

Professor Richard Kimbell

Director of the
Technology
Education Research
Unit, Goldsmiths
University of London

Abstract

This paper is an edited version of one that formed the basis of my presentation at the Design and Technology International Millennium Conference in April. It has a number of elements. I draw attention to the rhetoric of creativity that is commonplace in the politics of education, and to the fact that design and technology has a proud record of developing creative youngsters. I then analyse the preconditions of a creative education and the current conditions in Ofsted-dominated schools. The damaging consequences of the misfits between rhetoric and reality are plain to see. I argue that the necessary remedies are equally clear.

The rhetoric

More than half of the 'distinctive contribution' statements in the new National Curriculum (QCA, 1999) claim that creativity is part of their core concern. This claim is made in mathematics, science, design and technology, art and design, music, physical education, and information and communications technology; but (interestingly) it is not made in English, history, geography or modern foreign languages.

Our political masters, David Blunkett and even Tony Blair himself, enthuse about the need for a creative Britain.

'Our aim is that risk-takers are rewarded. Let us believe in ourselves again. Britain's future depends on those with confidence, who take risks, like the creative talents we celebrate here today. They are the people that Britain needs in the next century... those who have ambition for our country.' (Blair, 1999)

'Creativity is a vital part of children's education. In the coming decades the economy will need more people with the ability to think creatively...' (Blunkett, 2000: 2)

But there is cause to worry that our creative future is at risk. The National Advisory Committee on Creative and Cultural Education, the Robinson Report (NACCCE, 1999), has recently recommended 59 actions that need to be taken (by schools/Government/DfEE/TTA/QCA/Ofsted/higher education) to resuscitate the creative heart of education. Taken together, these recommendations reflect a profound state of alarm about the creative condition of the experience received by our youngsters in schools.

The potential

The distinctive contribution statement that prefaces the details of the new design and technology National Curriculum makes some bold claims. In particular, I would focus readers' attention on the key (second) sentence.

'It (design and technology) enables them (students) to understand how to think and intervene creatively to improve the world...' (QCA, 1999: 122)

This sentence points us to the two uniquely human qualities that underpin and form the rationale for design and technology in schools. The first is the vision to imagine how the made world might be improved. The second is the capability to realise that vision by designing and building a better world. These qualities were described by the scholar Jacob Bronowski in his masterpiece *The Ascent of Man*.

'Among the multitude of animals that scamper, fly, burrow and swim around us, man is the only one who is not locked into his environment. His imagination, his reason, his emotional subtlety and toughness make it possible for him not to accept the environment but to change it. And (this) derives ... from the ability to visualise the future, to foresee what may happen and plan to anticipate it, and to represent it to ourselves as images that we project and move about inside our head. Man is not the most majestic of the creatures. But he has what no other animal possesses, a jigsaw of faculties which alone, over three thousand million years of life, make him creative.' (Bronowski, 1973)

The motivation to improve ... and the capability to create. These are the cornerstones of the subject called design and technology as it has been conceived in the UK as part of the educational experience of all children from age 5-16.

And we can all recall fantastic examples of this capability in students that we have taught or examined. I recall with particular delight the intelligent lobster pot, the self-bailing dinghy, and the flexible climbing wall. These were projects that I was required to examine, and in which students demonstrated an astonishing ability to look creatively at a situation – to see what *might* be – and then to make it happen. These are but three examples of the wonderful creativity that is being developed through design and technology. You will all have many more examples of your own. We should treasure them, and shout about them.

The necessary conditions

An enormous amount of research has been undertaken to try to understand the processes underpinning creative acts, and the conditions under which they can best be encouraged. Recently, Gardner has studied the lives of a number of creative individuals, focussing on the times in their lives at which they made their most important breakthrough. His 'subjects' were Sigmund Freud, Einstein, Picasso, Stravinsky, T.S. Elliot, Martha Graham, and Gandhi. He sought to identify common features of their creative processes.

'What emerged from the study was dramatic: not only did the creators all have some kind of significant support system at that time, but this support system appeared to have a number of defining components ... the creator required both *affective* support from someone with whom he or she felt comfortable and *cognitive* support from someone who could understand the nature of the breakthrough.' (Gardner, 1993: 43)

The *affective* dimension takes the form of unconditional emotional support from someone whom the creator values. The cognitive dimension of support involves the supporter seeking to understand and provide useful feedback on the nature of the breakthrough.

'My claim then is that the time of breakthrough is highly charged both affectively and cognitively. Support is needed at this time more so than at any other time in life...' (op.cit: 386)

The centrality of 'support', particularly emotional support, emerges throughout the literature on creativity, and it assumes a dominant position in all the research on encouraging creativity in children. In a recent study, Jeffrey and Woods explored children's attitudes towards creative work in the classroom. The study

'...draws attention to the need for trust in a creative classroom. The emotional climate of the classroom needs to offer each child personal confidence and security.' (Jeffrey and Woods, 1997: 15)

The need for this trust relationship derives, of course, from the fact that creative acts are risky acts, and children will not go out on a limb and take chances if they believe that – should they fail – they will suffer serious penalties. Awareness of such penalties (withdrawal of affection, loss of marks or whatever) acts as a serious and frequently terminal disincentive to creativity.

'One of the biggest challenges for children when creating is having a go at making something which they 'own'. This can carry considerable risk for children, as they may create something which does not meet the approval of the intended audience. There is a need to allow children time to incubate their ideas and to come to terms with the challenges of risking failure before owning their creative work...' (Craft, A., 1997: 38)

'A powerful theme in our own research was the belief that self esteem and self confidence must be nourished in order to be creative.' (op.cit.: 83)

These findings are entirely in line with those from the wealth of research from the 1960s and 1970s. Sears and Hilgard (1963) found

'...a strong negative correlation between the expression of creativity in elementary aged children and teacher behaviour characterised as formal group instruction and using shame as a punishment technique.' (Sears and Hilgard, 1963)

Haddon, F.A. and Lytton, H. (1968) examined the school effect on creativity, using a basic hypothesis that some differences in divergent thinking abilities might be detected between comparable children who spent their formative years in contrasted environments such as different primary schools. The contrasted schools were not good versus bad schools, but rather formal versus informal schools. The former are defined by their emphasis on convergent thinking and authoritative learning, and the latter by their emphasis on self-initiated learning and creative activities.

'The analysis of the test results provide considerable evidence in support of the chief hypothesis. ...informal schools provide an environment which develops qualities of personality that result in a high level of divergent thinking ability. The investigation shows that ... the development of divergent thinking abilities is related to certain teaching approaches. If the teacher can enter into the child's thinking, if she is prepared to let work develop in unexpected directions according to the child's needs and interests, if she can express genuine pleasure in the child's efforts ... it is in this climate that divergent thinking abilities are seen to flourish.' (Haddon, F.A. and Lytton, H. in Vernon, 1970: 382-383)

What we see here is the need for the teacher to adopt both of the roles identified above by Gardner: i.e. both the emotionally supportive

friend, and the cognitively questioning colleague. And we begin to address here not the question of creative children, but rather the question of how to be a creative teacher. There is generally agreement that it is an immensely difficult and delicate task.

'There is a need therefore for teachers to be flexible ... much of this is embedded deep within the teacher's subconscious and operated intuitively. Teachers may find it difficult to articulate in words the reasons for their actions, but this is typical of artistic accomplishments ... creative teaching is complex, artful and flexible.' (Craft, A., 1997: 59)

'creativity (in teaching) is dispositional and not a matter of ability. Teaching is artistry, which is a far more appropriate model than others (such as teacher as manager) which have become dominant in recent years.' (op. cit.: 74)

'We cannot pass off too lightly the fact that in most of the statistical analyses, the pupils of the creatively motivated teachers showed significant growth, while those of the less creatively motivated teachers actually showed decrements... It seems clear that little creative growth occurred during the period of these studies under those teachers who expressed comparatively more motivation to control and correct than to enquire and create...' (Torrance, P., 1965: 84)

Here then is the challenge. To support the creative performance of our students in design and technology we need teachers with artistry; who have the confidence to allow their students to take ownership of their work and develop it in unexpected ways; who have the subtlety to provide the emotional support that students will desperately need; and who can (at the same time) provide the appropriate level of intellectual challenge and questioning to help the students develop their ideas.

Not too difficult then!

The dead hand

It is a basic law in psychology that behaviour that is rewarded will be repeated. This law might sound a bit behavioural, but I suspect we can all recall incidents and circumstances that demonstrates its underlying truth.

So let's think for a moment about what is valued in schools. I don't mean valued by teachers – I mean what is it about the teacher's job that is valued and rewarded by external agencies. How are teachers praised and how are they blamed – and does this give us any clues as to what kinds of behaviour are being encouraged or discouraged. I shall focus

on one body in particular. A body whose policies and practices over the last few years have done more damage to the creative heart of the curriculum than any other. I refer of course to Ofsted.

What teacher behaviours does Ofsted reward?

In order to illuminate this question, I visited the Ofsted web site and extracted several whole reports. I chose an LEA with which I am familiar and identified three community colleges that I know represent the whole population of the towns in which they are located. In total the schools are responsible for the education of 3,300 youngsters, and the Ofsted reports are intended to provide us details of the quality of their educational experience. The schools are not representative, but are illustrative, and the reports too are illustrative of the kinds of reports that schools receive from Ofsted. Each report is approximately 50 pages long, say 20,000 words. So the total word count of these three reports amounts to something like 60,000 words.

Of this total of 60,000 words, I invite readers to speculate on how many times the word 'creative' appears: 100 times? 50 times? 20 times? 5 times? never? The answer is 1. And I invite readers to speculate on how many times the word 'manage' appears in these three reports: 100 times? 50 times? 20 times? 5 times? never? The answer is 87. (26, 30 and 31 mentions respectively).

So what does Ofsted value? How does it reward the creative teachers in those schools, or the creative lessons or activities observed, or the creative use of space, or the creative performance of students? Judging from these reports, it rewards them by ignoring them. It is as though they did not exist.¹ One is forced to wonder why this might be? How can it be that the Ofsted inspection teams visiting these three schools could all miss the point so dramatically? The answer, of course, is that they didn't miss the point. They hit precisely the targets that they are required to hit by Ofsted, and the Ofsted 'Corporate Plan' (40 pages of aims, strategies and descriptions of Ofsted's targets, functions and workings) is evidence of this. How many times is 'creativity' mentioned? Never. And how many times is 'manage or management' mentioned? Nineteen times. The priorities of Ofsted are quite clear. They are made clear to the inspection teams. And the inspection teams make them clear to schools. Forget creativity – but you had better have a tight management system in place. You might have the most tedious curriculum, but you had better be managing it well. And the evidence for such

supposed management lies in reams and reams of paperwork, cross-referenced with standards and targets and deadlines and all the paraphernalia of 1970s style business management.

No wonder that the Robinson report recommended that the Ofsted inspection framework 'should be developed to take fuller account of creative education, and the processes of teaching, learning and assessment that it involves'. (NACCCE, 1999 (i): 171)²

The design and technology team are of course aware of this problem and Mike Ive and his colleagues have done valiant work, consistently seeking to keep alive the creative heart of design and technology against the relentless tide of Ofsted policy. In the inspection framework that is specific to design and technology (Ofsted, 1999 (ii)) you can see his hand at work, exhorting inspectors to watch out for 'pupils handling materials and components effectively and creatively', and noting the need for teachers to 'time interventions to avoid frustrations and to advance learning, without inhibiting their creativity'. But even acknowledging these successes within design and technology, the Ofsted corporate tentacles pervade the document.

Taylor and Hallgarten from the Institute for Public Policy Research comment as follows.

'In theory, regulation can be part of the move to a 'tight-loose' organisation in which central standards are reconciled with front-line autonomy. However, Ofsted's role is not only to measure outcomes, but also to enforce centrally defined 'best practice'... It is difficult to see how the Ofsted process can avoid dampening the growth of a culture of innovation and experimentation. The expanding regulatory State appears to be more about central enforcement than front-line empowerment.' (Taylor, M. and Hallgarten, J., 2000: 10)

I have chosen to target Ofsted as the primary villain in this piece, but it is not the only one. I could equally have selected any of the other regulatory organisations that currently pervade education to ensure 'teaching performance', 'research quality'³ or 'institutional effectiveness'. They all combine to create a situation described very accurately by Shore and Wright (1999) as 'a new form of coercive and authoritarian governmentality'.

Robinson describes it somewhat more diffidently.

'It is important to eliminate the factors which inhibit the creative activity of teachers... There are now in education unusually high levels of prescription in relation to content and teaching methods.' (NACCCE, 1999: 96)

You can say that again. The endless specification of centralised 'standards', and the accountability-mania that accompanies them, dominates all debate about what should be going on in schools.

The consequence

The situation I have described above has a number of consequences, two of which I shall refer to here.

First, teachers know that the bottom line in schools is governed by Ofsted inspections, examination pass rates, literacy and numeracy targets and the whole grotesque panoply of league tables and monitoring and accountability initiatives that have flooded out of the DfEE and its multiple offshoots over the last 10 years.

Teachers know that naming and shaming is the order of the day. To hell with trust, faith and supportive risk-taking environments.

Accordingly, the pre-conditions for creativity that I described earlier are simply not there. Indeed it is far worse than that, for the very *reverse* of those conditions is the everyday reality. We should not be surprised if teachers play it safe rather than take creative risks. It is sensible for them to do so.

Second, we have a desperate shortage of candidates coming forward to train for teaching. I have recently been directing a DfEE research project to enquire into this problem, and specifically to explore the attitudes of appropriately qualified graduates (e.g. in design or engineering) towards a career in teaching design and technology. (Kimbrell, R. and Miller, S., 2000)⁴

The attitudes of these graduates is very revealing.⁵ We presented them with a list of qualities that might be used to describe a job. Examples of these qualities included 'well paid', 'job security', 'lots of variety', 'high status', 'flexible working day'. We asked the graduates to rank order the list of qualities in relation to the 'ideal' job that they might be seeking. Which of the qualities would be very important, which would be *important* and which would they think not important? Subsequently, we asked them to rank the same list of qualities in terms of their view of a teaching job. It emerges that there is a very poor correlation between these students' attitudes towards their 'ideal' job and their views of teaching. Specifically, engineering

students believe that the job of teaching is insufficiently creative; lacks variety; and is poorly paid, whilst design students believe that teaching lacks variety, challenge, professional freedom and creativity. We should note that the most serious mismatch with this group concerns the 'professional freedom' that they seek and that they see as missing in schools.

When we interviewed the students and their final year tutors, their comments enabled us to interpret more fully the views expressed through the questionnaire data. The overriding impression of the student groups is that teaching is a deeply uncreative job, with a tightly controlled and inspected curriculum that gives very little freedom of action to teachers; and moreover they believe that teachers are overwhelmed with paperwork for planning, assessment and accountability.

In the words of the students:

- My generalisation of being a school teacher is that you are very much restricted in what you can teach.
- ...about paperwork too, they don't have the chance to be inventive and innovative.

Given that this was a virtually unanimous opinion, we asked them to make suggestions about what might be done to improve things. What would need to change to tempt them into teaching?

- Maybe do something to make the job seem more creative, get them a bit more freedom.
- Maybe give teachers more control of what they are allowed to teach rather than constricting it down to you can't do this or you can't do that.

The tutors made similar points, particularly about what they saw as excessive inspection, assessment, overwhelming paperwork, and endless teacher-bashing.

- Nobody can live their lives constantly being battered; constantly being told that what they are doing is wrong. You do start believing it, it's just too depressing. So I can't imagine why people would go into teaching at all.

Unless we can do something about this disastrous public perception, design and technology will haemorrhage to death, increasingly starved of the creative teachers that it needs to drive it forward. My own view is that if the multi-millions of pounds that have been spent on Ofsted had instead been spent on teachers' professional development, classrooms would be dramatically different

places. And so too would be the attitudes of the students we interviewed in this study.

The remedy

The problem of teacher supply is but one manifestation of the crisis of creativity in the classroom that I have sought to describe. So what are we to do about the situation? What remedies might we propose?

I return to the points I made earlier, where I analysed the factors that influence creativity in the classroom. *Risk, confidence* and *trust* are interrelated factors. Creative acts are inherently risky. Only confident students will take creative risks and only if they trust their teachers. Only confident teachers will take creative risks, and only if they trust that those in authority over them value what they are doing.

I described above the resulting challenge for teachers who seek to develop their students' creativity. We need teachers with artistry who are trusted by their students; who have the confidence to allow them the space to take ownership of their work and develop it in unexpected ways; who have the subtlety to provide the emotional support that will encourage risk-taking; and who can (at the same time) provide the appropriate level of intellectual challenge and questioning to help the students develop their ideas. This will not come as a surprise to any of you. We all know from our experience in classrooms that it is true.

I have argued that if this is how teachers should be expected to develop the creativity of their students, then by the same token it tells us how we should treat teachers if we wish them to be creative. Creative teachers can only flourish and be imaginative with their curriculum when they are confident in what they are doing and trust that they won't be crapped on if it doesn't work out as expected. Equally they need curricular space and elbow room in which to flex their creative muscles. And they need support: emotional support to encourage and maintain their creative endeavours, and thoughtful intellectual support in questioning and challenging their ideas as they develop. All the evidence – from the 1960s to the present day – argues consistently in this direction. (Craft, A., 1997; Jeffrey and Woods, 1997; Gardner, 1993; Haddon, F.A. and Lytton, H. in Vernon, 1970; Torrance, P., 1965; Sears and Hilgard, 1963)

Teachers do not need any more of the 'coercive and authoritarian governmentality' that has beset education in the last 10 years. They need space, and time, and encouragement for professional development.

The challenge

We know that design and technology has the potential to develop the creative talents of our youngsters. I remind you of the intelligent lobster pot, the self-bailing dingy, and the flexible climbing wall. But we also know that in some schools, the design and technology experience is dull and lifeless. The point of my paper has been to analyse the conditions that have contributed to the damping down of the creative fire in design and technology. Equally my analysis enables us to see what we must do to revive and refresh our curriculum.

So here is my challenge to David Blunkett. Heed the words of Tony Blair.

'Our aim is that risk-takers are rewarded. Let us believe in ourselves again. Britain's future depends on those **teachers** with confidence, who take risks, like the creative talents we celebrate here today ... they are the people that Britain needs in the next century ... those who have ambition **for our curriculum**.' (Blair, 1999 – with selected modification)

Of course it will be risky. There will be more creative failure, but there will also be more spectacular and exciting success, and there will be a lot less of the barely tolerable, the mundane, and the tedious.

As recently as January this year, Blunkett is on record as saying that 'Creativity is a vital part of children's education...' My judgement of the current state of affairs is that creativity in the curriculum is in deep crisis. Let us hope that since making his bold statement, Blunkett has a plan to resolve this crisis. I think we should judge his future actions against his fine words.

References

- Blair, T. (1999) 'Speech at the Millennium Products Awards – Millennium Dome', London: Tues 14th Dec 1999 (see www.design-council.org.uk)
- Blunkett, D. (2000) Press Release 5/2000, Department of Culture Media and Sport, London: 14th Jan 2000
- Bronowski, J. (1973) *The Ascent of Man*, London: British Broadcasting Corporation
- Craft, A. (1997) *Can you Teach Creativity?* London, Education Now Publishing Co-operative
- Gardner, H. (1993) *Creating Minds*, New York: Basic Books
- Haddon, F.A. and Lytton, H. (1968) 'Teaching Approaches and the Development of Divergent Thinking Abilities in Primary Schools', *British Journal of Educational Psychology* vol 38: 171-80
- Jeffrey, R. and Woods, P. (1997) 'The Relevance of Creative Teaching: Pupils' Views' in Pollard, A., Thiessen, D., and Filer, A. (Eds) *Children and their Curriculum*, London: Falmer Press
- Kimbell, R. and Miller, S. (2000) 'The Attitudes of Potential Teachers of Design and Technology: A Research Report', London, DfEE
- National Advisory Committee on Creative and Cultural Education (NACCCE) (1999) *All Our Futures: Creativity, Culture and Education*, London: DfEE
- Office of Standards in Education (Ofsted) (1999) (i) *Corporate Plan 1999*, London: Office of Standards in Education
- Office of Standards in Education (Ofsted) (1999) (ii) *Inspecting Subjects and Aspects 11-18*, London: Design and Technology Office of Standards in Education, Feb 1999
- Qualifications and Curriculum Authority (QCA) (1999) *The Review of the National Curriculum in England: The Consultation Materials*, London: DfEE/QCA
- Sears, P.S. and Hilgard, E.R. (1963) *The Effects of Classroom Committee Conditions on the Strength of Achievement Motivation and Work Output in Children*, California: Stanford University Press
- Shore, C. and Wright, S. (1999) 'Audit Culture and Anthropology: Neo Liberalism in British Higher Education' *Journal of the Royal Anthropological Institute*, 5 (4) (December): 557-575
- Taylor, M. and Hallgarten, J. (2000) 'Freedom to Modernise', *Education Futures*, London: Design Council and Royal Society of Arts
- Torrance, E.P. (1965) 'Teaching Approaches and Divergent Thinking Abilities', *Rewarding Creative Behaviour*, Chapter 27 New Jersey: Prentice Hall
- Vernon, P.E. (1970) *Creativity*, Harmondsworth: Penguin Books

Notes

- 1 In case readers feel I am making a meal out of just three reports in one LEA, I decided to broaden my survey a little. I chose another LEA in a completely different part of the country, and went through the same procedure. In two of the three reports that I examined, the pattern was the same, with (in each case) between 30 and 40 occurrences of the word 'manage' and just two occurrences of 'creative'. Interestingly however, the third report broke the trend by providing a higher number (six) of 'creative' references. Closer inspection of the report then revealed that its author (the Registered Inspector) was a design and technology adviser/inspector. Once again design and technology to the rescue.
- 2 I am informed that over the last few months this has happened. In the latest generation of reports we might expect some improvement.
- 3 I refer here to RAE in higher education.
- 4 The executive summary of the report 'Research Brief 194: Attitudes of potential teachers of design and technology' is available on the DfEE web site.
- 5 The research sample was 130 final year undergraduates (and their tutors) on a range of design/technology related courses in 18 universities