

Visiting Time and Boychild: site-specific pedagogical experiments on the boundaries of theatre and science

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What happens when science education and theatre vacate their traditional domains, the classroom and the theatre? Anna Ledgard has been intimately involved in two innovative projects that have taken participants into some highly unlikely spaces – including performances in a working hospital and a deserted former military installation. The learning experience associated with such projects is undeniably richer but may be challenging to fully describe – or assess.

It was Oscar Wilde who said:

I regard the theatre as the greatest of all art forms, the most immediate way in which a human being can share with another the sense of what it is to be a human being.

Left:
'Fractured femur forgotten
Boychild flies a kite', *Boychild*,
2007.
Andrew Whittuck

If we are to engage the next generation of students in science learning then the ways in which science concepts are introduced need to acknowledge the role of science in human affairs and be relevant to our lives as lived. It could be argued, then, that the use of theatre as a means of exploring the role of science in everyday lives can deepen insights into the human condition and create powerful new forms of arts and science learning. Such experiments require us to stretch the boundaries of conventional science teaching or theatre practice, taking activities beyond the physical spaces of school or classroom, theatre or studio, and opening up new spaces for learning.

The two projects I shall explore in this chapter, *Visiting Time* and *Boychild*, were developed and performed in spaces and places not dedicated to performance ends and had as their goal the engagement of communities in science learning. Both projects involved adults and children in an extended interdisciplinary arts process and innovative live performances, providing an experimental conceptual 'space' for learning. The work took place in a variety of physical places and spaces, some dedicated education spaces, others sites or settings offering a range of resources and opportunities.

Artists and theatre makers, like scientists, are driven by a deep curiosity and an urge to find out what makes the world tick; for them the drama process is the laboratory for their experiments. But working outside the narrow disciplinary framework that science teaching sometimes imposes, the artist is free to investigate scientific knowledge in the broader context of human lives and concerns. Artists can work outside the conventions that tend to separate minds from bodies, thoughts from feelings, and medical knowledge from patients' lived experience.

Boychild and *Visiting Time* were experiments in this hybrid world. They provided opportunities for students to explore the ways in which science applies to the world and to human experience, personal lives and communities. The experiments raise important questions not only about arts and science learning, and the spaces and places in which it takes place, but perhaps even more importantly, about learning itself.

This chapter is an attempt to explore the underlying principles behind these two experiments and their wider educational impact. How do we ensure that our work is good art and genuinely innovative as well as meeting educational objectives? How do we find a language to articulate arts and science learning? How do we balance arts making with the priorities of education institutions and curricula? How do we balance open-ended exploration with the need to inform?

The projects

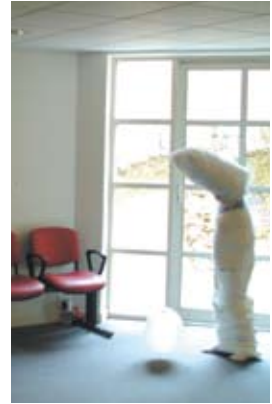
Visiting Time and *Boychild* were collaborations between West Dorset General Hospitals NHS Trust and education organisations in West Dorset, and were funded by Arts Council England and the Wellcome Trust. They both involved me as educationalist and producer, and the artist Mark Storor in a distinctive style of participatory performance practice leading to site-specific performances.

Storor's unique approach to interdisciplinary arts practice clearly had a profound impact on participants and was perceived as genuinely innovative by many of its reviewers and audiences. It is of course impossible to do full justice to the magic and sheer 'live-ness' of these events in words on a page. Andrew Whittuck and Robert Quincey's compelling images, and the poetry that accompanied *Visiting Time* and *Boychild* from the beginning, have assisted me greatly in bringing an extra dimension to this description.

In 2004 *Visiting Time* opened in the East Wing of Dorset County Hospital, with audiences of five at a time invited to an 'appointment' for 'treatment'. They were tagged and swabbed, and led by performers, all clad in pyjamas and pillow-head masks, through a working hospital, encountering along the way a series of performance installations. In one a 'pillow-head' figure, limbless, trapped in a cotton-wool cocoon, attempted to keep a balloon in the air (see image, right). In the lecture theatre a scientist asked the audience the enigmatic question: "How can I make a snowball when my hands are always hot?", referring to a condition associated with cystic fibrosis.

Visiting Time came out of a collaboration between West Dorset General Hospitals NHS Trust and the Sir John Colfox School, Bridport. The piece was devised with help from a young patient with cystic fibrosis, hospital staff, nurses and a geneticist. Its substantive thematic content was to investigate the science and human impact of genetic inheritance, but aesthetically the task was about the possibilities of making performance in spaces not dedicated to performance ends, in this case a working hospital.

Theatre has for some time been experimenting with the relationship between spectators and participants by drawing audiences physically into the mechanics of the setting, thereby eroding the separation of audience and performance.



Above:
Visiting Time, Dorset County
Hospital, 2004.
Andrew Whittuck

Visiting Time's tagging of its audience as 'patients' similarly dissolved these boundaries but also identified the 'spectators' as individual human beings, albeit as processed by a medical bureaucracy. Their presence in a working hospital alongside 'real' patients added further impact.

The first public performance of *Boychild* took place on Father's Day, 17 June 2007, in a defunct wing of the former Admiralty Underwater Weapons Establishment at Portland, Dorset. Audiences, ten at a time, were led on an archetypal journey through the life of a male from birth to old age. The performance integrated scientific knowledge with glimpses of the memories, fears, desires and thoughts of men and boys towards maleness in society today, gathered during the preceding 12 months. The participants were over 80 boys and men aged from infancy to old age (in schools, a young offenders institution, with artists and scientists, fathers, fathers-to-be and elderly men in working men's clubs).

Boychild

An older man, 70, loses the thread. As his thoughts unravel, his mind elsewhere, an alarm goes off. Boychild, 7 opens a door and leads us out of confusion.

Boychild, 21, a fetus suspended in a tank, contemplates the father he is yet to meet. He wonders if his-story will repeat itself.

Overwhelmed by a kaleidoscopic plethora of conflicting and ever-erupting feelings, it is a tricky business, navigating one's way through the turbulent emotional landscape inhabited by Boychild, 7.

His body, an oddly shaped potato, with unfamiliar sproutings, torments. Neither man nor...Boychild, 14, struggles to come to terms with the inevitable.

Endocrinologist, 39, a boychild himself, explains fetal biology.

Boychild, 35, an expectant father, sings a hymn to his unborn child.

Ensnoced in a rose garden, Boychild, 70, fondly remembers. Boychild, 7 makes him a cup of tea...

Boychild, early 40s, *undertakes* the last shave. It is important he goes out as he came in.

Boychild, 21, 500 ft above sea level, adorned with his grandfather's cufflinks, beckons us to the table. He donates his organs.

Transforming space: the workshop processes

In describing his work Storor makes constant reference to the way in which theatre can help to illuminate behaviours and experiences that may be deeply buried or hidden within us:

All I'm interested in is what it is to be human and to be moved and to feel something even if you don't know what it is... (Mark Storor, interview transcript, 8 July 2007)

Storor's methodology is consistent in its starting-point: "Once I'm working with people, ethically it has to be about what those people start with." This insistence is rooted in his own strongly held pedagogy, focused on the needs of the learner. At the same time both of us are well aware of how difficult it can be to maintain such principles when working within different kinds of organisation and with multiple partners.

Drawing sensitively on the place in which the learners find themselves is a central feature of the method. For example, the preoccupation of the seven-year-olds with their feelings (both



physical and emotional) led to an exploration of the biological functions of the body – the heart, the brain, the nervous system, blood vessels. In a workshop space, ribbons of different colours, representing blood vessels, the nervous system and sinews, were physically attached to the body of a child, with reference to human anatomy books (see images, left). This ‘dramatisation’ provided an introduction to important biological concepts. Further factual knowledge was sought in a visit to At-Bristol science centre. A workshop with science graduates offered insights into the workings of the senses. As far as the school science curriculum was concerned, important learning had been covered, but for the children their interesting quasi-philosophical question, ‘How many feelings does a boy have in a day?’, remained unanswered.



Above:
Boychild workshop, 2007.
Andrew Whittuck

Storor talks of the importance of transforming space, or “transgressing it”, and a feature of all his workshops is the changing of the space from “literal” to “dramatic”, from “expected” to “unexpected”. This is done either by removing familiar patterns and arrangements of furniture, or by bringing in symbolic objects, such as the seven sets of vests and pants, from babygro to XXXL or the seven male overcoats laid out across the floor. This serves the process well, the deliberate choices and juxtapositions of objects and colours (red plastic bowls, blue backgrounds, timeless white vests and pants, hospital-issue pyjamas) hinting at atmospheres and meanings while reconfiguring the familiar surroundings of school hall or classroom. It has the added advantage of creating an expectation or curiosity, and what Storor describes as “a disruption in the physiognomy of the people coming into the room”. This “disruption” happens as the perception of space moves from literal to symbolic, having the potential to become the space for new kinds of thinking.

Nowhere was this sense of space more dramatically realised than in our work at Portland’s Young Offenders Institution. Portland inscribed itself on our consciousness from day one. Our many

journeys along the coastal road, the steep climb onto Portland and the stunning views back along Chesil Beach contrasted sharply with the journey through the entry cages of the prison.

The discovery of Southwell Park, the disused wing of the former Admiralty Underwater Weapons Establishment, added yet more symbolic overtones, invoking a further set of metaphors for masculinity and maleness. The building itself brought to Boychild 'representations' of working lives based in cell-like workspaces, designed for individual, isolated activity. The original centrally controlled loudspeaker system still connected corridors of numbered rooms and even extended along the once impenetrable perimeter fence. This was a building that could add its own narrative while holding the stories of boys and men without distracting from their essence (see image, right). Contrasting undercurrents of great tenderness and the potential for violence that had emerged from the artistic development process seemed almost echoed in the fabric of the building itself, as well as the placing of the images within it.

The artist's filter is perhaps at its sharpest when images and ideas from workshop processes meet the physical context for performance. Once responding to the space every choice is deliberate and nuanced and has potential to add to or distract from the existing narratives:

...by sharpening the aesthetic and keeping it bare you honour the story because it has nothing extraneous around it...
(Mark Storer)

In the performance the choice to invite the smallest boys to descend the stairs, still too little to unlock the doors and let us in unaided; or the deliberate juxtaposing of repeated door-slamming with the gentleness of a small child making tea for his grandfather: these are the kind of precise decisions that permeate the performance methodology.



Above:
'Follow me', *Boychild*, 2007.
Andrew Whittuck

One of the most memorable moments of *Boychild* in the Young Offenders Institution was when the young men raced to get into a babygro (5'10" young men encased in 18-month-olds' babygros). The activity was in part a strategy to regain the energy that an intervening week in prison had dulled, and also to assist the transition from the space of prison to the imaginative space of our workshops. The initial playful game led us back to a young man's very serious question: was I born to be a criminal? The strong symbolism of the babygro – its ambivalent connections with 'innocence' – was a strong visual cue to reflection on the nurturing of 'the boy' in the often disrupted social contexts which were familiar to our group.

My dad made me get the thing to beat me.
Dad was discipline, judge and sentencer.
My mum called us her pitbulls, there were nine of us,
She was tired by the time she had me.
(Portland Young Offenders Institution participants group
poem, 2006)

Artistic practice

Storor's work defies easy definition although it has some reference points in 'live art', forum theatre and theatre-in-education, where participants engage both physically and emotionally in a deeply embodied learning process. It shares some features with applied drama. In *Applied Drama: The gift of theatre*, Helen Nicholson offers a definition:

Applied drama is principally concerned with enabling people to move beyond the ordinary and everyday and use the aesthetics of drama, theatre and performance to gain new insights into the social and cultural practices of life. (2005, p. 129)

There are of course risks to undertaking this work. These are in part mediated by clear facilitation structures, strong partnerships and a consistent pedagogy. It is the credible 'voice' of the pedagogical and

organisational framework that can enable institutions to feel safe with what might otherwise be perceived as considerable levels of risk. Artist's and producer's understanding of their ethical responsibilities is also critical (see Nicholson, 2005, pp. 155–67).

However, paying attention to the safety of the 'space' for experimentation and maintaining trusting relationships is vital to the wellbeing of all, as well as being the key to the 'truth' of the final performance. Storor engages as fully in the artistic process himself as he would expect others to. Trust was sealed early on in *Visiting Time* when he cut off his beard as his contribution to the gathering of fragments of our genetic material. Not only was this a moment of pure theatre – it set off an audible gasp among the group – it also sent a message that this work was going to require genuine commitment. It also signalled that this would be a two-way process, characterised by reciprocal relationships. Storor is emphatic that he does not separate his creative and pedagogic practice:

There is absolutely no difference between my own creative practice and my participative practice. All I'm interested in is making art and in making the art I want to hone my own skills as an artist...actually the most important thing is to have a genuine dialogue with the person that you're working with and the place and the meeting point between the two of us is where the art happens. If you're holding back from bringing your own self into that arena then actually the work is meaningless.
(Interview, 8 July 2007)

Science and theatre

Both *Visiting Time* and *Boychild* took science learning outside the classroom and involved adults and children in an extended interdisciplinary arts process and innovative live performances. Both engaged with an exploratory methodology premised on the belief that significant learning can be gained through the shared exploration of personal stories and their embodiment in site-specific performance.

The projects illustrate that theatre can in certain conditions place a screen around experience, transforming it into potent metaphors with significance and meaning for others. In the perceptive words of a student of applied theatre:

...real behaviour can become performance, real stories can become art and real experiences become archetypal...
(Aylwyn Walsh, July 2007)

In *Boychild* a connection with science ran though the entire performance – sometimes only hinted at in the juxtaposition of ideas and images, like the sperm made of a lifetime’s worth of human hair, or the undertaker correcting a popular misconception that hair can continue to grow after death. On occasion it was factually informative, as when an endocrinologist explains the genetic origins of the male. The opening moments of the event reference the blurring of reality of Alzheimer’s disease as the soundtrack in the audience’s ears becomes increasingly dislocated from the elderly man who tries to remember why he stands before them until finally his words disintegrate entirely (see image, near right).

Perhaps not surprisingly, given the ages of the schoolboys, the experience of puberty became an important theme. The difficulty of disentangling the emotional and physical was explored in their writings and visualised in the image of a pubescent boy, clad in pyjamas, searching an exquisitely lit pile of potatoes for one that most resembled himself (see image, far right). The group poetry that gave rise to this image hints at the emotional confusion, frustrations and anxieties, as well as the physical changes, of the adolescent male:

My soul is an empty warehouse, full of potential, stilled like a goldfish in a bowl.
I am a small old shed inhabited by the biographies of the person



I am yet to be
 How can you understand me if I do not understand myself?
 I cannot draw myself complete. My body fills my mind.
 Why do men's hearts give out before women's?
 I dig my hands into the earth, fingers curl around unfamiliar
 forms.
 As my body sprouts I am an oddly shaped potato.
 (*Boychild* book, June 2007)



Left:
 'Welcome', *Boychild*, 2007.
 Right:
 'Unfamiliar sproutings',
Boychild, 2007.
 Andrew Whittuck

Learning about science

There is evidence that young children's informal learning about science in particular comes from everyday experience of where science connects with family or community. The final performance of *Boychild* followed a storyline with participants presenting narratives that could be understood in terms of scientific content. Such content was not explained; it was left to the audience to make the connections and to recognise the recurring themes of the development of the male, puberty, ageing, fatherhood and birth, the interplay between genetic inheritance and upbringing and the science of gender. At times factual information was given, but rarely; instead a series of images was presented, each rooted in the *Boychild* narrative, and either loosely or more directly connected to a scientific concept.

Rather than setting out to engage participants with particular science knowledge, *Boychild* started with a framework that invited groups to identify their own views, experiences and interests in response to a given set of stimuli. Such an approach enables young

people to make decisions about the focus, content and nature of their involvement and can be highly motivating. But such methods are also often in conflict with the predetermined learning outcomes and performance measurement of science and other curricula, as is acknowledged by the Head of Drama in the secondary school:

Most of all...[*Boychild*] was a reminder of how extraordinary and profound arts work can be when it is not bound by curriculum and other constraints and when the focus of the work comes from the individual. (Janice Wrigley, personal communication, 12 August 2007)

Site-specific performance and situated learning

Theories of ‘situated learning’, or learning embedded in social processes and physical contexts, can be applied to the extended and immersive experiences employed in *Visiting Time* and *Boychild*. Situated learning is active and engaged learning from doing, understanding gained through experience and participation in activities in relationships with others (Lave and Wenger, 1991). In *Visiting Time* the relationships and the learning were mediated through their placement in a working hospital. In *Boychild* the arts process depended on a meticulously constructed metaphorical space described by artist Mark Storor as a place “in which to explore masculinity differently, to negotiate and renegotiate the parameters of maleness”. In literal terms this involved the creation of a new space at the Southwell Park site.

Following the threads of the narratives unearthed in the drama process took learners to a range of physical spaces both formal and informal, familiar and unfamiliar: school halls and classrooms, a science centre, a redundant MOD building, a prison education wing, a hospital maternity class, a bakery, a working man’s club and even an undertaker’s premises. As the material was gathered, different kinds of learning encounter were planned in response, so

that students engaged in a wide range of different types of social interaction. Such learning also took place at times outside the usual rhythms and routines of school or institution, and with authentic, real-life goals and deadlines, not the often artificial goals of curriculum assessment.

When learning derives from social participation and shared experience, the spaces and places where learning takes place become powerful instruments. This is particularly true in institutions such as schools, hospitals or prisons where the uses of spaces are often potent symbolic reflections of lived experiences. The prison cell is an instrument of discipline, power and control. To experiment with such spaces, literally taping the dimensions of a cell onto the floor enabled us to suspend such power relationships and to revisit collectively the time spent by each young man alone within these parameters.

The young men from Portland Young Offenders Institution could not take part in an actual performance. Instead, they discussed how they wished to be embodied – as a male fetus before birth. An 18-year-old boy in a glass tank, lit carefully, speaks the thoughts of the unborn child; we, the audience are viewing a scan of a child yet to be born (see image, p. 124). This may reflect several associated ideas. ‘Are we born criminal?’, the young men had asked. Both womb and cell represent a fixed ‘sentence’, both a confinement of sorts. But there the similarity ends, for the womb represents a period of consistent and unconditional nurture. The prison cell, on the other hand, could be perceived as the consequence of later boyhood nurturing: “didn’t you beat me when I could not spell ‘red’ R.E.A.D.” (*Boychild* soundtrack, Jules Maxwell, June 2007). The womb is everybody’s initial state of innocence, the prison cell reserved for those we exclude from society. The performance of the grown-boy fetus in his womb-like cell provided a view of ‘Boychild’ as full of potential, yet subject to labelling, misunderstandings, and a violent outside world:



I have no memory of you father...no memory I care to cherish
You burn your beats into my heart, into my skin
Like a toppled iron, sizzling on my arm
This is when men scream
Etched, I am branded
(*Boychild* soundtrack, Jules Maxwell, June 2007)

Left:
'Foetus', *Boychild*, 2007
Andrew Whittuck

What kinds of learning took place?

In his bestselling work on emotional intelligence, Daniel Goleman (1996) emphasises the importance in young children of emotional intelligence, with its influence on personal qualities such as empathy, self-awareness, negotiation and analysis of social interactions. In arts learning and, arguably, particularly within a drama process, the exploring of individual stories and the rehearsing and revisiting of lived experiences offer powerful opportunities for emotional learning, alongside the logical and linguistic development involved in factual learning. This was reflected in the words of a young participant in *Visiting Time*:

[The presence in the group of a young patient] helped us to understand cystic fibrosis in a way which we wouldn't have understood if we had learned it just during lesson times. We actually felt what it must be like to live with a genetic disease and what people deal with every single minute of their lives. (Sir John Colfox School student, April 2004)

A primary school head teacher identified emotional learning as one of the most valuable aspects of the work:

For boys of 7–8 yrs old there's often not a huge awareness...and sensitivity towards others...and I feel that over the course of the year they developed both a self-awareness and a greater sensitivity to both the needs of others and the demands that others place upon them. (Bridport Primary School Head Teacher, July 2007)

Given what we know about emotional intelligence it is perhaps not surprising that the young boys (aged seven when we started) identified their turbulent emotional landscape as the starting-point for their drama process. The ensuing process offered them a means to explore and understand their emotions and behaviours, perhaps even in some cases to manage them better. It also offered them space to reflect on this learning and to understand something of its relevance beyond school. *Boychild* provided a framework that enabled young participants to engage with older males and to cross the boundaries of the places in which they are most used to learning. This challenged some underlying assumptions: that learning takes place in age-based groups, and that the primary context for learning is classroom-based tasks. An iterative cycle of reflection and review ensured that hearing and reflecting on the views of others was an important part of building a range of perspectives and understanding the foundations for other peoples' perceptions, attitudes and beliefs.

Before I did *Boychild*, I did not listen much to other people. I thought what other people had to say wasn't important, but now I think it's very important. (Bridport Primary School student, July 2007)

The sincere comment of an eight-year-old who summed up his experience in the words "I learnt what it is like to be a man not a boy" (Bridport Primary School student, July 2007) reflects his appreciation that he had been given an opportunity to consider his ideas in relation to people and factors outside the usual relationships to be found within school. His Head Teacher also acknowledged the potential for learning outside the classroom:

...classrooms do restrict children's opportunities, and so when they are outside the classroom and especially when they're working with people who are asking quite challenging questions that's when children really feel that they are in a position to say

what they like... (Bridport Primary School Head Teacher, July 2007)

It is also a feature of situated learning that transferring learning between informal and formal settings is not a natural or straightforward process. While the majority of the students in *Boychild* were studying sciences, the tightly assessed nature of the A-level syllabus gave the students neither the conceptual space nor the time to connect directly the two forms of learning. Students themselves associate their learning primarily with drama and the arts, perceiving it to have little relevance to the science curriculum. Yet they go on to describe complex learning:

My learning was always happening, I learnt so much, such as what it's like to be male from the view of so many males of all ages from small to old.

I have gained a good insight into how the male body is different from a female, not only the obvious physical differences, but also the psychological and I have begun to grasp why our stereotype has become what it is, and what position men are expected to play in society. (Sir John Colfox School student, July 2007)

These reflections reveal that they are making connections between ways of knowing things and linking their activities with wider realms of social and personal understanding, as well as thinking deeply about concepts with a strong connection to science.

Pedagogical issues

These projects were intended to stimulate debate, to examine social, cultural and ethical issues, to encourage new ways of thinking, and to innovate. They did not set out to 'teach' scientific ideas or meet specific curricular objectives. They involved collaborative open-ended experiments in which scientific ideas

and concepts were encountered and investigated in response to priorities identified by participants, supported where appropriate by scientists and scientific knowledge. Scientific ideas and concepts ran through the work in images, words, actions and sometimes meanings that went beyond words. The science learning that resulted is subtle, tacit learning, difficult to pin down, perhaps not yet discernible in some instances.

The learning in *Boychild* and *Visiting Time* came as much from the engagement and curiosity that gave rise to questions as from the answers that we sought from scientists or others. There are some questions to which science offers a number of responses, but not a complete answer:

How can I make a snowball when my hands are always hot?

Does my talent live in my genes or does it come with practice?

How many feelings does a boy have in a day, 50, 150, 1000, 25, 100, 1, 9999, 1 billion?

Why do men's hearts give out before women's?

Was I born to be a criminal?

In some cases factual knowledge can be sought – a visit to the science centre or an interview with a geneticist. Both serve to confirm that the deeper questions of science and their connection with lived experience do not have straightforward answers. What are important here are not the answers but the questions and the natural curiosity that emerges from the arts process, a prerequisite of successful science learning (Simon, 2001).

Science is everywhere and it matters most to us at the point when it intersects with our own lives. In many respects *Boychild* and *Visiting*

Time were hugely ambitious, blurring the boundaries between various practices: participatory arts, applied theatre and science education. They were experiments in providing an expanded space for learning presenting science enmeshed with human stories, acknowledging the emotions as well as the intellect and seeking to make it relevant to the lives of real people. In a deeply embodied learning process they created 'communities of curiosity' with the skills and motivations to take real responsibility, to apply knowledge beyond the classroom, to made connections between ways of knowing, and to reflect and review learning along the way.

It allowed scientific learning to become immediate, sensory and deeply personal. It invited participants to find beauty in science, and to recognize the critical judgments involved in making art. (Helen Nicholson, Guardian Unlimited, 20 June 2007)

My thanks are due to all who participated in *Boychild* and *Visiting Time*, to Alex Coulter and above all to a unique artist and collaborator, Mark Storer.

Bibliography

- Arends B, Thackara D (eds). *Experiment: Conversations in art and science*. London: The Wellcome Trust; 2003.
- Bentley T. *Learning Beyond the Classroom: Education for a changing world*. London and New York: Demos; 1998.
- Callanan A, Braswell G. Parent-child conversations about science and literacy. In Z Bekerman et al. (eds). *Learning in Places: The informal education reader*. New York: Peter Lang Publishing; 2006. pp. 123–39.
- Goleman D. *Emotional Intelligence: Why it can matter more than IQ*. London: Bloomsbury; 1996.
- Lave J, Wenger E. *Situated Learning: Legitimate peripheral participation*. New York: Cambridge University Press; 1991.
- Nicholson H. *Applied Drama: The gift of theatre*. London: Macmillan; 2005.
- Nicholson H. At last – educational theatre that can be called art. *Guardian Unlimited* 2007 20 June. <http://blogs.guardian.co.uk/theatre/2007/06/sitespecific.html> [accessed 4 January 2008].
- Piaget J. *The Language and Thought of the Child*. New York: Meridian; 1974.
- Simon H. "Seek and ye shall find": how curiosity engenders discovery. In K Crowley et al. (eds). *Designing for Science: Implications from everyday, classroom, and professional settings*. Mahwah, NJ: Erlbaum; 2001. pp. 5–20.
- States B. The actor presence: three phenomenal modes. In P Zarrilli (ed.). *Acting (Re) Considered: A theoretical and practical guide*. London and New York: Routledge; 1995.
- Stoetzler M, Yuval-Davis N. Standpoint theory, situated knowledge and the situated imagination. *Feminist Theory* 2002;3:315.
- Thompson J. Applied theatre: bewilderment and beyond. In K Richards (ed.). *Stage and Screen Studies*, Vol. 5. Oxford: Peter Lang; 2006.