DESIGN FOR LEARNING

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DEMOS

in association with

THE SORRELL FOUNDATION

The Sorrell Foundation was set up by Frances and John Sorrell with the aim of inspiring creativity in young people and to improve the quality of life through design.

It prototypes ideas and initiatives to explore and test their potential and to dilute the risk in their development. It believes in fast track activity to deliver impact and benefits in the short term whilst creating models which have long-term implications.

The current focus of the Sorrell Foundation is on finding effective new ways to join up public sectors such as education and health with the skills and expertise of the UK's design community in order to improve quality of life in schools and hospitals through design.

Demos is an independent think tank committed to radical thinking on the long-term problems facing the UK and other advanced industrial societies. In particular it has shaped the agenda on creativity in education and the transformation of schools.

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In all its work Demos brings together people from a wide range of backgrounds in business, academia, government, the voluntary sector and the media to share and cross-fertilise ideas and experiences.

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The Sorrell Foundation was set up to inspire creativity in young people. To help give them a new, inspiring set of skills. The Foundation also aims to improve the quality of life through design – to make things work better.

The importance of design to business is now widely recognised. The UK design industry is worth £6.5 billion and employs more than 75,000 people. Most of its work is for the commercial sector. The Sorrell Foundation encourages good design in places – such as schools and hospitals – which would also benefit from the skills of the multidisciplinary world-class UK design industry.

Joinedupdesignforschools is a pilot project funded by the Sorrell Foundation to join up UK designers with schools across the country to demonstrate how design and creativity can improve the quality of life and learning in schools.

In each case the school students are the client, creating a brief and taking responsibility for the project, working with design companies who have contributed their time for free. Joinedupdesignforschools has had a significant impact – for schools the high-quality design solutions can make a real difference; for students the benefits are truly cross-curricular with the development of key creative skills such as communication and teamwork.

But perhaps most significantly Joinedupdesignforschools builds self-confidence and belief in the students and school communities it has touched – as one student said, 'It has made us all feel proud – proud of our school – proud to be part of our school, and proud to have been part of improving it.'

Creativity changes people's lives. The freedom to create is the mark of a truly advanced society. Creativity in business and personal life is enriching and rewarding. In short, creativity improves the quality of life.
John Sorrell, Chairman, The Sorrell Foundation

1 Introduction

Joinedupdesignforschools was initiated in July 2000. It has two main objectives:

- to explore the potential of partnership between schools and the design community and to demonstrate the potential of good design to improve the quality of life in schools

- to look at the educational value of the process of design and how it can help inspire creativity in young people.[1]
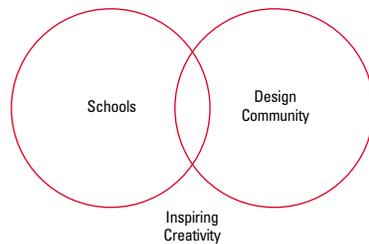
Based on a partnership model, the project draws on skills and knowledge from business and the wider community in order to help meet the educational challenges and design needs of schools and students. It offers a model of how business and education can work together for a common creative goal.

The project is modelled on the process which is integral to the design profession itself – participative client teams working in partnership with designers to define a problem/opportunity, consult 'users' on the key issues, develop a 'brief' for the expected outcomes and then create potential solutions. It provides a dynamic and innovative model for schools to relate creative learning practice to outcomes.

This report provides an overview of the project and its methods, and an initial assessment of its achievements and potential to contribute to the wider goals of public service renewal.

Learning environments

In seeking to influence quality of life in schools, Joinedupdesignforschools uses a rich conception of the 'designed' learning environment and aims to achieve tangible improvements to it by involving students, teachers and designers in a team-based process. This view of the environment also includes community, culture and identity, and the ways in which they interact with everything from furniture to uniforms. It also incorporates the virtual, communications technology environment and other less tangible influences on learning such as the way space is used and managed, the role of branding and organisational form.

The organisational environment created by schools is influenced by many factors, from the timetabling of the day to relationships between students, teachers and other staff, and the roles played by the broader community of parents, governors, employers and civil society. It reflects, in other words, the relationship between schools and the external world around them.

Crucially, the learning environment is also driven by what is actually taught in schools (the curriculum), how it is taught (pedagogy) and the relationship between them. By involving students in the process of design and development, Joinedupdesignforschools aims to encourage learning which leads to higher motivation, new skills, and 'ownership' of the outcomes by students and teachers alike.

2 Context
The way we live, work and learn is changing…

Across all sectors, organisations are under increasing pressure to adapt to change in their external environment. The same is true of schools. This pressure for change is one driver of government's efforts to find more resources and effective organisational methods to support the attainment of schools and students. A review of the main areas of change helps to show why design, creativity and team-based learning are so centrally relevant to the challenge of reshaping education.

The knowledge economy and creative industries
One well-documented shift is the emergence of a knowledge-based economy.[2] This long-term phenomenon refers to the central importance of know-how and innovation to commercial success and social prosperity, in comparison with more traditional resources such as physical assets, raw materials and financial capital. Organisational performance relies more and more on 'intangibles' such as the intellectual capital of the workforce, organisational systems and brands. The growing importance of such assets has been paralleled by the growth of 'creative industries'. At a time when many organisations in the UK were struggling to adapt to this new economic environment, the creative industries seemed to be flourishing, generating annual revenue of £60 billion and employing up to a million people. According to Design Council figures, almost £27 billion was spent by UK business on design in 2000.

Perhaps more significantly, these industries have been growing at twice the speed of the rest of the economy. The creative and design industries also often employ innovative

and original working practices and offer some important organisational lessons that can be applied more widely.

Joinedupdesignforschools starts from the assumption that the current wealth of design talent in the UK offers an educational opportunity that is currently being missed. The project is partly a demonstration of how, in practice, this opportunity can be grasped.

Grasping the intangible
Much of the growth of the design and creative industries has been due to increased awareness of the importance of their contribution to higher productivity and quality of life in other areas. Better designed environments and communications have an impact on our everyday lives at work, at home and in public spaces. In terms of the built environment, for instance, environmental psychologists have found that factors such as acoustics, air quality,[3] light levels,[4] noise levels[5] and temperature all have a measurable effect on individual performance by varying individuals' levels of attention and alertness, concentration and effectiveness. The impact of design extends beyond environmental improvements to increase productivity. It is also claimed by most UK businesses to have a direct impact on their growth, innovation, strategic planning and organisational structures.[6]

The impact of environment and communications on behaviour and performance is taken increasingly seriously by business, where good design is more and more likely to be seen as an investment in productivity, as well as in communicating brand values. Advertising and architecture, the traditional mainstays of business marketing, are being joined by new media, furniture design, and internal branding as creative disciplines that can contribute to competitiveness for firms. The power of intangibles has become tangible.

New skills for the new economy
These broad changes are also influencing the kinds of skills and abilities that are needed to thrive in the labour market.

While the details remain hotly debated, a broad consensus is forming that young people should leave education capable of navigating their way through an increasingly fluid working environment.[7] Variously labelled 'key', 'creative'[8] and 'enterprise'[9] skills, these generic or 'higher order skills' include abilities such as progressive problem solving, information management, self-organisation, interdisciplinary knowledge, interpersonal skills (teamworking), reflection and evaluation, the ability to manage risk and learn from failure, and learning how to learn.[10]

While more and more people have tried to define these abilities on paper, the school system as a whole has struggled to find effective ways of integrating them into the educational routine. As we will see later, these are the exactly the kinds of ability which Joinedupdesignforschools aims to develop and apply in a real world context.

Broader challenges: lifelong and organisational learning

In an economy where knowledge and its application are the primary source of productivity, the imperative to learn extends far beyond the school walls. Not only are new skills required, but the pace of change means that people have to be able to continuously update their skills, becoming 'lifelong learners', in order to adapt and respond. On a different level, organisations themselves must do the same thing.[11] By involving schools in the process of design and supporting them in developing their own briefs, the project aims to enable schools to reflect on their own performance and the practical steps that can be taken to transform their own practices and systems. Each proposal was developed in the context of the school's life and was highly relevant to its own goals and aspirations rather than a more distant policy objective. Working at the grassroots, Joinedupdesignforschools aims to demonstrate the potential contribution of small-scale interventions to the performance and autonomy of our schools.

New tools: the net works, and networks

In a growing number of sectors, networks – virtual, social and organisational – are recognised as a central means towards meeting the challenges of creativity and adaptation. Connecting people to each other and to emerging ideas across organisations, communities and fields of practice, they offer flexibility and facilitate the sharing of knowledge and experience. Information and communications technologies throw up particular challenges for schools. While they can be empowering for the individual learner, they also offer the prospect of new roles for schools and the personnel within them. The huge reserves of intellectual capital contained within and between schools, their social standing, and the fact that their buildings are currently used for only 13 per cent of the year mean that schools are theoretically well placed to become what Bentley has termed 'the hubs of diverse learning activities'.[12] Such a transformation could open up the under-utilised resources of the school to the broader community. But it could also do the reverse, by connecting the diverse resources of the wider community to the central task of educating the young.

Enlarging communities

The idea of extending the community of educators is brought out most clearly in Joinedupdesignforschools through the involvement of professional designers in the process of learning. But it also comes through in the kinds of design issues that participating schools have investigated. Building a website, for example, or examining the messages that school entrances convey to the outside world encourages awareness of the interactions between the school and wider world which are often taken for granted and underused.

While establishing new learning communities is a clear aspiration, it throws up complex design challenges. Lifelong learners aren't compelled to learn in schools, as young people currently are; they have to be motivated to learn there. While design alone cannot ensure that they will, it has an important

role in helping them along the way. For example, the transition may involve providing additional facilities for different users or overcoming the institutional and custodial appearance that disconcerts so many visitors, while part of it lies in the more complex job of negotiating between the varied and sometimes conflicting needs of users. Part of the rationale for the Joinedupdesignforschools project is precisely to show that there is this overlap in the concerns of the design and the educational communities, and that challenges facing each might be tackled by using methods of the other.

Partnership

This understanding underpins the method of the project – namely partnership. If designers have no sense of the outcomes the education system is striving to deliver, or of the social and organisational characteristics of school life, then it is difficult to see how they can design with these factors in mind. Joinedupdesignforschools seeks to address this traditional separation of perspectives through participation. Connecting designers to the people who will be directly affected by their work, the project follows in a strong tradition of community-based involvement. Involving the community, not just in discussion and consultation, but also in the original definition of exactly what the problems are that need solving, and in shaping the solutions as they develop, is a method increasingly recognised for its potential in building consensus and ownership over time, and so improving the outcome and creating legitimacy for what could otherwise be a sudden and unwelcome change.[13]

The policy front: education, education, education…

Joinedupdesignforschools is a small project that tackles big questions. Its dual nature – as both a learning process for students, and as an innovative model of partnership – makes it well placed to inform policy. Moreover, the themes and questions underlying the project are increasingly recognised as significant for public policy.

Agreement about the importance of creativity is no longer limited to the fringes of intellectual and academic life.[14] This agenda is also being taken up by employers, increasingly dissatisfied with the extent to which young recruits lack the skills to engage with the demands of work.[15] The Department for Education and Skills is increasingly embracing this agenda. Creativity is now a central plank in the government's Early Years Strategy.[16] It is also recognised as a core aim in the primary and secondary years.[17] The development of a national framework for personal, social and health education, and the proposed introduction of vocational pathways[18] all signal a shift towards more personalised learning experiences, with a strong focus on self-evaluation and wider life skills, at least in some parts of the curriculum, and towards recognising that learning takes place in many different contexts.[19] There have also been important moves to counter the professional isolation of teaching – opening teaching up to a wider range of influences and encouraging higher levels of continuing professional development.[20] Central government has also invested heavily in information and communications technology, and moved towards creating new frameworks for enterprise learning and career development.

Several billion pounds has been earmarked for school buildings over the next three years. However, significant questions remain unanswered about how best to spend that money. While there is a major backlog of repairs and physical improvements still to be addressed in schools, there is still no clear view of how physical redesign and reshaping can create environments which meet the needs of twenty first century learners. The Private Finance Initiative and other programmes to improve the physical infrastructure of schools and other public services lack a clear design rationale. Joinedupdesignforschools aims to provide a model of how the value of this investment could be maximised.

3 Rationale
Why now?

Despite the recognition that design has a real impact on organisational performance, the situation in schools is in predictably sharp contrast to that of the business world. In many other organisations, the introduction of new technologies and the evolution of new patterns of organisation characterised by teamwork and continuous learning have been accompanied by a concomitant, ongoing redesign of their environments. But the great bulk of our current schools were designed either in the late nineteenth century by the Victorians, or in the post war years of 1945–75. Many Victorian schools lack essential features and are in need of major and costly repair. Those built in the postwar era have been severely criticised 'for failing to function effectively – not only as environments for teaching and learning, but also in terms of other considerations such as circulation, administration, maintenance and running costs'.[21] When this is combined with the significant reductions in government funding for school buildings throughout the 1980s and 1990s we are left in a situation today in which, by the DfES's own admission, half our current school stock needs to be replaced, in the face of a major threat to health and safety, at an estimated cost of £33 billion.[22] Although much has changed within schools over the last two decades, and vast amounts of money are committed to improving and modernising school buildings, the basic organisational features, and the physical characteristics that go with them, have often changed very little.

The increasing expectations and demands placed on our education system put growing pressure on its environment, methods of organization, staff and students. Schools must be able to respond to these demands in ways that fit their own needs and context – to make the most of new opportunities and find creative and effective responses to challenges as well as threats. This highly practical form of school autonomy is exactly the kind of capacity which Joinedupdesignforschools aims to enable.

Yet, despite the challenges facing schools, and the wealth of design talent in the UK, 'good design' is still often seen as an expensive luxury that the public sector cannot afford. Of the seven designers who worked with the project, not one had worked directly with schools before and hardly any could name a professional colleague or practice that had.

Maximising investment: a catalyst for change
Good design can act as a catalyst for broader changes, increasing the eventual value of an initial investment. But Joinedupdesignforschools aims to link design to educational outcomes even more directly. By involving students in the actual process of design, as 'clients', and getting them to acquire and use skills in the context of an extended team-based project with a real-world focus, the project aims to make a direct contribution to their learning – as a form of learning itself.

This model of teaching and learning is significant both as a response to the educational challenges thrown up by the changing economic environment, and in its ability to bring together very different kinds of expertise and resources, to focus on a shared problem, and build an active consensus for change.

The project is structured for minimal disruption to the school timetable and to be manageable over the course of a single term. As such, it is relatively straightforward for schools to undertake and allows the experience to be used as a catalyst for broader, more ambitious organisational change.
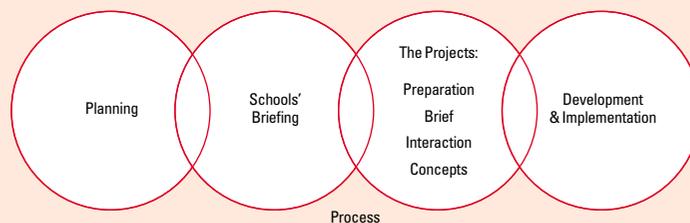
4 The Projects
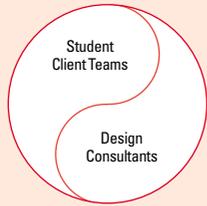
Joining up

The starting point is a simple one: schools and participants were brought together to work collaboratively on a simple brief – 'how can good design improve the quality of life in your school?' Students formed 'client' teams, putting themselves in a new position of power, responsibility and creative potential as they shaped the progress of the designers' work. For a relatively small cost, the early stages allow a perspective to be generated which focuses strongly on the *user's* experience of the school as an environment, but with the added benefit of the highest quality technical knowledge and professional design expertise.

How it works

The core of the project is its organisation around a four-stage process:

- planning
- schools' briefing
- the projects: preparation/brief/interaction/concepts
- development and implementation

Phase 1 – planning
The project was researched and planned between July and December 2000, and seven schools from different parts of the UK were invited to take part. Their headteachers were asked to select a client team of students, and a teacher to guide and support them. The teams then decided what the aim of their project would be. At the same time, the Sorrell Foundation approached a number of design consultancies from different disciplines and matched the aspirations of the client teams with the specialisms of a consultancy.
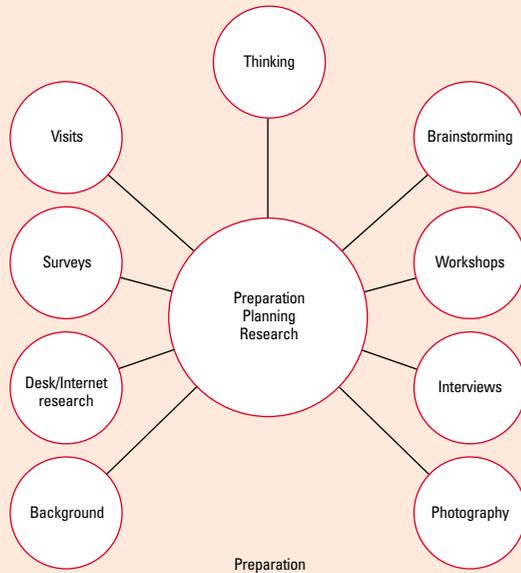
Phase 2 – schools' briefing
In January 2001, the Sorrell Foundation visited all the schools and showed each client team how to work with design agencies – explaining how to be a good client. The students were given a framework for planning, writing and producing a clear, inspiring brief, and insights into how to develop a productive partnership in a client/consultancy relationship.

Phase 3 – the projects: preparation/brief/interaction/concepts
All seven projects began in January 2001 with a period of
planning and preparation by the client teams. They carried out
desk research, conducted interviews and surveys within their
school community, took photographs, held brainstorming
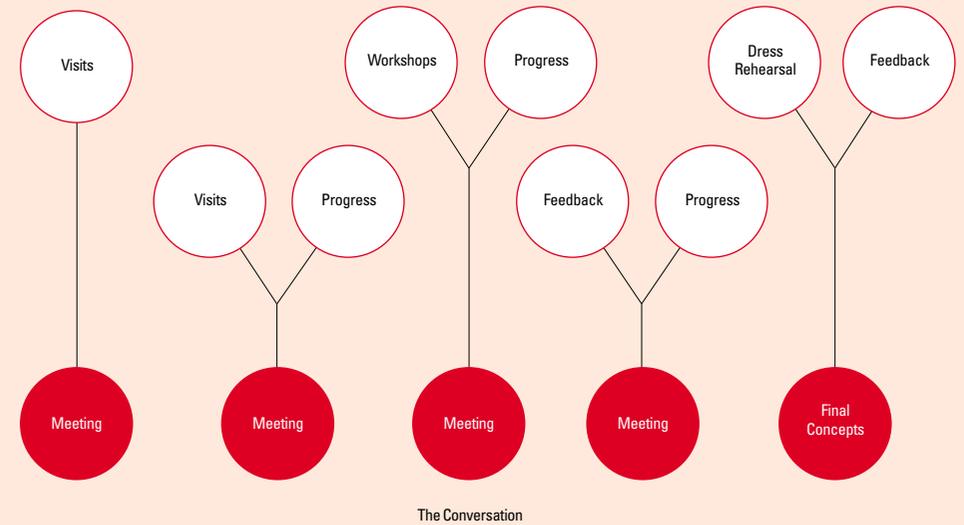sessions and workshops, and made visits to inspire their
thinking.

Thinking

Visits

Brainstorming

Surveys

Workshops

Preparation
Planning
Research

Desk/Internet
research

Interviews

Background

Photography

Preparation

As a result, each team produced a written and visual brief in
preparation for their initial meeting with their consultancy.

Who you are

The Project
and its aim

Background
School History

The Brief

Issues

Timing
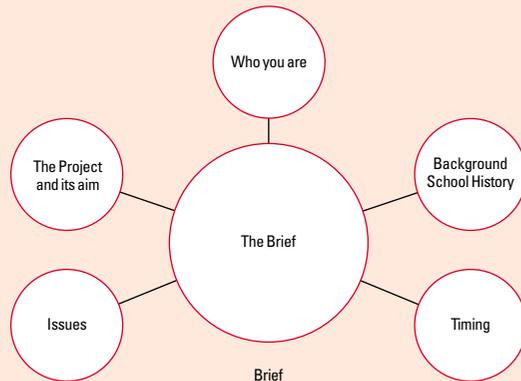
Brief

By mid-February all the students had presented briefs to
their designers. Over the next three months the designers
developed their thinking and held regular meetings with their
clients to discuss ideas and progress. The Sorrell Foundation
describes this process of interaction as 'the conversation
between the student client teams and their consultants'.
In April and May, each of the seven consultancies presented
their final concepts – proposing solutions addressing
communications, the environment, interactivity, clothing,
architecture and identity.

Visits

Workshops

Progress

Dress
Rehearsal

Feedback

Visits

Progress

Feedback

Progress

Meeting

Meeting

Meeting

Meeting

Final
Concepts

The Conversation

Phase 4 – development and implementation
Some of the projects are already being developed and
implemented, others will require funding to turn the design
solutions into reality (see 'Measuring the impact', updates of
the seven projects in the pilot programme on page 41).

The seven Joined up design for schools projects carried out
in the pilot programme are described on the following pages.

Aldercar School, Nottingham, and Paul Smith
The brief: 'The thinking behind what to wear at school'

Aldercar is a mixed comprehensive secondary school in the coal-mining heart of southeast Derbyshire. It opened in 1951 and now has 570 pupils.

The school selected a client team of six girls and two boys, aged 14–15, based on their personal enthusiasm and initiative.

Paul Smith, the leading international fashion designer, designs collections for men and women and has over 300 shops in London, Paris, Milan, New York and the Far East.

The Aldercar client team wanted 'to base our project on designing a summer uniform. We decided this as our normal uniform is black and absorbs the heat during the summer months. It will also bring our school into the twenty first century.'

Antonia Allen (14) client: 'We told Paul, for example that we didn't want the school tie for the girls. They're too masculine and an open shirt is more comfortable. He listened! The whole thing made me feel proud to be involved. Proud to meet and work with all these professional people.'

Adam Grice (15) client: 'Paul Smith was as nervous as us before we met! But it turned into a brilliant experience going to his place in London. For me it was all about confidence. Talking to people. Before I'd be shy even talking to grown-ups. Now I can chat away to them. I feel a lot more involved now. I've got a lot more input than I had before. I'm making changes to the school. Everyone feels more proud.'

The concept: 'A uniform that lets you be individual'

Paul Smith's designs give pupils long and short sleeved cotton shirts trimmed with grosgrain tape, with stripes in the school colours, and zip-up hooded top in loop black jersey. The students are free to wear what they want to match.

Paul Smith, designer: 'I was very excited to be involved in this project. One of our strengths in the UK is design

and training designers. So it was very interesting for once to be involved at the beginning of the process, in which the possibilities out there seem endless. At my first meeting with students the situation was a bit strange and new to all of us, but we soon hit it off and got some great results out of the project.'

Chris Bancroft, deputy headteacher: 'At the start I didn't know what to expect. But what's been really good is doing design in a real-life situation. This has been a fantastic opening – brilliant for the kids, great for their self-confidence.
My biggest regret is that I couldn't involve the whole year. If every kid could have this experience it would open their eyes so much.'

Tony Cooper, headteacher: 'This isn't a gimmick. These are practical designs that the kids contributed to and love. They presented them to the board of governors and the board caught their enthusiasm. Now we've given them to the school suppliers to come up with the finished article.'

Fortismere School, North London, and Interbrand

The brief: 'The thinking behind our identity'

Fortismere School is a neighbourhood community school with Technology status within Haringey serving the Muswell Hill area in North London. It is a mixed comprehensive with 1,550 pupils aged 11–18 and 140 staff. In 2001 the school received a school achievement award for academic progress. Fortismere also acts as the host school for the secondary department of the Blanche Nevile School for the Deaf.

The school selected a team of nine girls and three boys aged 12–13. The teachers created a detailed application form – 70 pupils applied and 12 were chosen on the strength and creativity of their answers.

Interbrand is part of the Interbrand Group, the world's leading branding consultancy, with 26 offices worldwide. Founded in 1974, its services and people are dedicated to creating, developing and managing their clients' brands through strategic consultancy, research and design development.

The Fortismere client team wanted 'to unite the school as a whole so that students and staff have a sense of belonging to one school . . . and present an idea that will inspire students and staff to respect their environment more and celebrate the feeling of pride that the majority have in the school'.

Megan Cowles (13) client: 'The school has two separate wings, so it's not very united. We wanted to create more respect from the students for the school. We went to the library and looked up the history of the school – and we asked students and teachers what they wanted to change. And then we prepared a brief based on that. Interbrand were very friendly and really listened to our ideas. They're trying to make the school feel more like a community. One idea is using the same colours and labelling in both wings, and making the walkway between the wings more fun.'

Lily Power (13) client: 'We told Interbrand we didn't like the school homework diaries. So they designed new ones which were simpler and easier to write in. You can change the cover to different colours just like a mobile phone. They were learning from us what students are like and how different we all are. We learned from them about designing. I really loved the typeface they made for the school. It looks like it's been made with a stencil. The idea is that the school is the stencil and the children and the teachers are the colours that fill it.'

The concept: 'Learning on the hill'

Interbrand developed a brand identity that unifies Fortismere School and celebrates all aspects of school life. Using the school's hillside position as a tagline, Interbrand emphasises community over school. For example the final concepts talk about 'Technology on the hill' or 'English on the hill'. Interbrand proposes a redesign of the long walkways between the school buildings; welcome packs for new pupils; electric badges to pin on school bags; T-shirt designs; stationery; signage; and a poster campaign which highlights students' aspirations for the future.

Marksteen Adamson, designer: 'Their brief was quite a surprise. To be honest, it was better than what we get from some of our clients. The energy and passion was astonishing. And they articulated very well what they wanted. Our brief was really to give the school a heart, emotional contact.'

Andy Gower, teacher: 'Instead of students having to produce all the work – the designers did. We were the clients. It was a complete reversal. In a way we sat back and took on this great opportunity to see professionals turn something around.'

Andrew Nixon, headteacher: 'The involvement of young people in the development of their own institutions by working with leading external companies is a very healthy model – which has been borne out by our wholly positive experience. The whole package could bring lasting benefits. Joinedupdesignforschools should be developed throughout the school system.'

Monk Seaton Community High School, Newcastle, and
Fletcher Priest Architects
The brief: 'The thinking behind the classroom of the future'

Monk Seaton Community High School is a purpose-built
comprehensive secondary school opened in 1973. The school
is situated on the coast approximately ten miles from
Newcastle-upon-Tyne. The school is fully comprehensive
(13–18) with 900 pupils. Two of the school's recent Ofsted
reports have criticised the building.

Monk Seaton selected a client team of five girls aged
between 16 and 17, based on the initiative they had shown
in a previous project to create their own common room.

Fletcher Priest is a group of architects and designers
working from offices in London and Cologne. Founded in
1979, they work on a wide variety of projects in both the
private and public sectors.

The Monk Seaton client team explained that 'the English
department was in need of a makeover. We want to improve
the quality of air and have lots of natural light. We would like
bold, bright colours, adjustable modern furniture and flexible
spaces to work in with plenty of storage.'

Jessica Milner (17) client: 'This was really good fun. Seeing
all of their ideas presented to us – which were a development
of our ideas. It was a real eye-opener. We saw things we hadn't
seen before, things which we had never thought of. It was a
privilege to be involved – we felt proud. I learnt to be more
open-minded and to go for it. We learnt to be a bit more
free thinking.'

Gemma Dowse (17) client: 'I expected it all to be technical
but it's been such fun. It makes me feel good to see my ideas
taken up. I thought they'd be ignored. But quite the opposite.
We figured classrooms of the future should be bigger, with
better ventilation and light. So finally we all came up with
extending the classrooms with exterior blocks, which had
funny windows into the roof. The most exciting moment was
the final presentation – when we saw our ideas coming back in

professional form. We're not given any power at all as students.
We don't really have a say. To be so involved and be so
important! We've done a lot more than I thought we could.'

The concept: 'Circulinear space'

Fletcher Priest's concept provided lots of daylight and fresh air
as well as offering extra circulinear spaces attached to standard
rectangular classrooms.

Keith Priest, architect: 'I was deeply impressed. . . It was a
very mature response – I was expecting things like 'we want
Coca Cola on tap' but their brief was all about light, space,
environment, even acoustic separation. Very profound. They
understood thoroughly what affected their performance in
class and that of their teachers. We had a very mature
discussion and their creative input was great too. I think they
gained a lot from being the client, rather than trying to be the
designers. There's no doubt that school students should be
involved in a wide range of decisions about their school – they
can certainly contribute.'

Katherine Furness, teacher: 'I was a bit cynical, I didn't
think it would work so well. But it's been brilliant for the
students and for me. Getting the chance to work with outside
agencies has been an educational experience for everyone.
We're hoping to get everything implemented.'

Dr Paul Kelly, headteacher: 'I was keen to find a solution
to the rectangular shoebox learning environments that most
schools have. We couldn't build a fantastic new school, but
we certainly felt it was time to move on from factory school
design. We needed a new approach. The real consumers of
education are the students – so we must trust them and let
them have the vision, let them raise the problems they see as
central. This offers a way forward to change schools up and
down the country – to change learning environments.
That's really exciting.'

The brief: ' The thinking behind telling the school's story'

Mount St Mary's High School is a mixed inner-city comprehensive secondary school with 900 pupils. Founded in 1896, it is the oldest Catholic high school in Leeds.

The school selected a client team of five boys and eight girls, aged 13–15. They were selected on their ability in communication and design.

Elmwood is a brand identity business based in Leeds. The Elmwood team of strategists, designers and writers work across multiple channels to create experiences that astound senses, strike hearts and awaken minds.

The Mount St Mary's client team wanted 'to communicate with the outside world… to give forthcoming pupils the low-down on the school… We want to let people know the work our school does for other people as well as for us.'

Emma Bentley (14) client: 'It was kind of complicated because we didn't know what Elmwood were expecting. They were more relaxed and laid-back than we thought they'd be. We liked putting together the brief and the update reports. The things we had put down on paper actually worked! It made us feel proud.'

Lianne Dodgson (13) client: 'I liked the way that we got to tell them what we wanted. We usually get told what to do and what to write. It was strange telling adults what to do instead of them telling us. It made me feel older, and gave me self-confidence to speak like an adult to adults. It's the first time in my school experience that this has happened.'

The concept: 'An interactive website'

Elmwood's concept is a web design that gives information about the school from the pupils' perspective. The site is animated and the cartoon drawings are based on the pupils, using their voices to tell you things about the school and their local community.

Richard Palmer, designer: 'It was an unusual experience – and didn't really work until we learned to tailor our communications to kids. They were bright but initially reticent. We learnt that big, formal meetings can be intimidating to younger students. The trick was to design tools to help the kids feed back to us. We gave them a physical kit of parts that worked to involve them in our mutual search for an answer. Soon they were throwing sheets down on the floor and coming up with new ideas – and we began to have fun.'

Lindsey Martin, teacher: 'My main concern was whether the team would gel. We used this project to advance some of our gifted and talented pupils, so I picked a team of kids of different ages who didn't really know each other. Frankly, it was difficult at first, and they were afraid to speak. Now they're organising their own meetings and they don't need me!'

Bernadette King, headteacher: 'The project has given a fantastic opportunity to redefine communications between home and school. Thanks to Joinedupdesign we will have a lively, interactive and informative website that properly equips our communication system for the twenty-first century. The whole school community will benefit from the project. The students directly involved in the initiative enjoyed the experience of working with professional designers. Above all the project enabled the students to really work together and develop team building and interpersonal skills.'

The things we had put down on paper actually worked! It made us feel proud
Emma Bentley (14), Client

It made me feel older, and gave me self-confidence to speak like an adult to adults. It's the first time in my school experience that this has happened
Lianne Dodgson (13), Client

We learnt that big, formal meetings can be intimidating to younger students. The trick was to design tools to help the kids feed back to us.
Richard Palmer, Designer

Frankly, it was difficult at first, and they were afraid to speak. Now they're organising their own meetings and they don't need me
Lindsey Martin, Teacher

The project has given a fantastic opportunity to redefine communications between home and school. The whole school community will benefit from the project.
Bernadette King, Headteacher

Quarry Brae Primary School, Glasgow, and Graven Images
The brief: 'The thinking behind the space above us'

Quarry Brae Primary School was built in 1903 and has been serving the children of the east-end of Glasgow since then. There are 390 pupils in the primary and 50 in the school's nursery class. The community is very involved in the school, providing help with the curriculum, education outings, classroom activities and fundraising.

The school selected a client team of three boys and four girls aged 11–12, based on their ability in art and design as well as their personal enthusiasm and initiative.

Graven Images is a cross-disciplinary design consultancy based in Glasgow and founded in 1996 by architect Ross Hunter and graphic designer Janice Kirkpatrick. They work across technical specialisms: architecture, interior and graphic design; and in collaboration with artists, musicians, filmmakers and academics.

The Quarry Brae client team wanted to 'create a new type of learning space within a classroom setting. This will create more working area in the school where space is at a premium.'

Mark Anderson (11) client: 'I enjoyed it because we had to think of our own ideas. I really enjoyed working with the designers. It was a lot of hard work – just working as a group. People were thinking of different things and so it was hard to get agreement sometimes. It made me feel good because it was all our own ideas. I will be proud to see it happen – my parents are proud. It makes me like the school more.'

Claire Kelly (11) client: 'It was fun to give our own ideas and design the work. We all wanted a treehouse. First we thought of another floor with a spiral staircase, but we decided we didn't want it as it isn't as much fun as a treehouse.'

The concept: 'A treehouse for the classroom'

Graven Images designed a treehouse for the classroom, constructed around a central timber 'trunk' with an integral spiral staircase leading up to a platform with a slatted timber canopy overhead. The trunk is covered with a padded material, printed with a bark pattern, making it comfortable to touch or lean against. The platform walls have interchangeable panels that can be decorated and illuminated, and there is a second, quiet study area under the platform.

Janice Kirkpatrick, designer: 'I thought this was a great idea – asking children to imagine a different kind of life in which they are in control. For me that's the most important aspect – asking them to behave in a way that's contrary to the traditional curriculum. Some of the children were a little nervous of us, so we used email to encourage them to speak, if they couldn't face-to-face. Then they became more confident. They had pretty strong ideas of what they wanted. Some were really great – especially the treehouse idea. We might never have come up with that solution without them.'

Fiona Ferguson, headteacher: 'I've always had a commitment to art and design in school and worked on a number of team projects. I enjoy it very much – but I've never done anything quite at this level. It's great for the children to meet such excellence – it motivates their learning. If you feel you've got ownership it really helps. The other kids are pleased for their colleagues – happy it was their school who did it – they own it as well.'

St George's School, West London, and Ben Kelly Design
The brief: 'The thinking behind school dinners'

St George's Catholic School was built in 1956 and has developed into a thriving inner-city comprehensive secondary school in West London. The school comprises 550 students and 44 staff. It was removed from 'Special Measures' in March 2001 and is moving forward confidently.

The school selected a client team of seven boys and eight girls aged 14–15 to be representative of the school.

Ben Kelly Design has twenty years' experience of award-winning, innovative work, leading the field in many areas of interior design. The multicultural design team brings forward-looking design to an ever broader audience.

St George's client team wanted 'to see a complete transformation of the hall, so that it is appealing to students, teachers and visitors of the school. Our main hope for the project is to make going to lunch a pleasurable and enjoyable experience.'

Sandra Nunes (15) client: 'Lunch was like being in a factory and being pushed towards your food. So we studied the problem, wrote some questionnaires aimed at different age groups in the school, and broke into small groups to look at what they had said. It was difficult at first to get everything back together, but we got the hang of it and wrote the brief. It was a great project – it felt like school was actually putting your ideas forward.'

Elias Assouli (14) client: 'The designers are really up-front people. They took our ideas and improved them in many ways. Currently we queue outside in the rain for lunch. Now we're going to wait in a cool glass room between the lunch hall and the main building, which can also be used for classes and drama. I thought this project was great, especially telling everybody "I'm helping to design a new lunch hall for you lot."'

The concept: 'Flexible space for the heart of the school'

Ben Kelly Design's final concepts transform the existing school hall to give it more space, daylight and colour. It changes the flow to speed the queuing at lunchtime and creates a new double height, top-lit foyer space connected to and linking the existing hall. The project has also developed a concept for unique lightweight dining tables and seats that can be easily lifted and stored flat against the wall.

Ben Kelly, designer: 'The brief was very good – they did better than some of our clients. At first they seemed nervous about what was and wasn't possible, but the process has been fantastic. It's been like a veil has been taken away. We went for the max and that's an important thing to do.'

Tracy O'Leary, teacher: 'The project promised great fun. The students' confidence level has increased as well as their willingness to participate and put themselves out. That's rare for this age group. They've taken complete charge of the project and learnt a whole host of social skills. It's been an invaluable experience.'

Lady Marie Stubbs, headteacher: 'The Sorrell project reminds me of a famous beer – it's reached parts of the school other projects, even teachers, just cannot reach. It's contributed "joined up" thinking for students. It's enabled them to see the purpose of teamwork and to become confident that their ideas will be taken seriously. They feel they can make a major contribution to school life. This has been a fantastic project.'

Swanlea School, East London, and Deepend
The brief: 'The thinking behind creating an interactive game for pupils and teachers'

Swanlea School is a mixed inner-city comprehensive secondary school in Whitechapel, East London. It opened in 1992 and has 1,050 students reflecting the surrounding vibrant multicultural community – ranging from Afro-Caribbean to Turkish, but predominately Bangladeshi. Many students are learning in their second language.

The school selected a client team of eight girls and six boys aged 12–14 who were identified as gifted and talented in design and technology.

Simon Waterfall, then of digital communication consultancy Deepend, is an award-winning designer with expertise in strategic brand planning, web design and development, graphic design and illustration, multimedia, games, interactive TV and emerging media.

The Swanlea client team wanted to 'look for better ways to communicate . . . We want to tell our story in a way that everyone can understand . . . We want others to have fun finding out about us.'

Sateha Kahn (13) client: 'It was fun to work with [Simon]. We had to brainstorm and get ideas together. We came up with a game that was about completing tasks and finding objects for the teachers, and answering questions.'

Hasanul Hoque (13) client: 'When Simon from Deepend arrived to meet us for the first time he told us that working should be fun. He'd just come from Canada, he had a big box with him which had a big hunk of ice in it. He said it was a souvenir to show us that you can have a lot of fun wherever you go working in the world. He said that everything should be fun and then people will get into it. Like the game which aims to help you learn a bit more and have fun at the same time.'

The concept: 'A game based on school life'

Skoolrush is a web-based game designed to communicate the life and energy of Swanlea in a way that any culture or age could understand, through the language of play. Each player chooses their own character, an image 36 pixels high based on photographs of the pupils and their headteacher. They then compete to win by moving around the virtual school, completing missions set by the teachers and answering questions based on their curricular studies.

Simon Waterfall, designer: 'They made it harder for us in some ways because they were both client and audience. It was both rewarding and a challenge. The game was ultimately their idea – it was the language they chose to communicate their message. The game was one of the best things we've ever done – it's gonna be big. It was a labour of love and well worth it.'

Gary Pennick, teacher: 'We looked at the possibility of doing a website for the school – so people could learn about it and communicate with it. But the result of our group brainstorming was the online game, which incorporates everything we want. Everybody learnt a lot – especially how to have fun at work.'

Linda Austin, headteacher: 'This was a wonderful opportunity for our youngsters. The game itself is outstanding and the children's ideas have been seminal in the game itself. I was incredibly impressed by their understanding of the games and the web. This was a wonderful opportunity to practise those skills. I wish we could have more space in the curriculum for projects like this.'

Interaction

Though each project focused on a different branch of design from architecture to new media, they all looked at the *interaction between people and design*, at the influence of design on the people who work and learn in specific environments. As one designer put it, the project offered an opportunity to '*explain and explore how design touches their* [the schools'] lives'. On the one hand, the designers brought a more general knowledge of the impact of design on people and a technical knowledge of how to create certain effects, such as the play of natural light in a given space. On the other hand, the students and teachers brought a specialist knowledge of their school to the project, from its layout and how the spaces within it are used, to the rhythms of the day and the school's values, as well as an intuitive grasp of how these factors affect them all. At Swanlea School, for instance, while the designers may have known how to build a website, only the students could provide them with the information they needed to accurately devise the graphics for the game that made it distinctively about Swanlea, from the floor plan to the details of the headscarves that many of the students wear.

Measuring the impact

The overall impact of the process can only be evaluated in the long run. However, the short-term impact and relevance of the work was confirmed by the research we carried out in each school. It is clear that design is felt by both students and teachers to have a very strong influence on the overall quality of life in their schools. The range of factors felt to be influenced was enormous, from the surface appearance of the school to perceptions of it among parents and visitors, the quality of relationships within school and how welcome and comfortable people feel there. By increasing levels of morale and motivation, all of these factors were felt to have a discernible impact on the quality of work done, and to be further related to influences such as noise or anti-social behaviour.

At St George's School, for example, the existing design of the dinner hall resulted in long queues, often in the rain. The results of this and the congested entrance way were palpable. As one student put it: 'sometimes students get bored and they act stupid, which may result in one or more people getting hurt.' This in turn led to further problems so that 'when the hall gets really full and unmanageable the kitchen staff have to pull the shutters down to prevent any accidents from occurring', and hence there were even longer queues.

While some of the problems at St George's had to do with the design of the building, these were exacerbated by organisational problems. The often misleading menu meant that when students eventually got to the front of the queue, they 'take a long time to decide what else to eat, which makes the queue outside slower'. The location of the disposal area meant that food would splash on to the walls and curtains, while the use and location of the unreliable cash tills slowed things down even further and encouraged people to avoid paying. Queuing in the rain for half an hour and then having nowhere to sit on a daily basis clearly has an impact on the quality of life of students and staff.

These quality of life issues come through just as strongly in the other projects. It is hard to underestimate the discomfort of being stuck in a bulky uniform throughout the hot summer months or to fathom the rationale behind it all. Yet this was exactly the situation at Aldercar School in Nottingham. Working with Sue Copland and Paul Smith they developed a new summer uniform. The students there are particularly

pleased with their new school 'ties'. Gone are the tight knots around their necks, so uncomfortable in the heat. They have been replaced by stripes of the school colours stitched on to collars and down the sides of shirts 'so it still symbolises what school we go to.' The quality of life was similarly improved at Monk Seaton School in Newcastle, where the team developed a way to add space on to existing structures. They replaced the harsh and depressing artificial light with more natural light, built in flexible walls to maximise flexible usage, and developed a new system of lockers so that students would no longer have to carry their books and equipment around all day. This will reduce the temptation of not bothering to bring them at all.

Each of the projects, in a different way, showed the potential for individual schools to create innovations that could have much wider application in policy and in the practice of other schools. The model is highly contextualised – the design brief and ownership of the final concepts are unique to the specific school. But the ideas generated in the process, such as treehouses in classrooms and shirt borders replacing ties, have much wider potential.

One of the issues raised by the pilot projects was the challenge of securing resources for implementation. Although the costs of implementation vary greatly according to the scale of each project, the full impact of the process depends on the practical solution being integrated into the life and organisational routine of each school. This is an approach to problem solving in which each school works with qualified experts to identify solutions which draw on the best wider knowledge but are applied to unique circumstances, in the process generating motivation, confidence and renewed capacity to act in innovative ways. It stands in contrast to the usual approach to education policy-making, in which a general objective from central government is then converted into specific performance targets for each school, along with general guidance about how the target should be achieved. Whether the guidance is over building regulations and space

standards, curriculum coverage or behaviour management, the model tends to be the same. It is certainly open to question whether the growth of this approach represents the best way for schools to make use of the knowledge and resources within and around them, or whether it does anything to underpin a sense of organisational autonomy and creativity. The issue of whether the process-led, Joinedupdesign approach could point the way towards a different perspective on disseminating good practice and encouraging innovation is explored further in chapter 8.

Updates of the seven projects in the pilot programme

Aldercar The client team presented the concepts for the new uniform to their board of governors who agreed to implement the approach. Prototypes have been developed and the first items of the new uniform will come on stream in January 2002.

Fortismere The board of governors has agreed the concepts for the new identity and a client implementation team has been set up to plan and oversee its application.

Monkseaton Work continues in preparation for a bid to fund the development of the new English block. The project would be treated as a prototype that, if successful, could be used in other school buildings of a similar type.

Mount St Mary's The website concept has been developed further by Elmwood which is preparing it for handover to Mount St Mary's in a form that can be managed and regularly updated by the students.

Quarry Brae Discussions and planning are in progress to seek funding to develop a prototype in collaboration with a local tree house manufacturer.

St Georges The incoming head teacher is very interested in taking the plans forward, and shall be preparing to make a bid for funding.

Swanlea Skoolrush has now been fully developed and is live on www.skoolrush.com. It is popular with students and adults and has been widely publicised by the school to the local community, parents and local primary schools.

6   Outcomes

Joinedupdesignforschools has produced tangible improvements in the quality of life of the individual schools, in ways which also generate positive new forms of learning among students and teachers. Beyond the practical proposals and design solutions developed through the project, the outcomes have been diverse:

- models of partnership and collaboration which open access to the skills and expertise of a dynamic, newly mature industrial sector

- active participation by the school community in defining its needs and goals, creating a foundation for sustained cultural change

- professional development for teaching staff (and for designers) through access to an alternative working culture

and, perhaps most importantly:

- unique student learning in a real-world context, out-of-school learning, and enterprise and key skill development

- increased school pride and belief leading to a stronger sense of motivation, empowerment and autonomy for the individuals and organisations involved.

Collaboration and pride of ownership

Collaborative working is the basic theme underpinning the Joinedupdesignforschools approach. Students, teachers and designers are collectively engaged in identifying and articulating the design needs of the school, discussing the possibilities and generating real, workable proposals. Engaging the students in authentic inquiry in this way has increased motivation and self-esteem, and supported the development of a range of skills. Most significant, however, is the extent to which *the process* of developing the brief and contributing to the character of the final design gave students a sense of ownership.

The knowledge that real designers had to take the students and their school's problems seriously was a source of motivation. One student wanted to participate precisely because 'it would be really interesting to see what they would come up with and see how they would tackle our ideas and put them into real life.' When the students were asked what the best thing about working with the designer was, 67 per cent said it was either that they were listened to, or that their ideas were taken seriously. It was also felt to be one of the main features distinguishing project work from normal schoolwork. As one student put it when asked about the difference, 'You get to voice your ideas and people listen.' This sense of respect and pride was picked up by both the designers and the teachers, most of whom felt that raising the students' self-esteem was one of the three most important contributions of the project.

The students were also particularly conscious of the novelty of helping to redesign an aspect of their school. They knew that this was not how the procurement process normally worked. As one student put it, 'it would be good to make improvements to the school as the students would like it to be rather than have a design group decide.'

The inclusive nature of the process also extended in smaller ways to other people within the school community. Participating students were encouraged to involve others. In many cases the students didn't need any prompting in

this direction, using interviews, surveys and questionnaires on their own initiative. One striking feature of the project was the extent to which students saw themselves as representatives or delegates, answerable to other members of the school community. In most cases the students were very quick to grasp the relevance and impact of what they were proposing in relation to other members of the school community and the consequent need to canvass them for their ideas and opinions. At Aldercar the client design team used the school assembly to let everyone know what they were doing, carried out extensive questionnaire work on colour schemes and preferred styles and held open sessions at lunchtimes so that people could catch up on what was happening and add their thoughts.

The students were also conscious of the need to learn from others. At St George's School, for instance, the students realised that just as they could give the designers special insights into the dynamics of the dinner queue and the chaos that ensues when 400 people try to get food at the same time, so the people actually serving the food would have a greater knowledge of the problems with the way the serving area was laid out or with the till system. The team decided to hold interviews with the kitchen staff, questioning them about the problems with the current system from their perspective and about the kinds of changes they would like to see. The students also asked them whether they would be happy with some of the changes that the students themselves wanted to see, such as improving the variety of food available, which would make their job more difficult in some ways. Their reaction – 'It would be hard but we could cope' – shows the power of consultation to build consensus around what might otherwise have been controversial change. It is also reflects the spirit of the project at St George's, whose aim as one student put it was 'to see that everything is changed completely and everyone will agree on it'. Or, as one student at Glasgow put it when asked about the best thing about the project, 'The ideas have been worked out fairly so we all got something we wanted.'

At Newcastle, the team's decision to focus on the English department was made for the explicit reason that 'improvements to this area of the school would benefit the majority of students as English is a compulsory subject – and the changes developed in this area can be replicated in other areas.' At Nottingham the students questioned some staff about the possibility of and degree of support for a staff uniform, while at Fortismere many different people, from other students to caretakers and parents, were asked how they saw the current image of the school and its good and bad points. Indeed, in order to be selected in the first place, the students had to say how they would improve the school environment, and say specifically how these changes would benefit other students and staff.

The focus of Joinedupdesignforschools on including and consulting a diverse range of people is in sharp contrast to the contemporary model of school design. Despite the fact that the students and staff within schools will be the first to be affected by any changes in the school environment, they are largely excluded from this process. Under the current arrangements the local education authority is responsible for planning, commissioning and overseeing development and renovation within schools. At the very most, school governors and the school's senior management team can expect to be consulted at various stages of this process. Designer involvement in school development is limited almost exclusively to architects, the great majority of whom (some 91 per cent) work in private practices and are selected via a process of competitive tendering.

According to one of the designers, the current process of procurement is the overwhelming obstacle to greater professional involvement. While the degree of consultation between the architect and the school community varies depending on the nature of the project and the approach of the architect and LEA, it is rare for architects to consult with students. Whatever the origin and intention of these factors, their net result, together with the current regulatory and

funding framework, is to minimise both the depth and the breadth of consultation and to cut the process of design off from the people who will ultimately be most affected by it. Many of the designers involved in the project also pointed out that collaboration and user consultation are often not heavily emphasised in their own professional training and practice.

Beyond the classroom

The project also opens up the school as an institution, by challenging the dominant model of instruction, and by opening school development to a wider community of stakeholders. Students have consulted widely on their work, illustrating how the actions of each member of the learning community have an impact on the others. It also acts to demonstrate that specialist expertise about a common problem is distributed widely around an organisation, from designers to dinner ladies. In the process, the schools as institutions have been encouraged to analyse their learning environments and wider working practices and external relations, and learn themselves from those experiences.

Designing creativity

The other aim of the Joinedupdesignforschools project was to provide opportunities for the students and teachers involved to develop their own creativity – acquiring generic skills that they could use and apply in different contexts.

For many of the teachers and students, access to the professional knowledge and disciplines of design was the main reason to be involved in the project. Students aimed variously to 'learn about what designing a building includes' or 'to understand how a designer works'. Some wanted to 'build [their] creative ideas', had 'always wanted to be a designer' or wished 'to pursue a career in design like someone who designs adverts or a design consultant', while others just thought 'it would be useful for later life if I had a go at this.' This was perhaps most explicit at Fortismere where the students had to give their reasons for wanting to work with a design company

as part of the selection procedure. Joinedupdesignforschools seemed to them at first to be a bit like 'careers advice with a difference' – the difference being that they got to work with real designers on a real design problem and not just make tea in a designer's office for two weeks. As one student put it: 'It is a chance to see a design company at work from the beginning of an idea to its realisation.'

All the designers were conscious of the need for language to remain clear and simple, although students at Glasgow could now happily tell you intricate details about the properties of various materials they planned to use in the treehouse, or how to create the sense of being in the woods by stencilling leaf designs on to stilts. Similarly the team at Newcastle are quite comfortable talking about the design implications of introducing new technology into a classroom successfully, or the effects of natural versus artificial light, or the psychological implications of blue as opposed to yellow walls.

By the end of the project nearly all students reported being more conscious of the effects of design and more astute at identifying design faults and generating solutions. Compared to their conception at the beginning of the project, there was a real shift in the participants' perceptions of the kind of work that designers do and the expertise and the varied skills involved in 'good design'. But while the project is obviously concerned with design, it is certainly not limited to 'design'.

Joinedupdesignforschools tries to develop skills that can be used in a wide range of disciplines. As one designer put it, the value of using design as a medium is not for narrow vocational purposes, but because the design process provides a 'methodological toolkit – a framework within which to solve problems'.

In general terms, Joinedupdesignforschools offers a model of teaching and learning which is applicable to many subjects. The model aims to embed the acquisition of skills in the context of a learning process and to broaden students' understanding of how knowledge learned in school can be applied to real-world situations. The project has several key

features. These can be divided into method, outcomes and skills, although, as we shall see, there are important overlaps between these categories.

Teamwork

Working together in a group with a teacher and a design professional brings out the other important feature of the project's method – namely the innovative nature of students' relationship with their 'teachers'. In each case a teacher from the school was involved in the project, but they did not fulfil a traditional teaching role: *66 per cent of students said that the teachers' role was either different or very different from what teachers normally did.* Teachers' involvement was much more likely to consist of facilitating discussion among the students and encouraging them to generate their own ideas and thoughts, than laying down the answers. *As one student put it 'Rather than them telling us what to do, she [their teacher] asked us and we all made suggestions' and 'they didn't boss us around so much.'* In this sense the relationship was much more collaborative than the traditional teacher–learner relationship, with both partners engaged simultaneously in learning and discovery. As another student commented when asked about the difference between Joinedupdesign and their ordinary schoolwork, 'We were all one group instead of students and teachers separate. We were all one team.'

This collaboration also extended to the teams' relationship with the designers. When asked, no one said they didn't like working with the designer. While the designers, being professionally trained in this field, were not in the same position as the teachers or students, neither were they the 'gatekeepers' of knowledge. They were relatively inexperienced at working with young people and schools. Of great importance was their professional relationship with the students. The students were their clients. They set the brief, articulating the school's needs and identifying what they felt was important and needed to be done, and the designers had to respond to this. They also had to respond to the feedback the students provided, refining their proposals in the light of the students' comments and criticisms. As one student put it, 'there was a much greater equality between us and the designers rather than the usual dividing lines.'

The team's relationship with the designer has been a source of motivation, as was the nature of the project's outcomes. The teams all commented on the more *tangible and real-world focus* of their work on the project in contrast to their ordinary schoolwork. The students knew that the work they were doing would have a concrete outcome and could be expected to change the way the school looked and worked. Having a professional from outside of school helped the students to connect what they were doing and learning in the context of the project with the external world. Because the content of what was learned was so intimately bound up with the context, and applying skills and knowledge such an integral part of the process, what they learned seemed to them to be immediately relevant; this was a very powerful stimulus.

As one designer put it, the project was all about getting the students to think of themselves as drivers rather than passive passengers in the journey through school.

New skills

These features come together in the skills the teams were helped to acquire and employ through the project. The project work put a high premium on communication and interpersonal skills. This was evident to participants, all of whom consistently reported that these skills were the most needed in order to perform well. These skills took various forms and operated at a number of levels. For instance, the teams needed to communicate to the designers what they wanted, and give them clear feedback on the quality of their proposals. The teams also had to communicate with each other – agreeing what needed to be done, when, by whom and what they wanted to say to the designer – and with the rest of the school community.

The project also succeeded in fostering a wider sense of responsibility for one's own learning, something the designers identified overall as the most important skill required to do well on the project. None of the work the students did was prestructured. Rather there was a problem – as identified in the brief – to which the teams themselves had to bring their own structure, progressively developing strategies to tackle it. Each team and the individuals within it had to organise their own time, identifying their priorities and balancing the commitments of the project with other work. There were no teachers to tell the students how to divide up their tasks and responsibilities, or even to tell them what their tasks were. Students themselves had to ensure that they had 'control over the direction and progress of their work', as one teacher put it. One student commented on the extent to which the project thereby offered a much greater 'freedom to work and create ideas. The project isn't so strict in what you have to do and so it's more enjoyable.' *Indeed one crucial challenge was the extent to which teams themselves had to identify the things needing to be done, and decide how best to do them.*

The extended nature of the project meant that another crucial feature of this process was the need for the teams to evaluate their performance in an ongoing way – learning from their mistakes in order to build on them in a positive way and take the project forward again. The teams' reflection on their own work and that of the others was complemented by the designers' feedback to the teams. While there was no formal assessment, the designers could and did comment to the teams on their work. The vast majority of them were overwhelmingly impressed with the quality of the students' work, which both exceeded many of their preconceptions and often compared more than favourably with that of their usual clients. As one designer put it, 'In many ways, our clients for this project have been more organised than our normal clients.' In contrast to most formal assessment exercises, the designers' comments were contextualised and made with reference to specific aspects of the work on the project.

Moreover, as the project was ongoing, their comments were more like constructive feedback, which the students could work on and thereby improve their overall performance.

While it is difficult to generalise in terms of the overall educational value of the project, and all the participants have benefited in individual ways, several common themes emerged, particularly within the various groups. Among the students it is possible to discern two broad areas of educational benefit – namely the specific skills acquired and the attitudes and dispositions developed. The skills employed by the project have been outlined above. They echo many of those skills, called variously 'creative' and 'enterprise' skills, which we outlined in the Introduction. What is perhaps most significant about these skills is their generic nature. Although they have been acquired in the context of a 'design project', skills like problem solving and communication are clearly not limited to such a context. Rather they are what are referred to in the literature as 'transferable skills'. When the students were asked how much they thought that the skills they had to use in the project mattered for their other schoolwork, only 9 per cent thought they didn't matter very much, while the overwhelming majority thought they were very important.

Such skills are increasingly recognised as important not just in education, where they are thought to underpin many other forms of learning,[23] but also increasingly in the workplace. For instance, the shift towards more team-based forms of work and the growth of the customer-orientated service sector place a new emphasis on communication skills, while the massive increase in both the volume and accessibility of information puts a new premium on information-handling skills. The rise in more flexible forms of employment, including self-employment, means that the ability to organise one's own time and plan programmes of work around one's goals and deadlines is also increasing essential.

Such skills are also valuable in navigating through an increasingly fluid and uncertain social and civic arena, helping individuals to balance

the demands of work with other commitments and develop collective solutions to a whole series of challenges.

The kinds of skills and abilities engaged by the project are also significant, especially the extent to which it ties the acquisition of knowledge or skills to their practical application. This connection reinforces the link between genuine understanding and the ability to organise, structure and use information in solving problems.[24] The fact that all of these skills are acquired in the context of the project means that solving problems is not a separate and difficult task but rather an integral part of the learning process. This emphasis on context also applies to the assessment of the students' work.[25] Assessment occurred continuously as part of everyday project work.

Esteem and empowerment

Perhaps the most significant, if least tangible, benefit has been in terms of the attitudes and dispositions that have developed in response to various aspects of the project. For instance, the fact that 'a real grown-up', and not simply a teacher, actually took the ideas of the students seriously, and indeed that the students were expected to criticise the designer, gave the students a great sense of confidence and belief in their own capacity to generate insights and identify problems. The fact that the students had to organise their own work and take responsibility for what they did was another source of motivation and was felt to be empowering – giving them a real sense of ownership over their work and learning. Perhaps above all the project was, as the students repeatedly pointed out, '*a LOT more fun and exciting than other stuff at school*'.

The relationship between the teams and the designers has not just been a source of satisfaction to the students. It has also proved liberating for the teachers, whose role, we suggested, was much more about facilitating discussion among the students and prompting them where appropriate, than laying down all the answers. The client-based approach has given teachers experience of a radically different model of teaching and learning that they may otherwise never have encountered. The model connects teachers to external professionals and new practice and ideas, often in the very area in which they themselves trained.

7   Limitations

This chapter of the report is intended to bring together some more specific reflections on the structure of the Joinedupdesignforschools project. Based on interviews with all of the participants and other evidence, it aims to draw together several common themes that emerged from the participants' comments on the structure of the project. It aims to highlight possible ways to standardise the structure of the project in line with what the participants themselves felt had been or would be most effective.

The team

Although the make-up of the individual teams of students is obviously a very significant component contributing to the success of the various projects, no one model really emerged as overwhelmingly the best or most effective. The teams varied in age from 11 to 17 years and in size from 5 to 15 individuals, and different benefits seemed to derive from each combination. The youngest students were still at primary school, where more limited timetabling and subject requirements provided for a greater degree of flexibility. At the other end of the spectrum, the sixth-formers (year 12) involved at Newcastle had a deeper understanding of some of the issues. Students from the middle years of secondary school (years 8 and 10) had the advantage of facing both ways with respect to the rest of the school body and felt well placed to negotiate between the wishes of the younger and older members of the school.

On the whole, the project seemed to work best when the students were all drawn from the same year, with the exception of particularly committed individuals from other years. Students taken from the same year group have the advantage of already having some kind of relationship with each other, which helps them to 'bond as a group first before they have to bond with us', as one designer put it. In terms of closer relations such as friendship groups, a balance needs to be struck between the fears friends might have of criticising each other and the benefits to the project work that come from regular discussion.

In terms of the size of each of the teams, a balance needs to be struck. On the one hand there is the desire to include people, and the confidence and ideas that are generated from greater numbers; on the other hand, there are the problems of organisation and communication that come with a larger number of students, particularly for the designers, who are often unaccustomed to working directly with such large groups. Teams of around ten students proved to be a good average number.

Selecting Joinedup teams

Each of the schools was free to select students as they wished. Some schools used the initiative as part of their Gifted and Talented drive, while others were more comprehensive in their approach. Some schools randomly selected, while others hand-picked students based on previous work or experience. Two main lessons seem to have emerged from this process. The first is the importance of getting a good mix of individuals who will work well together and are all interested in the project for some special reason. The level of commitment involved in the project also needs to be made clear to the students (and teachers). Having to miss lunch breaks or stay behind after school may put some students off, while the more committed remain undeterred.

Questionnaires emerged as a particularly good way of eliciting students who were suited to the project. Fortismere,

which was massively overscribed with pupils wanting part of the client team, hit on the idea of a 'job application'. Students were asked what ideas they already had for improving the school environment; why they wanted to work with a prestigious design company, and what skills they as individuals would bring to the project. Getting students who are interested and enthusiastic was seen by the designers to be particularly important and a source of motivation, and the Fortismere approach offers a blueprint for doing this.

The lead teachers

The importance of the teachers' role in the project was apparent both to the teachers themselves and to the designers. As one designer put it, the teacher served as 'an ally in the camp, who could understand where both parties were coming from'. They were a point of contact for the design company and the students, and were responsible for the bulk of organisation – including external visits and negotiating their own and the students' timetables. It is very important that the teachers involved are aware from the beginning of the scope and nature of their role and the degree of commitment involved. Beyond their own commitment, they also had to have a particular knowledge of the school's needs. At many schools more than one teacher was involved; in some, design and technology teachers took the lead.

Leadership

Support from the school's senior management team was also a critical factor. Although the project seemed to work best at schools where the Head was not directly involved in the meetings between the students and the designers, leadership support was necessary in all cases. Teachers need time and control to oversee the project, as they were very keen to point out, and students need release from lessons.

Feedback

One of the things found to be most difficult about the project, particularly by the designers, was generating feedback on their proposals. Feedback is important to everyone. But even the most confident students were often wary of telling the professionals they had got something wrong. As one designer put it, 'they still thought we were adults and they were kids, and we were right.' Although this shyness faded as the projects went on, it is important to have mechanisms for eliciting feedback and to remove any additional obstacles to frank communication.

In so far as the teachers already have an established relationship with the students, they have a major role in this process – providing clues and prompts where needed, helping to draw things out and facilitating exchange in subtle ways. When things go more seriously wrong this process needs to become more explicit and the designers themselves need to have alternative communicative strategies as a back-up. One designer, for instance, developed a system of 'multiple choice' feedback. The aim and emphasis must, as he put it, always be on 'giving the kids tools to participate that are more immediate for them'. This may consist of things as simple as changing one's language, or explaining points with reference to things that are familiar to the students. At Swanlea, for instance, all the designer had to do to get the students to grasp the potential of a multimedia web-based communication strategy was to mention PlayStation. Visual images also often help, particularly when trying to explain something as abstract or unfamiliar as the back end of a database-driven website. Holding the meetings between the designers and the students in more creative and informal environments also seemed to help, as did external visits – helping to open up the students and engage their imagination.

There is also a need for alternative feedback channels other than face-to-face communication. The format of the meetings – intense fifteen-minute bursts of information from the designers – was unfamiliar to most of the students and often

disorientating. Often the students felt that they wanted more time to think about some of the issues that had been raised. One designer came up with the idea of getting the students to email back their reactions. This was a particularly effective method in that the students were given more time to reflect and didn't have the pressure of speaking to the designer in front of everyone else.

The designers

Some of the issues surrounding the contrasting organisational cultures of the design and the education professions have already been discussed. The only point to add is to suggest, as some participants did, that the designers are given a copy of the teachers' and students' timetable from which to work. At Swanlea the team found that an email account, set up specifically for the project and open to the students to check, helps to mitigate against any difficulties in communication and also enables the students to become more involved in the organisational aspects of the project. The designers who worked with local schools also found this to be helpful. Being more accessible meant the designers could be more flexible with time, while they also had a very concrete sense of putting something back into their local community.

Being able to communicate with the students is clearly crucial to the success of the project. Yet talking to fifteen 14 year olds is no easy task, especially when you haven't done it since you were 14. The fact that only 10 per cent of students found the designers hard to understand makes their abilities in this regard seem all the more remarkable. Although most of the designers had not worked with young people before, those who had found that it helped. The common theme to emerge from evaluation was the need to bring out the underlying process of design as clearly as possible and make it transparent.

Finally it is very important to provide a support structure for the designers – a familiar point of contact and reference. This role was filled by John and Frances Sorrell, whose drive and imagination provided both reassurance and inspiration.

This emerged as especially significant in the initial stages and in the original decision to participate. All of the designers decided to participate after they had been personally approached. Given the time and consequent financial commitment involved in the project, both to the company and the individual concerned, it is crucial that the participants feel that the project has a valuable purpose and has some body driving the agenda forward. As one designer put it: 'the value of participation for the designers depends upon the perceived value of the project outcomes.'

8   Recommendations
Joinedupdesignforschools:
Proposals to government

The Joinedupdesign project has shown that it is possible to produce tangible improvements in the quality of life for individual schools in ways that involve students and teaching staff in productive, relevant learning activities. The first stage of the project produced proposals and design concepts to a high professional design standard, yet they remained strongly 'owned' by each individual school and the Joinedup teams who established and ran them. Each proposal was relevant to the needs and goals of the school, and was developed in the context of the school's life, rather than in relation to a more general and distant policy objective.

Policy relevance
The project has the potential to have a positive impact across the school system for relatively modest expenditure; in terms of the value and leverage gained from each school-based activity, financial investment in the process itself can be highly cost-effective. The project also offers the opportunity to engage the skills and expertise of a newly mature, sizeable industry sector that could make a major contribution to the renewal of public services and public spaces over the next decade. Even more important is the way in which the project has harnessed the motivations and creative abilities of the students, and linked the goal of school improvement with powerful forms of learning and pupil participation.

Scaling the project up to an initiative of national scope requires a significant commitment from government, and should not rely on *pro bono* or deeply discounted work by design professionals. However, it also offers the potential for gaining greater leverage from existing budgets and spending, both for different aspects of the school's environment, and for learning activities relevant to the scope of the project. Areas of current policy which might be linked to a Joinedupdesignforschools initiative are as follows:

- capital modernisation
- creation of joinedupschools 'clusters'
- Information and Communication Technology and the digital curriculum
- enterprise and careers education, Education Business Partnerships
- Private Finance Initiative and capital modernisation programmes
- learning out of school hours
- the design and technology curriculum.

A national initiative
A national project would have the following essential characteristics:

- a clear identity as a government-backed programme with specific objectives
- organisational capacity for administering the programme to a high standard of competence, in ways which are supportive of the innovative working methods brought by the Joinedupdesign approach
- the capacity to support and actively facilitate proposals and project development by individual schools in the programme, in order to maximise the outcomes achieved by each school and to support schools in developing their own capacity for innovation and autonomous action
- the ability to promote effective dissemination, learning and exchange of ideas and lessons learned, both among project participants and among policy-makers

- a focus on bringing schools and designers together in collaborative relationships which cut across existing sectoral boundaries
- an opportunity to bring staff and students from different schools together to work with specialists in their area
- input, including staffing, from sectors other than government to make effective use of expertise in the professional design, business and research communities
- access to funding/resources in order to implement proposals
- ongoing links to relevant policy decision-making and evaluation strategies
- links to appropriate local and regional governance and infrastructure.

Proposed structure

The initiative should be built around a clearly identified core. This includes the *process* through which initial ideas are identified and developed to become detailed design concepts, and then resources and backing secured to make them a reality.

The initiative should *not* aim to take every design concept developed through the initial project stages to implementation, or to finance every such programme. Instead it should aim to maximise the number of schools who can initiate partnerships with designers and develop design concepts. It should then select a smaller proportion of concepts for further development, and be capable of helping to connect these detailed proposals with relevant funding sources. Such sources would vary according to the scope and scale of each school-based project. The national Joinedupdesign initiative should work on the basis that it can choose to fund a relatively small number of proposals as demonstration or innovation projects, or in cases where the positive impact of the proposal on the school in question would be particularly high.

The initiative should also carry two other practical priorities for better policy:

- to improve the effectiveness with which different policies and programmes are coordinated with respect to quality of life and design in schools
- to help develop an environment and infrastructure which supports *purposeful innovation* in schools; the kind of autonomy through which schools can identify their own goals and marshal different resources (including community and business partnerships) to achieve them. This kind of autonomy is very different from simple freedom from interference, and much closer to a capacity for coherent, flexible organisational strategy in a complex and demanding environment.

The three-stage process

The process by which funds and support are awarded follows three distinct stages:

- foundation stage; production of outline proposals
- concepts
- implementation

The number of schools affected could vary according to priority, but a commitment of £5 million plus running costs would provide for the foundation and concepts stages in over 200 schools. Implementation funding would then depend on the existence of other funds, but part of the initiative's capacity would be dedicated to supporting individual schools in levering funding in from other sources.

What kind of organisation is needed?

The national Joinedupdesignforschools programme would need strong links to central policy decision-making through the DfES's Standards and Effectiveness Unit, Innovation Unit, and Buildings and Architecture Divisions. It should also

be capable of linking to relevant design and creative industries initiatives at the DCMS.

At the same time, however, the initiative needs flexibility, dynamism and horizontal rather than hierarchical organisation; in other words, the project would benefit from operational independence and a team-based structure.

As the number of participating schools grows, the initiative will need to support the facilitation and management of a growing number of diverse, complex and localised projects and relationships. While actively facilitating and following the progress of projects in individual schools, the programme also needs the ability to cross-fertilise across wider areas and encourage knowledge and lesson sharing among different schools.

Evaluation of proposals and outcomes should take place through a transparent, interdisciplinary method, in which expertise from a number of fields is used and schools have the opportunity to refine or redevelop their proposals over time. Evaluation also needs to encompass the need for policy learning and recommendations arising from practice.

The initiative should be staffed partly by educational practitioners and design industry professionals, and partly by experts in grant awards and by policy officials. It should also link to other industry and design intermediary bodies.

Finally, there is great potential to link Joinedupdesign projects in schools with design students and higher education providers, making collaboration with school students a part of professional training for design disciplines.

This kind of initiative could take several forms. The ideal is probably an independent unit staffed by experts from government, education and the private sector and meeting public accountability requirements for auditing and transparency. This could provide the combination of flexibility and integration with other policy objectives needed for maximum impact.

A national Joinedupdesign programme could also develop the following:

- *A brokerage service*: a national database to hold information on schools and designers wishing to participate in future initiatives. By gathering information about the location, needs and skills of the various participants, including company biographies, the service would aim to match the particular needs of schools with relevant designers.

- *An online portfolio of best practice*: an electronic portfolio which could be used to store information on all the projects. This could be linked to the database. By collecting and making information available, it would enable participants – past and present – to share knowledge with each other and also with other non-participating schools, thereby spreading good practice.

Beyond joinedupdesign

Education, like all public services, needs ongoing injections not just of money, but of innovation, energy and wider public support. Joinedupdesignforschools has shown in practice how the expertise and creative disciplines of the design industry can be harnessed to improve educational outcomes. In the process, it has also shown how aspects of the learning process can be remodelled to reflect the changing contours of economy and society.

The relationships created by joinedupdesign projects and methodologies could therefore contribute to the formation of innovative clusters of expertise and networks contributing to educational innovation, and help to make each school a hub for diverse community learning activities.[26] The project indicates that expertise from other disciplines could be introduced into schools using similar techniques which enable school-based teams to work together in innovative ways. It is the process of collaborative working which would be emphasised as central to the project's objective. The challenge now is to show that government and the education sector as a whole can make the most of this wealth of potential.

Notes

1 This is meant in the sense of 'the ability to use knowledge and skills to achieve a valued outcome', and not in the purely 'artistic' sense in which it is sometimes taken. Argument outlined in Seltzer K and Bentley T, 1999, *The creative age*, Demos, London

2 Leadbeater C, 2000, *Living on thin air*, Penguin Books, London

3 Andrew J and Neuroth R, 1988, Environmentally related health hazards in schools, paper presented at annual meeting of the association of school business officials in Detroit, Michigan,

4 Peyton C, June 1999, 'Sunlight could perk up kids', The Sacramento Bee

5 Duke D, February 1998, Does it matter where our children learn? From an Invitational Meeting, Washington D.C

6 *Past and future*, 2001, Design Council Annual Review, London

7 *Entrepreneurship and the wired life*, 2000, Flores F and Gray J, Demos, London

8 Seltzer K and Bentley T, 1999, op cit

9 Horne M, 2001, *Enterprise learning*, Demos, London

10 Jupp R et al, 2001, *What learning needs*, Demos, London

11 ibid

12 Bentley T, 1998, *Learning beyond the classroom*, Demos, London

13 Jupp B, 1999, *Living together*, Demos, London

14 Hargreaves D, 2001, *Changing behaviours*, Design Council, London

15 Employers are having increasing difficulties with recruitment, with 41 per cent of current problems put down to a skills shortage amongst applicants. Employers skills survey, National Skills Taskforce, 2000, DfEE, London

16 An early years strategy detailed in *Schools: building on success*, 2001, DfES green paper, London

17 *The national curriculum*, 1999, DfEE, London

18 *Schools: achieving success*, 2001, DfES white paper, London

19 A framework for out of school hours detailed in *Schools: extending opprtunity*, 1998, DfEE green paper

20 *Teachers: meeting the challenge*, 1998, DfEE green paper, London

21 Annesley B et al, *Learning buildings*, unpublished pamphlet, School Works, London

22 Capital Investment strategy 2001-2004, DfEE 2000. See also Her Majesty's Chief Inspector of Schools, Annual Report for 1999-2000

23 Stigler and Hiebert's research on mathematical competence found that by presenting students with problems and encouraging them to devise their own procedures for solving them, it was possible to significantly raise mathematical achievement, as traditionally defined, as well as developing transferable problem solving skills. From Hargreaves D, 2001, op cit

24 Jupp R et al, 2001, op cit

25 Gardner's work on experts strongly supports the importance of context in assessment, and the influence of the presentation of assessment material in eliciting answers. 'It has been shown that experts often fail on "formal" measures of their calculating or reasoning capacities but can be shown to exhibit precisely those same skills in the course of their ordinary work – such as tailoring clothes, shopping in a supermarket, loading dairy cases onto a truck, or defending one's rights in a dispute. In such cases it is not the person who has failed but rather the measurement instrument which purported to document the person's level of competence.' Similarly ethnographic studies on the use of arithmetic in everyday situations have shown that the performance levels of people on standardised test items were significantly below those on similar items when they occurred as part of their everyday environment. From *Multiple intelligences*, 1993, Gardner H, Basic Books, New York

26 For more on these ideas, see Leadbeater C, and Oakley K, 2001, *Surfing the long wave: knowledge entrepreneurship in Britain*, Demos, London and Bentley T, 1998, *Learning beyond the classroom: education for a changing world*, Routledge, London.