



The Furniture Debate

On a special feature on school furniture, Sean McDougall argues that we need a radical overhaul of how we design school furniture, and Ray Barker provides some practical help and sources of information on how to spend the budgets we have now.

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Furniture for the Future

Sean McDougall argues that sitting comfortably really can make the difference to the way we learn in schools.



Sometimes the most amazing thoughts strike in the strangest of places. Archimedes had his Eureka moment in the bath. Newton had his sitting under an apple tree. Now I'm having one. I'm sat in an airplane somewhere over the Gobi desert and all I can think of is how, from a child's perspective, schools and airplanes are much the same.

Think about it. I arrived at a time decided by others rather than me. I had a list of prohibited articles that I could not take through the security cordon (the school gates). I ate at the same time as everyone else. I took my place at a pre-assigned seat where, unable to escape, I concentrated mostly on the sense of discomfort that the seat was giving me. Airplane seats seem to be designed solely around squeezing people in and keeping prices low. I find myself thinking that this is also true of the furniture we choose for schools.

The early Victorians, who invented our approach to schools, didn't have petroleum based plastic, extruded metals, injection mouldings and production lines. Indeed, when they began to expand access to education, they were still an agrarian society. Children were given time off at Easter and Summer to help with planting and harvesting. Freed from the constraints of mass manufacture, unit profits and re-sale, their furniture was optimised around factors like utility, comfort, lifespan and waste-reduction. It was a sustainable approach and it was also, in terms of ergonomics, much more advanced than our own.

There is no animal on Earth that chooses to sit with a straight back, a right-angled bend at the hips and a right-angled bend at the knee. The only reason why we do it is because it makes it cheaper to produce and transport furniture. 160 years ago, furniture was designed around what is actually going on in your back as you sit. A higher seating base was used – one that has a sixty degree bend at the knee, much as one would have while sitting on a horse. This allows the leg to take some of the weight of the body (which is what

they are designed to do) and relieves pressure on the lower back, which is otherwise unnaturally bent and placed under the weight of the whole upper body.

Desks show similar levels of forethought. The sloping desks used at that time allowed everyone to find a natural height at which to rest their elbows. They also reduced strain on the back by enabling a much more upright reading position. Try reading anything that is sitting on a horizontal surface. The only way to do it is to tip the head forward of the body, imposing a heavy weight on the upper vertebrae. This imposes a similar physical strain to trying to hold a bag of potatoes six inches forward of the body while trying to learn something.

Today, our children sit on seats designed for short-term use and optimised around the needs of the buyer. Bursars are attracted to plastic seats because they are cheap to buy and light enough to put on top of tables at the end of the day, thus reducing cleaning costs.

Outside of schools, the plastic seats that we force our children to use are mostly seen in places like village halls and waiting rooms. They are typically used once a week for up to an hour, supporting community activities like book-clubs, scout meetings and the Women's Institute. Between uses, they are stacked up in a corner, or arranged around the room so that people can use the space in the middle.

It was for these reasons that the Robin Day plastic chair has come to be seen as a design classic. However, when it is put into schools, its many attributes become massive failings. Between the age of five and sixteen, children will spend around 16,000 hours sat on a chair intended for short term occasional use. Sitting on these chairs is inherently distressing, such that anyone spending more than 20 minutes on one will be hard pressed to remain focused on anything other than their bottom. As the body struggles to remain balanced, pressure on the lower back leads to slouching. This in turn compresses the lungs, making it harder to draw

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in sufficient oxygen to concentrate (this is made even worse in hermetically sealed classrooms, where the oxygen level is typically similar to that of – surprise, surprise – an airplane).

How sad that financial cost rather than educational value should carry the day. Plastic chairs are undermining the ability of children to study and, quite possibly, damaging their long term health.

It was with this injustice in mind that (through the auspices of the DfES and Design Council) I worked with staff and students at St Margaret's High School

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in Liverpool to prototype and launch a new type of furniture called the Qpod. Manufactured by Anthony Hill of Stage Systems Ltd, the Qpod is neither a desk nor a table. Rather, like the furniture seen in photo one, it combines the two in a space efficient and ergonomic manner. Qpods are height adjustable – both the seat and the desk can be adjusted quickly to suit 98% of all height ranges found in the 11-18 age group. They encourage a much more upright posture (they even feature a saddle seat) and incorporate a sloping desk. The seat facilitates a natural movement that helps disperse nervous energy, returning focus onto the task at hand. Best of all, they release floor space so that it becomes possible for the teacher to move around the room providing support to children as and when they need it.



Next time you're thinking about buying furniture for use by students at your school, ask yourself this question: is there anyone in the country who would swap their office chair for a plastic seat and not expect to see a reduction in performance? Would you? Why, then, do we ask children to devote so much time to learning and then undermine their efforts by making them use furniture that all of us would reject as inherently unsuitable?

In The Apprentice, Alan Sugar gets a special seat indicating that he is the most important person in the organisation. But it seems morally repugnant (and strategically inept) to take this attitude in a school. Children are the most important people in any school. Their needs should never take second place to the wants of those who manage them.

There are alternatives. KI offers a range of furniture that supports collaborative learning and British manufacturers are increasingly offering height adjustable furniture. In Belfast, a company called Angel Ergonomics offers a combined interior design and ergonomic survey of workplaces. Rather than supply an ergonomic seat, plus an ergonomic keyboard, on an ergonomic desk (many of which are cost-led rather than effective), they will ask questions about the environment in which these are being used and help achieve a balance of products and processes. Most of the problem with furniture in British schools arises from the fact that children are unable to move during lessons. If the process changed so that they could bend, stretch and recover during lessons, we might be able to carry on with plastic chairs. If not, then doing something as simple as buying Back Care's seat wedge (£5) can change the shape of the seat to relieve pressure on young backs.

Soft furnishings offer another way forward. Alder Grange school in Lancashire has been experimenting with beanbags and settees to see how different heights, textures and arrangements can be used to support multiple learning activities. Their MFL lessons, and the teacher's perception of classroom space, have been

completely transformed using furniture that you can order over the phone from IKEA. Convention says that classrooms have to look a certain way. The fact is that over 80% of all the furniture, fixtures and fittings in a classroom can be moved or replaced with alternatives.

As we set about rebuilding and renewing our schools, the sustainability agenda will be accompanied by ever greater emphasis on the outdoors. Organisations such as Futurelab, a UK charity focused on education and technology, have been pioneering a return to learning on the move. Similarly, Learning Through Landscapes helps schools to re-imagine their use of outdoor spaces (including choice of furniture).

A sage was once asked what is the most comfortable position to sit in. "The next one," he replied. Back on the airplane, I'm thinking that the

guy up front probably has a better seat than me. Squirming from one position to the next, I reflect that all I have to do is pass the time until I can get out of this space. I wonder how many children I've flown over, and how many of them think the same in school every day.

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Ray Barker, Director of the British Educational Suppliers Association (BESA) suggests some ways to deal with issues in furniture in schools

QPOD BY STAGE SYSTEMS

Furniture in Schools: The real issues

Why do so many schools mistakenly complain that there is 'no good educational furniture'? The big issue, as with most educational resources, is budget. Many reports make reference to schools being 'constrained by a low budget' for furniture, and there being a requirement for 'an adequate budget to meet this need', yet the conclusions do not address the real issues, such as value for money, comfort, safety and ergonomics.

Furniture, including general administrative furniture, classroom desks and chairs, storage units, stage and performing arts essentials, as well as that meant for laboratories, forms 'a major part of any schools' spend – estimated to be up to £95 million per annum in 2005 for primary and secondary schools in England', according to new research from the British Educational Suppliers Association (BESA)*. Schools have increasing responsibility for purchasing, which means they are free to buy from an extensive and often bewildering array of manufacturers and providers. Building Schools for the Future will provide millions for equipping new schools. The latest budget says that capital investment will reach £1,000 per pupil by 2011.

For many schools faced with the prospect of their first new furniture for years, the problem used to be lack of experience and advice on what to buy. As heads scanned educational furniture catalogues they looked at prices that did not compare with the high street and, unfortunately, a proportion decided to buy 'cheap'. They purchased household quality furniture for as little as a third of the price of equivalent educational products, and thought they had a good deal. Educational furniture manufacturers, however, will tell you that the school environment is about the most hostile imaginable for a chair or table. Furniture members of BESA will normally manufacture to the British educational furniture standards BS4875 (strength and stability) and BS5873 (educational furniture), and now the European standard prEN1729 (chairs and tables for educational institutions). The latter is particularly to do with dimensions and ergonomic issues. Later standards in 2006 will deal with safety and stability – as well as environmental

and sustainability aspects. They are built to last for years – in school! Precisely what some unfortunate headteachers found when their high street furniture broke, usually irreparably, within six months. One of the conditions of membership of BESA is agreement to abide by the BESA Code of Practice. Only BESA member companies may use the BESAmark. You can be confident of safety, reliability and value for money with BESA members.

At present, manufacturers are constantly faced, when presenting schools with options for excellent, hard-wearing, flexible furniture, with the response, 'Yes, but what is the price of your cheapest chair?' There have been new entrants to this market who have tried to promote adjustable furniture, but they have had little success, primarily because of the lower cost of fixed alternatives. Schools, however, need to consider full-life costs and issues such as back pain and other potential problems which they may be creating for young people through the use of furniture of inappropriate height.

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Our British Standards for school furniture, along with those of our partners in Europe, are based on child-size data from the early 70s. It will come as no surprise that the population is getting bigger, with the attendant problem that too many children are therefore sitting on chairs which are too small. The Back Pain Association has plenty of evidence of the harm being done to young backs, yet our Standards which define the various sizes, remain out of date. In recent years, work has started on a new European educational furniture standard. With the DfES and FIRA (the Furniture Industries Research Association), we have funded a study to determine pupil sizes to feed a new standard, but this will not be effective unless we also find a way of requiring schools to use it. The survey data does not simply confirm that children are getting bigger, faster. There are results of far greater significance. For example, the range of sizes in any year group is far greater than in the 70s, implying that any class

sitting on fixed-height chairs will have some pupils perched too high and others crouched too low. A new website resource supported by BESA and the DfES with other partners will be an essential tool in helping educators get to grips with the real issues: <http://www.cfg.gov.uk/schoolfurniture/>

The chance for educators to see, test, and compare products and to meet manufacturers and service providers face to face is still one of the most cost-effective ways of establishing sound and effective purchasing practices in schools. Hence the popularity of the UK's most prestigious educational resources shows, organised by BESA and EMAP – The Education Show, which takes place every year in March at the NEC, Birmingham, and BETT, at Olympia in January. Entry is free and, with its extensive seminar programme, this event can also become a focus of professional development, showing educators what really works.

'The bitterness of poor quality lingers long after the sweetness of low price' is a proverb that should hang on all headteachers' office walls. It suggests a logical, commonsense approach which should be taken with regard to any items from which one wants many years of service in the harshest environments. BESA can help you with this.

There is much to change in schools. Conclusions need to shift to reflect the extent to which that process of change must start with training in schools, a review of the uncertainties of school budgets, strategies to help teachers become informed purchasers driven by their school development plan, and research to demonstrate the positive, standards-raising impact that such developments could have. BESA supports new initiatives from the DfES and the Design Council** to encourage informed purchasing of furniture as well as changed perceptions about value for money. There are challenging times ahead, but we need to be realistic about the issues. It's more than just a question of cost.

*** Resources in English Schools, March 2006.**

www.besa.org.uk

**** Kit For Purpose: Design to Deliver Creative Learning, 2002**

www.designcouncil.org.uk

When choosing furniture, consider:

■ Value for Money

Do not assume that cheapest is always best.

■ Co-ordinating furniture

Choose furniture which has been designed to co-ordinate with other items. This is not just about 'the look', i.e. storage units might all contain the same size trays.

■ Strength and stability of the furniture

The best way to ensure this is to buy furniture which has been manufactured to the furniture standards BS 4875 and 5873.

■ Ergonomics

The wrong choice of chair could result in back pain. Remember that the height of a chair should relate to the height of a table.

■ Creative use of furniture

Can furniture be used as space dividers or work areas?

■ Multi-functional furniture

Specialised furniture can have limited use and therefore tie up floor space.

■ Maintenance

Are there components which would be difficult or expensive to repair or replace?

■ A range of furniture

Spaces can be interchangeable and flexible in their use of furniture.

■ Find all BESA suppliers in our free BESAbook: *The UK Education and Training Products and Suppliers Directory*. Call 020 7537 4997 for your free copy.

■ Look for the BESA logo on advertising and in catalogues to be sure that you are dealing with reputable suppliers.

■ Visit www.besa.org.uk – the one-stop source of the latest product and supplier information for furniture.

■ For furniture, visit the BETT Show, 10-13 January 2007, Olympia – London and The Education Show, 22-24 March 2007, NEC – Birmingham.