Design Council

From the Inside Looking Out
Conference Report

From the Inside Looking Out
One-day conference on innovation in school learning environments
17 March 2005

Supported by

TES
THE TIMES EDUCATIONAL SUPPLEMENT

department for
education and skills

Welcome

From the Inside Looking Out was a welcome opportunity for educationalists, designers and policy makers to review the latest thinking on learning environments. It was particularly timely in the light of the Government's recent extension of the building programme to include primary schools and FE Colleges.

For me, perhaps the most important outcome from a very full day was the realisation that there is both a recognition on all sides that we must do more and a shared sense of urgency. To build on that, communication, in its broadest sense, has to be our watchword.

The key to success must be that the people who use schools are at the heart of a creative design process to improve their environments. The Learning Environments Campaign is working to understand how best to achieve that, but it will only succeed if we all work together.

This conference has been an important milestone. We hope you will gather fresh insights from the summary presented here and that you will want to join with us as the Campaign develops to build a better future.

David Kester
Chief Executive, Design Council

Building learning communities

Keynote address: Alan November

He billed himself as an outside agitator and Alan November's keynote was a rallying call to everyone involved in designing new school buildings. Don't be satisfied with improving on what we have, he said, grab this chance to create something new.

If we are to design schools for the 21st century we first need to discover what problem we are trying to solve. Configuring the spaces to deal with that is a secondary issue.

New problems, new solutions

Too many of our schools are technology rich but information poor.

Technology is posing new challenges. Our children will have to be agile participants in a global, connected society. They are going to need to be self-motivated, able to learn anywhere, any time and with anybody.

Three skills are critical. First, children must know how to handle massive amounts of information. Every child should learn about the grammar and the structure of the internet.

Secondly, we want to equip our children for a world of global communications. It should be as natural to them to interact with people in other countries as it is to play with their own classmates. Every classroom should be a window on the world with high-speed access to the net and wall-sized video conferencing.

Finally, children need to be self-directed. Most learning comes from the teacher; huge swathes of the curriculum are about helping children memorise what we already know. These are incredible limitations. They have to go.

The global economy

A friend's daughter graduated from top Ivy League universities. She found a well-paid job in the research department of a New York legal practice. Within weeks her job disappeared: the research department was relocated to Bangalore.

Since 2000 almost 5% of US jobs have been outsourced to other economies. Berkeley's business school predicts 17% will go in the next decade. These won't just be in manufacturing, they'll be desk jobs for highly qualified people in disciplines like architecture, design, radiology and accounting.

Are we creating a boomerang generation?

Alan November, educational strategist

Are we giving our children the right tools? We must teach them to become critical thinkers, not just trained monkeys. If we don't, we risk creating a boomerang generation of graduates, forced to return to their parents' homes because they cannot afford to move out.

Free the boomerangs

One school, based in an ex-Navy warehouse in San Diego, is the kind of place that stands a chance of motivating young people and equipping them with the skills they will need. Its designers had looked at modern business environments.

Its school day is structured 50:50, with children attending classes for half the day and working on self-directed assignments for the remainder. The building design supports this with traditional classrooms but also spaces for small group interaction; every child has their own office. Students receive one-to-one support from teachers who have had to reconceptualise their practice completely.

What's remarkable is that the students have raised their aspirations. Typically, they arrive 45 minutes early for school.

We have drastically underestimated the ability of teenagers to accept far more work if they own it. We need to raise the bar still further, because they will be competing directly with highly educated people from Asia and elsewhere who are used to a much higher work ethic.

Open the school gates

The Victorian industrial model is obsolete. We need a new paradigm for schools, one that breaks down traditional boundaries. We're going to have to be much more flexible about space and time.

Currently, most schools are designed to keep parents out. This is a huge mistake. Parental involvement is the number one indicator for educational success.

One school, at the bottom of the SATs writing tables, made videos to communicate with parents and enlist their support. The tapes were hugely popular. The professionals suddenly realised that by empowering parents they had accessed a huge, untapped resource. Guess how that school's SATs look now.

Beyond the classroom

Online learning is not some distant dream - it's already with us. China has the world's largest online university; Stanford offers MBA and engineering degrees electronically. Every child should be required to study online and the school day must adapt to this.

Schools are designed to keep parents out. This is a huge mistake.

Alan November, educational strategist

In the 1970s just 10,000 out of 52 million American children studied at home, now there are almost two million. This trend will continue, yet parents who opt out of schools are still seen as the enemy. The education system should be offering them services and resources, not fighting them.

When you empower learners to be self-directed, self-motivated and provide a curriculum online there's no limit to what can be achieved. The focus of control is shifting away from the teacher and we need to think about how that changes the teacher's role. What about students, families and head teachers?

The UK has a unique opportunity. No other country in the world has the chance to rebuild its educational infrastructure. If we get that right we can transform our children's futures. If not, we'll be saddled with many new, old schools. The stakes are high.

His parting shot: 'don't blow it.'

Alan November
is an internationally recognised writer and thinker on the implications of global and technological change for education and learning.

Immediate steps for building empowered learning communities

Workshop

All teachers and learners can plug into a global network of professional practice. Alan November introduced techniques for learning in a technological community.

Student collaboration

We should be teaching children to tap into the knowledge of other kids around the world so they don't have to learn everything themselves.

A 16-year-old American wrote a website about evolutionary biologist Richard Dawkins. She wanted to include a Flash-based interactive section and found two Russians to write it for her. Is that cheating or should she be rewarded? www.library.thinkquest.org/C004367/home.shtml

The global teacher

If a UK teacher corrects US students they have higher regard for that teacher than the one sitting in front of them. Children accept criticism more readily from someone they've never met.

In a few years' time parents will be able to view their children's classroom experience live on the internet. Once you start giving parents access to information you have a completely different relationship with them.

Who controls the learning?

We need to shift the locus of control. What if every student had an iPod? Language teachers could record lessons and 'podcast' the entire curriculum. That gives every child access and the chance to learn at their own pace.

Technology can help teachers to get time back for more productive tasks. We don't want teachers standing in front of the classroom, delivering information by rote that can be delivered remotely.

Critical thinking on the web

Too many schools teach Powerpoint and ignore critical thinking on the web. The net is our dominant information medium. We have to teach children its grammar. Until we do, they risk being manipulated.

Any version of the truth can exist on the internet, but you can also use it to spot patterns, to cross-reference and to identify communities of interest. When you know how to do those things it can be far more reliable than print.

For further information, visit Alan November's website www.novemberlearning.com or email him at alan@anovember.com

Building schools from the inside out

Policy forum

The next few years will see an unprecedented investment in school buildings. The Building Schools for the Future programme aims to provide 21st century facilities for every secondary school pupil in England through a programme of renewal and rebuilding over the next 10 to 15 years. Up to half of the schools will be new-build.

It's a huge opportunity, but with so many different people working together to such a tight timescale can we hope to get it right?

Building in innovation

Mukund Patel accepted that there were bound to be mistakes. The key thing is to learn from them. It must be a design-led process. He stressed that BSF needs to be seen not as a building programme but as an educational one.

Some people thought that BSF should be moving more slowly, focusing initially on exemplar schools so the programme's effectiveness is maximised later on. Others queried the whole idea of building for the next 50 years. We have no idea what learning conditions will be like by then. Our emphasis should be on making our buildings flexible and using temporary spaces.

Jill Stuart is delighted with her new-build school. She warned that it takes a long time to develop the meaningful conversations you need to get what you want. Given her time again she would want to talk and listen even more.

Scaling up

Scaling up is going to be our main challenge, according to Steve Moss. Pilot projects from the Design Council and others have been valuable but there are 170 schools in BSF wave one. To get best practice across the country we have to embed design skills in local authorities and schools. Without that, many schools will settle for a better version of what they already have. That would be a tragic waste.

The Design Quality Indicators developed by the Construction Industry Council (CIC) may be a step in the right direction. These provide distinct points at four different stages of a project where participants can assess its design aspects. Appointing design champions and client-side design advisors can improve stakeholders' control.

Engaging with users

It's not just about skills. Most teachers understand that environment is important to the learning process, but they don't always realise they can affect it. Stakeholders need permission to innovate.

Without design skills schools will just settle for better versions of what they have now.

Steve Moss, Deputy Director of Education, Manchester City Council

Children are important stakeholders. How do we engage with them? How should parents and the community be involved? Do they aid or inhibit innovation?

Caroline Fraser advocated bringing in fresh thinking by using architects without direct experience of education. Jill Stuart agreed with that, as long as they took the time to learn the language of education.

The resource question

The DfES, it was suggested, may be stifling innovation by issuing rigid building requirement bulletins. Mukund Patel disagreed - the bulletins are guidelines, not straitjackets. Some still felt, though, that inexperienced architects could be constrained by them.

Everyone saw the value of more participation. But who will pay for training days, workshops and design festivals? One suggestion was that a proportion of BSF funding be set aside. Patel saw this as problematic and suggested that local authorities take on this responsibility themselves.

Toby Greany observed that there were still big gaps between wants and needs. A sea-change is needed: everyone in the process should be addressing learning environments, not just buildings. To bring that about nationally we will need to invest in processes that can help change attitudes. It's going to be a steep learning curve.

Chair: Toby Greany
Campaign Leader -
Learning Environments, Design Council
Caroline Fraser
Enabling Advisor – Education,
Commission for Architecture and the
Built Environment
Steve Moss
Deputy Director of Education,
Manchester City Council
Mukund Patel
Head of Schools Capital Assets,
Department for Education and Skills
Jill Stuart
Head Teacher, Summerhill School

What we got from the process

Discussion

Colin Burns spoke to Alan Yates, Head Teacher, Great Sankey High School and David Hampson, Deputy Head, Alder Grange Community & Technology School, about their pioneering work with the Design Council's Learning Environments Campaign. The Campaign is supported by the DfES to work with selected schools around the country to research better learning environments.

CB Can you tell us what you were expecting?

AY I thought it would be all about buildings. You were coming to do a Laurence Llewellyn -Bowen makeover.

DH We were expecting a team of wacky people with weird ideas and flash, inventive, expensive solutions that hopefully someone would give us loads of money to implement

CB And how did the experience differ from that?

DH The team that arrived included designers, procurement experts and educationalists. They were very creative and willing to listen and learn.

AY It was about a process, a way of thinking. We wanted to be a learning school and the process helped us to really define what we meant by that.

DH We were interested in the learning environment and its impact on concentration. We had dozens of projects, but, like Alan, the thing we got out of it most is the process. It's taught us a new way to think about what we are doing in school. That's turned out to be much more valuable than the actual physical environmental changes, because we can apply the process to anything.

CB Has the way you run the school changed since you got involved?

AY I think we were always pretty good on the vision side. We knew where we wanted to go. Where we maybe fell down was on the practical steps. We were always chasing the holy grail.

The process helped us in several ways. One is emphasising the importance of clearly defining what the holy grail is before you start looking for it. The second thing we've learnt is a way of involving the whole school – students, parents, everybody – and getting ownership. Once you get that there's a lot more synergy. The third thing was to test things on a small scale first. Get the prototype done very quickly, see if it works and don't be afraid of ditching it.

Only the people who work and learn there can inform a brief for a whole school system.

Toby Greany, Campaign Leader, Design Council

CB Have there been other outcomes?

DH We've used the process for involving all the stakeholders in how to spend the school budget and what the priorities should be globally. That was extremely successful.

AY We're changing our school day and our curriculum as well. We couldn't have moved that quickly without this process.

DH It's also made us much more critical. We don't just accept what we're given anymore. We're putting up a sports hall at the moment and the architect's getting increasingly bothered by us asking him, 'why are we doing that?' The starting point for us is always to ask what the benefit is for the pupils.

CB From what you're both saying it does seem that these techniques are simple to implement and that they appear to work.

AY The thing I'd say about it is that we're not sure anymore whether it's the Design Council's influence or whether we've done it ourselves – we've definitely done all the work. We've adopted and internalised it and that's very important, but these techniques are applicable anywhere.

Colin Burns
Independent strategic innovation consultant
David Hampson
Deputy Head, Alder Grange Community & Technology School
Alan Yates
Head Teacher, Great Sankey High School

From teaching to learning

Case study workshop: Great Sankey High School

Head Teacher Alan Yates and his deputy, Julie Hazeldine, dispensed sticky wisdom on Post-it notes and discussed how their relationship with the Design Council has helped to transform their school.

The session began with a brainstorm. The group was asked to write down blockers and enablers for the perfect learning environment on Post-its. Five minutes later there were 150 ideas on the wall.

Making ideas stick

Brainstorming is the easy bit. Translating those ideas into action can be tougher, Yates explained. You need to understand where you are and where you want to be, and work out steps that will get you there. It sounds basic, but this is where many organisations fall down.

Yates offered up some techniques to help build that understanding. Storyboarding is about visualising a narrative linking the current reality to a future aspiration in a series of scenes.

For instance, a group of teachers at Great Sankey shared best practice to develop a storyboard that visualised how a particular pupil, always scruffy and late, became smart and punctual. The boy's teacher tried the recommended steps. It worked.

Alternatively, if you don't see yourself as a natural cartoonist, you could try the sticky steps method. Here you start with the objective and use Post-its to work backwards one stage at a time until you arrive at the current situation.

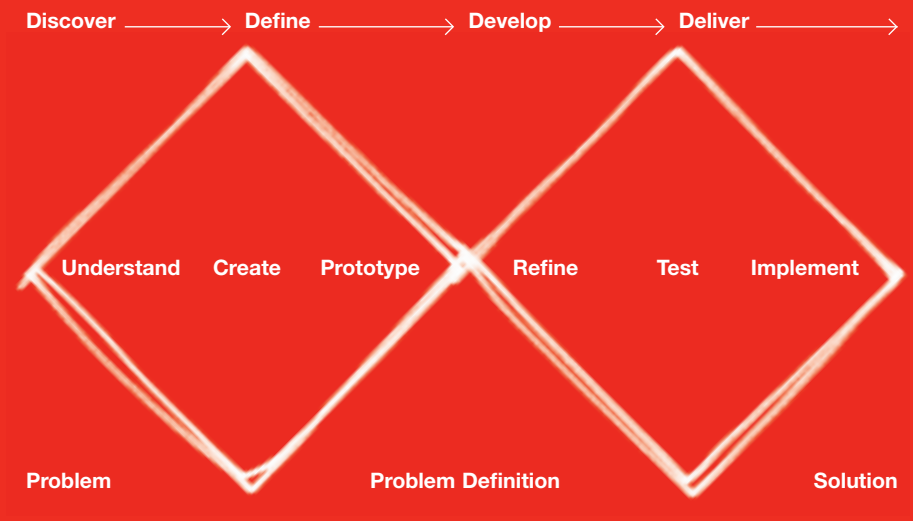
Great Sankey has used these techniques to develop practical ways of implementing a praise culture. They now have plasma screens around the school which celebrate the achievements of students and staff, and praise postcards, which are sent to both students and staff.

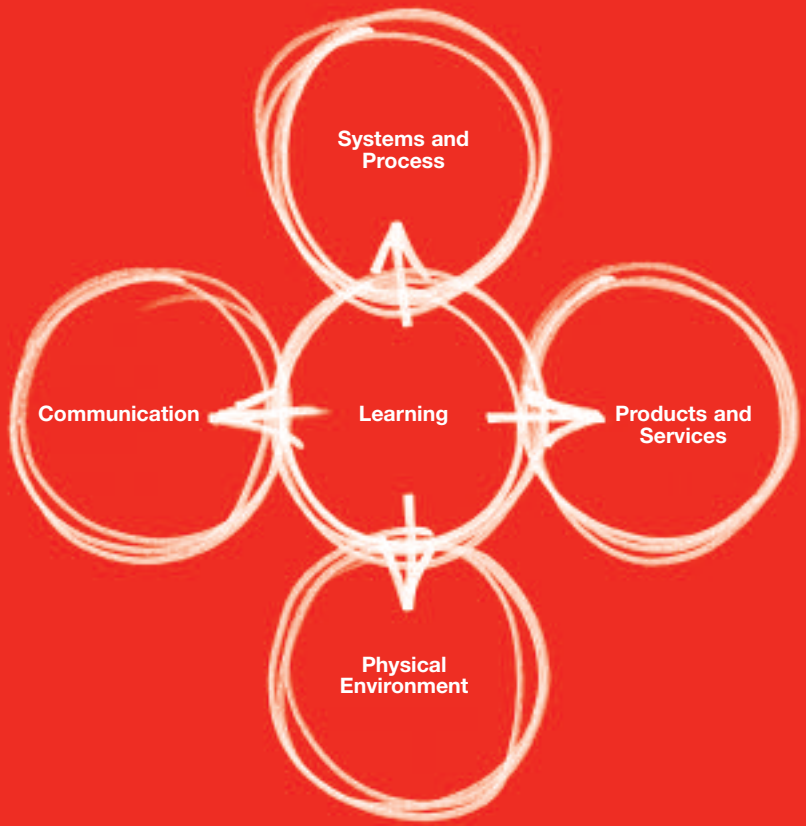
Delivering change

Yates admitted a fleeting sense of disappointment right at the start of the project. He had been expecting some concrete design assistance: tips on building design and advice on furniture catalogues.

It didn't turn out quite like that. Instead, the school got insight into design-based thinking. The consultation began with a two-day workshop involving ten teachers and a group of students. The skills they picked up were transferred to the rest of the school via a series of inset days.

He recalled when the designers first walked into the staff room. They asked: 'What is this place? Is it a coffee room, a workplace, a dumping ground or a social space?' Although it was all of these, it didn't fulfil any of the roles well.





A design-led approach has become embedded in how the school works.

Alan Yates, Head Teacher, Great Sankey High School

That led to a process, which culminated in £20,000 being spent on refurbishment. It's been money well spent. What was a backwater has been transformed into a popular centre for professional development, knowledge sharing and social interaction.

Owning the process

The design-led approach has become embedded in the way the school does things. It's helped it to promote a far more consultative style.

The school's many successes – it's gone from bottom to top in the area for A level results, its band recently won a national competition and it's reinvented itself as an engineering college – are the products of an engaged, participative and, above all, a motivated culture. It would never have happened without the challenge to existing modes of thinking triggered by the project.

Chair: Colin Burns
Independent strategic innovation consultant
Julie Hazeldine
Deputy Head, Great Sankey High School, Warrington
Alan Yates
Head Teacher, Great Sankey High School, Warrington

Raising boys' achievement

Case study workshop: St Margaret's Church of England High School

Arriving at the flexible classroom case study workshop, participants found themselves lined up in parliamentary style with rows of chairs facing each other. No one was comfortable: some chairs were too high, others too low.

The traditional upright chair and flat desk have been responsible for back pain, as well as hampering concentration and lowering performance. Typically, children have to sit for around 15,000 hours during their school careers: the same standard furniture is used by most pupils, whether they're 11 or 18.

All this should change when new European standards on posture in schools come into force. The chairs used in this workshop are designed to meet the new guidelines and, everyone was relieved to discover, they are adjustable.

Debating motion

If participants thought they could now relax they were swiftly disabused. The facilitators staged a quick-fire debate. The benefits of an active learning style fostered by human interaction were amply demonstrated as the two sides cheered and jeered on the merits of appointing Jamie Oliver as food minister.

Chairs were moved to reconfigure the room into a horseshoe format.

The traditional classroom, with teacher at the front and pupils in a grid formation, hasn't changed for nearly 200 years.

The group heard about a revolutionary classroom design currently being piloted in a Portakabin at a boys school in Liverpool as part of the Learning Environments Campaign. This new space, a 360° classroom, is designed for maximum flexibility.

Rotating heads

There is no back of the room for reluctant students to hide in. It is equipped with prototype Qpods - rotating stools with tables that double as back rests. There are removable whiteboards on every wall and a multimedia hub at the centre. The classroom even has window blinds that double as whiteboard space.

Students can move their Qpods during the lesson depending on the learning style needed. Teachers, who have no desk of their own, have access to all areas thanks to a 'racetrack' round the room's perimeter.

Being able to move freely creates a new dynamic, and teachers who have used the room report that they are able to structure more varied lesson plans.

The removable whiteboards double as tables for group work. In total the room has 34 times as much wall space for writing as the typical classroom. Storage has also been streamlined, with spaces for temporary and permanent items built into the walls.

Kids raise their game if they're given more professional tools.

David Summerfield, Designer, forPeople

Clearing a path for learning

The project had in fact begun by looking at storage. Teachers were finding that boys' bags were stopping them from getting to the back of their classrooms. However, as the conversation developed, the multi-disciplinary team (comprising designers, manufacturers, procurement specialists and educationalists) uncovered deeper issues about boys' concentration spans, their motivation and engagement.

Boys, in particular, respond well to varied activities and a change of gear. The 360° classroom seeks to address that. It's still in its testing phase so feedback is limited, but already it appears that the classroom supports much higher levels of interaction.

What's also clear is that the boys enjoy being there. For David Summerfield, from designers forPeople, kids raise their game if they're given more professional tools. For many, it's the first time they've been in a workspace that's geared to their needs. Even if this turns out to be its only advantage, that must have positive consequences for learning and performance.

For more on the 360° classroom see the Learning Environments Campaign Prospectus, available from www.designcouncil.org.uk.

Chair: Sean McDougall
Campaign Manager, Design Council
Michael Buchanan
Education consultant, Place Group
David Summerfield
Designer, forPeople

Improving concentration

Case study workshop: Alder Grange Community & Technology School

Deputy Head David Hampson, described how a Learning Environments Campaign project at Alder Grange Community & Technology School had tackled environmental factors which were inhibiting student concentration. As always, the project began with a brainstorm.

Illuminating feedback

Some responses were predictable. People complained about noise from corridors and scraping chairs; about light, be it glare, direct sunlight or blinds kept closed all day. Classes were stuffy, too hot and too crowded.

Other responses generated new insights. Pupils were getting dehydrated in the afternoons, but the school couldn't persuade them to drink more water. The design process uncovered the reason: the toilets were unpleasant and students didn't want to go there. The school has now broken that cycle. It's built a new toilet block.

The visual environment

With limited resources, Alder Grange chose to focus on lighting for its project with the Design Council, although other issues identified in the initial brainstorm are being addressed separately. The school was looking for replicable solutions. It selected four typical areas, three of them classrooms, the fourth a corridor.

The design team began with a rapid prototyping exercise. They bought Anglepoise lights, plants and paper cups to simulate hanging lights and kitted out a classroom. Pupils were asked for their views.

The team recruited an architect and a lighting designer. As they collaborated, it became clear that lighting was only part of the story.

The team identified three ways that the visual environment was hampering concentration. It set out to restore clarity, to provide a focus for learning and to generate a sense of identity.

At Alder Grange the message of education was being lost in a mass of clutter. The school introduced a bold colour-coding scheme to delineate the school by subject area. This, together with large signs for classrooms, has reduced confusion and given each department an identity.

The school is far more aware of the value of display. It is now very selective about the information it presents. It has clearly defined, well-lit information areas.

Paying attention

Students complained that both the maths and science rooms felt disengaged and chaotic. By painting focus walls with the subject area colour, co-ordinating that with new furniture, using a combination of task-based and ambient lighting and removing distracting displays the team was able to provide students with much more cohesive environments for learning.

With 650 pupils in a school designed for 450, crowded corridors was always a problem. Colour was introduced selectively to indicate subliminally which side should be used for travel and where students should assemble for lessons. The GCSE statistics group was asked to map the traffic flow, which proved the scheme's effectiveness.

The language lounge

With its thick curtains and low ceiling, pupils found the language room claustrophobic. The team lowered the ceiling and painted one wall bright red. This created a relaxed, homely environment. The room was divided into four zones for speaking, listening, reading and writing, with controllable lighting to suit each task. The changed room design has also altered the way the teachers structure their lessons.

The design exercise raised teachers' consciousness of the impact of light on learning. Alder Grange has realised that little things, like painting a wall or moving a notice board, can have a massive impact. It is not afraid to experiment or make mistakes. That may turn out be the most valuable outcome from the entire exercise.

Chair: Esme Fisher
Project Manager, Design Council
David Hampson
Deputy Head, Alder Grange Community & Technology School, Lancashire
Devki RajGuru
Lighting Designer, Erco Lighting Ltd

Schools at the heart of the process

Workshop

We need to find ways to involve the entire community in the learning process. Through a participatory process, School Works empowers secondary schools to explore how learning environments can be improved. It aims to embed design skills where they are needed in schools and LEAs.

Consultation is dead, long live partnership

School Works liaises with LEAs to identify participating schools. It sets up a multi-disciplinary team, which includes design champions from the selected school, an LEA administrator, a School Works representative and other stakeholders.

The School Works approach attempts to break a paradigm in which, in the words of MD Ty Goddard, 'too many of us have become expert at dealing with the mediocre'. The team tours examples of inspirational architecture meeting both its users and architects. They discuss aesthetics but also practical issues like circulation and functionality. School Works then runs a design festival in the school. Outputs from this might include models for buildings, poetic designs and wish lists. Finally, the team presents a series of themed recommendations.

Embedding design in the community

Northampton Town Learning Partnership (NTLP) is transforming a three-tier school system into a two-tier one. It has a £180million budget and a total of 28,000 pupils and 3,000 staff. It joined with School Works to involve the local community in developing criteria for a PFI new-build project at Duston Secondary School.

The outcomes identified key priorities for the new building, which were included in the tender document:

- A single entrance
- A welcoming reception area
- Spacious circulation areas
- Areas to display pupils' work
- Landscaped surroundings
- Spacious classrooms
- Other kinds of seating areas
- Access for the local community
- A strong sense of identity.

The collaboration was a powerful learning experience for NTLP, informing its entire approach. It now emphasises the importance of design considerations in learning environments to a far greater extent. It has since distributed a paper to all of its schools describing the process and urging them to develop similar participatory schemes.

Too many of us have become expert at dealing with the mediocre.

Ty Goddard, Managing Director, School Works

Educationally challenged

As the head teacher himself put it, the best way of describing Kingsdale in the late 1990s was Chris Woodhead's comment that it was 'as educationally challenged as any school in the country'. The school has recently come off special measures after joining up with School Works to undertake a design consultation exercise that empowered the students.

The winning design in the subsequent architectural competition run by School Works created a new interior space in the former courtyard using the world's largest heat-sensitive, inflatable membrane roof. A geodesic auditorium inside the courtyard has equipped the school for the first time with a space that accommodates more than 100 people. There is bold use of colour throughout.

The students love the results. The pride engendered by their workplace has contributed to Kingsdale being ranked among the top 20 most improved schools in the country for the second year running.

Search for 'kingsdale' at www.designcouncil. org.uk
Also visit www.school-works.org.uk

Hugh Dames
Project Manager, School Works
Rod James
Northampton Town Partnership Learning

How to improve your school's learning environments

Workshop

The design immersion process used by the Design Council team in schools uses at least 20 different techniques. In this interactive session participants got a taster of two of them. They also sampled a new tool being developed for the Learning Environments Campaign by Ultralab.

Speed dating

As an ice-breaker and to demonstrate how quickly ideas can be harvested using Post-it notes, participants split into pairs and were asked to come up with barriers and enablers for the perfect learning environment. So many ideas were generated so quickly that it wasn't long before 'lack of Post-it notes' was raised as a barrier.

IKEA drives me crazy

The global blue and yellow retail phenomenon that is IKEA impinges on our cultural consciousness in ways that few other retailing giants have managed. People may love it or loathe it, but it is impossible to ignore.

Knowing this, the Design Council's facilitators used IKEA to illustrate how its four-quadrant model can help schools to harness and organise their thinking around any problem. What, participants were asked, did they think about IKEA. The responses were then allocated to one of four quadrants:

- Systems and processes
- Environment
- Products and services
- Communication.

Taking a few contributions at random these related respectively to:

- One-way traffic
- Spicy meatballs
- Flat-pack furniture
- Weirdly named items.

The responses were grouped into clusters and sorted into positives and negatives. The meatballs got a resounding thumbs-up. It was swiftly becoming clear where IKEA's strengths and weaknesses lay. Next was to be a voting stage: The power of this simple technique for promoting involvement and eliciting insights was already apparent.

The critical lesson for all of this for schools were that all stakeholders' voices can and must be brought into discussions on learning environments. Equally, design is about more than just physical space, schools must also consider how their systems, communications and actual products interrelate with that space to support better learning.

How can a school's environment support and reflect its wider vision and ethos?

Toby Greany, Campaign Leader, Design Council

Designmyschool.net
In the remainder of the session we trialled a prototype version of a web-enabled interactive questionnaire designed by Ultralab in conjunction with the Design Council. This is intended to encourage users, especially pupils, to think more critically about the impact of their environment on learning. Schools can collect and collate data from classes, departments or the entire school and they can monitor changes over time.

The user interface protects children's anonymity and makes answering the questions fun and simple. The site is supported by an extensive set of case studies citing best practice in schools around the world.

This was a beta version and the developers wanted (and received) teachers' input as to how it could be improved. Many could see an application in their own schools.

To try out the system go to www.designmyschool.net and type 'teacher' as both username and password.

Hannah Ford
Design Manager, Design Council
Jonathan Furness
Technical Manager, Ultralab
Carmel Hayes
Design Manager, Design Council
Hal Maclean
Project Leader, Ultralab

Designing learning environments

Design Forum

Do we want our schools to last for fifty years?

Paul Fletcher, Principal, Fletcher Architects

The rebuilding programme is underway. A new secondary school opens every four days and a major capital programme has been announced for the primary sector. Is design quality central enough and what can we do to bring it to the fore?

How do we deal with kids with bent backs?

Furniture design, said one manufacturer, is uneconomic. His company's chairs and tables were sometimes criticised for being old-fashioned, but they are very successful because they are cheap.

BESA's furniture group has done research which supports this view. It asked teachers to rank four factors in their purchasing decisions. Easily most important was price, then came standards compliance. Design ranked third.

Richard Eisermann agreed that designers were not always price conscious, but it was also a question of education. It was a struggle persuading schools to buy quality chairs even if they do last far longer. Perhaps the new three-year budgets will make it easier.

So often, quality is equated with price, but if kids' backs are bent by poor quality furniture it has an impact on the UK economy further down the line. The trouble is it's hard to measure such downstream effects.

Keith Snook noted that in the aerospace industry, aeroplane engines continue to be owned by the manufacturer. This leads to lifecycle costing which has had positive implications for reliability and service. He wondered whether the same philosophy could be applied to PFI providers.

Can PFI deliver quality design?

An architect mentioned that, typically, his practice has just 12 weeks to design three secondary schools in the PFI tender process. That's just not enough time.

Paul Fletcher agreed, but said it was up to schools and LEAs to develop a clear brief with their own architects and design advisors before the PFI button is pressed. He called on schools to challenge their LEAs and not let the system 'do to them'.

There are signs of change. Some PFI providers are realising that being able to improve educational attainment can give them a competitive advantage. It's one way that design is coming into the equation.

Back to school

When the architects write the functional brief it is usually far too abstract. Educationalists must get involved if we are to get buildings that are fit for purpose.

A teacher felt that most of her colleagues did understand the importance of environment, but didn't have the tools to effect change. She wondered whether we should look at teacher training.

Ray Barker said the National College of School Leadership had a big part to play. It should be making it clear to potential head teachers that, actually, environment matters; that's what heads are managing.

Experimenting with children

Fletcher argued that not many people are building schools for the future. Mostly, we are building OK schools for today.

Of course we don't know what the future is going to be so it could be that it's impossible. Perhaps we should be creating flexible spaces, which can be modified as educational priorities change.

We have to strike a balance, he said. Active prototyping is unacceptable. We can model spaces on computer now and it's too disruptive to use children as guinea pigs.

But Joe Heapy asked whether schools are innately conservative places. That would make innovation harder to deliver. He thought we should experiment more.

It was noticeable, he said, that we were talking about buildings and furniture, but schools are also human systems doing very complex things. Design can help with that process.

Applied imagination

Fundamentally, design is about narrative and for one delegate the special link between designers and children was worth protecting. He had run a project where primary school children were asked to bring in a picture of their favourite seat. Along with the beanbags, sofas and spinning office chairs he expected to see, one child arrived with a photo of himself, sitting on his dad's shoulders.

Design is moving up the agenda in many schools, but we still need to clarify what it can achieve. In particular, as well as looking at furniture and premises, we should be alive to its value in supporting and nurturing children's imaginations.

Chair: Richard Eisermann
Director of Design and Innovation, Design Council
Ray Barker
Director, British Educational Suppliers Association (BESA)
Paul Fletcher
Principal, Fletcher Architects
Joe Heapy
Designer, Engine
Keith Snook
Director of Research and Development, Royal Institute of British Architects

The agenda for change

Keynote address: Stephen Heppell

What makes this area so significant? It's the sheer range of ideas, the passion it generates. Stephen Heppell still isn't certain we've got it right. We need to look around us.., he said, and find out what happens in other cultures and other places.

For instance, how many people know that in Denmark there's a school that's handed the provision of dinners over to the children? It's more than a free lunch; students earn credits for economic zeal, nutrition and food preparation. That scheme's been running brilliantly for two years.

A £70billion capital programme and a new school opening every four days should be cause for celebration. Heppell's not so sure. He sometimes got depressed, he said, because we don't seem to be able to hang onto the things we already know about learning.

A few things we know

First, movement: when they engage with media-rich environments kids don't move about so much. The learning has to come to them. One pupil at Kingsdale school put the problem with his school succinctly: 'They keep frigging moving us'.

There may be less movement within institutions, but there is going to be far more movement between them. At a maths and science school in Adelaide, kids from 11 up regularly sit in on university lectures. Not surprisingly, they're doing really well.

The second thing we know is that mixed-age teaching is far more effective. It may be convenient to put kids who are all the same age in one room, but it doesn't work for *them*. Sooner or later human rights legislation will ban it.

And we know that this is a learner-centric world. In the 60s and 70s there were plenty of children and boring jobs to fill, it didn't matter if some slipped through the net. Not any more - today's children are precious, a scarce resource.

We know too that there's no such thing as the ideal school size. Big schools, little schools, they all work.

Something else we all know instinctively. When you engage children and teachers in designing their own environments they reflect on those environments. That meta-reflection translates into dramatically improved performance.

We need communities that can be housed in, and moved between, institutions.

Stephen Heppell, Director, Ultralab

It doesn't even matter whether the design is any good. Even when the design is poor, so long as you talk to the kids, they still do better. When the design is good, the difference is astonishing.

And we know that kids don't all join hands, wait for a signal and move forward together. They have unique, amazing vectors of learning. They rush off in many directions and pursue different enthusiasms.

Learning communities

An Ultralab initiative gave children in schools online access to PhD scientists, with teachers in a background role. There were terrific outcomes. The scientists knew more thermodynamics, but eight-year-olds were teaching them about badgers. They grew to respect each other's perspectives. It developed into a learning community.

So what buildings should we be erecting to capture all these certainties? Whatever they are, they're not the ones we're getting at the moment.

We're not going to be able to design institutions that contain communities. That won't be possible in our interconnected future. The real design challenge is to create communities that can be housed in, and moved between, institutions.

Look around and you'll find some fantastic initiatives and there'll be inspirational teachers doing marvellous work. It's just that, right now, it's not joined up.

Engaging users

Take the idea of design and engagement. What happens five years on? If your big brother helped to design your school, where's the engagement for you? If the previous head of department specified your classroom how does that help you teach? There's little enough engagement as it is.

One way to address this is to think about genuine agility in design. Unlimited, a thriving small school based on the top floor of a department store in Christchurch, New Zealand, has a design life of five years. It reflects the kinds of things that children always say they want from their teaching environment, such as light, colour, quiet places and spaces for relaxing. It's designed for the children who are in it. When they graduate, it will shut.

Putting kids of the same age in the same room doesn't work for *them*.

Stephen Heppell, Director, Ultralab

The school has infected the whole shopping mall with learning. They've had to change the car park opening times for shoppers who want to attend evening courses.

Think about the NEC. They reconfigure it every week for Crufts, for gigs, for industry exhibitions. Maybe these are the prototype spaces we need for children.

Active learning

We live in the age of the internet and everything is a click away. People download music, they modify it and put it back into the system. Photos are shared, holidays are booked. It's going to be a peer-to-peer culture.

We need to be ready for that. We'll have to be active participants, not just willing recipients of top-down provision.

The dialogue between designers and learning experts is still not good enough.

'If I ask any architect, "why did you triple glaze that window" they'll tell me with absolute precision how much energy would be lost otherwise. If I say to them "I think you've got this classroom wrong. How much learning do you think is leaking out under the door?" they haven't got the foggiest idea.'

Designers don't know enough about learning and teachers don't realise just how creative designers can be. We are each other's best resource, but people still don't trust that.

Our future depends on building vibrant learning communities. We need to design buildings and systems that encourage active learning. The design dialogue needs to be ongoing; it needs to be happening at all levels, all the time.

His parting words echoed Alan November earlier in the day. 'We're living in the twenty-first century. Wake up'.

Stephen Heppell
is the founder of Ultralab, the internationally recognised learning technology research centre.

Reflections

If there was a single theme etched through the entire conference it was that creative processes must be at the heart of the school building programme.

This is an exciting time to be involved in education. Our understanding of effective teaching and learning is changing fast, but our environments are still playing catch-up.

The Government's capital programmes give us a unique window of opportunity at a critical moment, but there is a danger that we may simply focus on complying with minimum standards or installing state-of-the-art facilities when better learning is what's important.

Schools are being asked to reinvent themselves for a future that doesn't yet exist. This is a complex, multi-dimensional task that needs to look beyond the immediate physical environment to consider how the school will operate as an integrated system. Key to this will be that each school's users understand and own the process so that it meets their unique vision and needs.

The Design Council and others are working to understand how this can be achieved. In the coming few years we will be developing and disseminating practical tools alongside case studies of innovation. We will also be working to influence the policy and funding frameworks so that they genuinely support schools to improve their environments.

Mistakes will be made, but we cannot afford not to take risks. Looking beyond the campaign we are calling for an International Centre for the Learning Environment that can collate and disseminate good practice and research. We must all continue to innovate and learn as we go forward.

Toby Greany
Campaign Leader, Learning Environments
Design Council

About the team
The Learning Environments Campaign is one of four campaigns overseen by Richard Eisermann, Director of Design and Innovation at the Design Council. The other campaigns cover Technology, Manufacturing and Design Skills.

The Learning Environments team consists of the following core members:
Toby Greany Campaign Leader
Sean McDougall Campaign Manager
Anna Richell Design Strategist
Carmel Hayes Consultant
Esme Fisher Co-ordinator

External consultants
Craig Anders/Nick Thompson/James Dodrell Cole Thompson Associates
Dave Barlow The Audit Commission
Michael Buchanan Place Group
Colin Burns Designer
Chris Cotton Leading Education
Joe Heapy/Oliver King Engine
Rob Knight Davis Langdon
Devki RajGuru Erco Lighting Ltd
David Summerfield/Richard Stevens/ Michael Tropper forPeople

Expert Panel members
Chair: Mike Gibbons Lead Director, Innovation Unit, Department for Education and Skills
Ray Barker British Educational Suppliers Association
Mary Bousted Director General, Association of Teachers and Lecturers
Dame Pat Collarbone London Leadership Centre, National College of School Leadership
David Crossley Director of Achievement Networks, Specialist Schools Trust
Patrick Diamond Education Advisor, No.10 Policy Unit
Bob Doe Editor, *Times Education Supplement*
Caroline Fraser Enabler, Commission for Architecture and the Built Environment
Ty Goddard Director, School Works
Paul Grainger Principal, Runcorn and Widnes Sixth Form College
Joe Heapy/Oliver King Partners, Engine
Wayne Hemingway Hemingway Design
Professor Stephen Heppell Director, Ultralab
Steve Higgins Director, CfLaT, University of Newcastle
Iain Hulland Head Teacher, Alder Grange High School, Lancashire
Rob Knight Partner, Davis Langdon
Bill Lucas Bill-Lucas.com
Roland Meredith Education Consultant, KPMG
Steve Moss Head of ICT & MIS, Manchester City Council
Sue Mulvany Director of Education and Cultural Services, Lancashire County Council
Wendy Parmley Head Teacher, Archbishop Michael Ramsey Technology College
Mukund Patel Director, School Buildings Design Unit, DfES
Chris Poole eLearning Solutions Business Manager, Microsoft
Keith Snook Director of Research and Development, RIBA
Richard Stevens/David Summerfield Partners, forpeople
Sonja Stockton Head of Training, National Grid Plc
Richard Williams Director, Williams Murray Hamm

Contact us
Design Council
34 Bow Street
London WC2E 7DL
United Kingdom

Telephone +44 (0)20 7420 5200
Facsimile +44 (0)20 7420 5300
Email info@designcouncil.org.uk
www.designcouncil.org.uk

Registered charity number 272099
ISBN 1-904335-15-2

Written by Charlie Errington
Designed by Small
info@studiosmall.com

Photography by
Nigel Shafran:
front and back covers
Phil Sayer:
pages 1/10/13/22/25/26/43/44
Ranald Mackechnie:
pages 2/3/9/16/21/31/32/37

Printed by The Good News Press

Stock by Robert Horne
Revive uncoated made from 80% de-inked post-consumer waste / 20% mill broke. Revive gloss made from 75% de-inked post-consumer waste.

Design Council
34 Bow Street
London WC2E 7DL
United Kingdom

Telephone +44 (0)20 7420 5200
Facsimile +44(0)20 7420 5300
Email info@designcouncil.org.uk
www.designcouncil.org.uk