and ingenuity in these directions, not in the design of elaborate or highly specialised furniture, for which the field in education is narrowing. Teachers do not want furniture that stifles them with sophistication, but would prefer the money to be spent on good engineering and good finish. It is furniture that is versatile, that stimulates unforeseen applications, that doesn't imply a very particular use, which can truly be called a tool in the hands of teachers and pupils - to paraphrase the words of John Moss with which this paper began.

1. The Child and his Growth. Stella Duncan. Trends, February 1970, published by the Department of Education and Science.