Made for each other

Creative sciences and arts in the secondary school

Shirley Brice Heath, Elke Paul-Boehncke, and Shelby Wolf
## Contents

**Foreword:** Anna Cutler, Director, Creative Partnerships Kent . . . . VII

**Introduction:** ................................................................. 1

**Chapter one:** Parallels of learning in the sciences and arts . . . . 13

**Chapter two:** The secondary school as setting: Learning as a young adult ................................................. 29

**Chapter three:** Studios, rehearsals, and laboratories as theatres ................................................................. 45

**Chapter four:** Dancing together ................................................................. 61

**Chapter five:** Changing systems: New places, times, and learning leaders ................................................................. 81

**Chapter six:** The Growing Initiative: Living organisational learning ................................................................. 103

**Afterword:** Tony Lyng, Head Teacher, Brockhill Park Secondary School, Hythe ................................................................. 117
Foreword

Anna Cutler
Director, Creative Partnerships Kent

“Russian-born Nobel Prize laureate Ilya Prigogine once remarked that the 20th Century has “transformed our entire planet from a finite world of certainties to an infinite world of questioning and doubt”. If ever there was a need to stimulate human creativity, it is now: accommodating and updating to this “infinite world of questioning and doubt” will require creative imagination and initiative on the part of individuals, communities and whole societies. “Creativity” can no longer be reserved to the arts. It must be applied across the full spectrum of problem-solving. (Chapter 3, Creativity and Empowerment, of Our Creative Diversity, © UNESCO, 1995.)

Creative Partnerships is a nationally funded initiative that responds to the need for creativity. It has a wide and varied set of responsibilities that aim “to give school children in areas throughout England the opportunity to develop their potential, their ambition, their creativity and imagination through sustainable partnerships with creative and cultural organisations, businesses and individuals.”

At the heart of this statement lies something different from previous arts and education programmes: firstly, that the programme is not skills-based and art-form specific and secondly, that it requires sustainability. Within this word lies a responsibility not simply to generate positive, high quality and meaningful partnerships between schools and cultural practitioners, but to ensure that these partnerships continue beyond the life of any given project, of any given month and any given year. From the outset, the question of how sustainability can be achieved has been one of the toughest asked of this programme, and the answer, if there is one, must lie not just with our key protagonists, but beyond the classroom and practitioner and into communities, city councils, Local Education Authorities, training institutions and other local and regional stakeholders. “The task of building a truly creative society is not a game of solitaire. This game we play as a team” Richard Florida, (2002, p.326)

During the first year of activity at Creative Partnerships Kent, it became clear that the most conducive climates for creativity both within and outside of the arts lay in the method of approach and not the subject matter. This is a point strongly reinforced in this monograph. Creative learning and similar approaches that engender the ability to identify and solve problems, think differently, be risk-taking and have real-world outcomes are key sources for developing creativity and building sustainable creative futures. It so happens that the arts and the sciences are both well equipped to take on this approach, as the values implicit in creative learning often lie at the centre of necessary activity in both disciplines: this monograph explores the possibilities inherent in and across both.

In February 2003, we launched Creative Partnerships Kent, and it was our intention to
present an event that captured the ethos of Creative Partnerships and that revealed the kind of practice and partnerships that we wished to develop over the next few years. To this end we worked with three groups of young people of mixed abilities, race, and age (12-16) across three schools, over a term, to create a professional quality sound installation to be played for the duration of the journey through the Channel Tunnel to a wide and diverse audience of local and regional stakeholders. The piece was entitled *Europhonix* and was based on the theme of place and identity - the umbrella theme for all projects that have taken place in Kent over the last two and a half years, and a theme that has often provoked participants to look outwards to international neighbours as a way of assessing their own sense of self.

The method of approach taken for this project by composer and facilitator Robert Jarvis employed all key features of creative learning. The students produced a CD that was of such quality that it was shortlisted for The British Composer of the Year Award. Brockhill Park students created an excellent piece of dance to the music generated by their peers, and language students from yet another Creative Partnerships school became our PR company and organized the event, planning the look of the day, writing bilingual press releases and ultimately running the launch and managing the travel. Following the event, the language students presented their work to representatives from the Treasury to explain what they had learned and how this experience had impacted positively on their lives, whilst the dancers had the opportunity to re-perform their piece at the Barbican, London.

Businesses such as Bose, Eurotunnel and Saga, generously donated time, energy, coaches and high quality equipment to enable 200 invited participants to journey through the tunnel with 50 students to launch Creative Partnerships Kent, and to listen to the composition that lasted the exact distance of that actually covered from France to England. It turned out to be an extraordinary journey that took us to the beginning of our full programme of work for 2003/4, and there was an undeniable sense of excitement and anticipation at what might be possible to achieve.

In a recent report, researcher Caroline Blunt (2004) describes Creative Partnerships Kent as a catalyst for creativity; it is very much with this in mind that this study can be read. Our relationship with Brockhill Park School (now a College of Performing Arts) has been very positive and productive, and we have worked on many projects and extended programmes with them. The most enduring, aside from the on-going dialogue we have with the staff, has been the work with a resident artist, who, over a year, engaged with a range of staff from a variety of disciplines in the idea of creativity and creative learning. The aim was to add value across the entire school by giving an additional perspective from an external professional. Indeed, whole school change has been an important aspect of the work of Creative Partnerships Kent, as any real sustainability can only be achieved if creativity is embraced at both an institutional level and as a whole idea across subjects, not just as an exclusive privilege to the arts.

Although many aspects covered in this book may have formed part of a Creative Partnerships Kent project, they have merely been catalysts for a much greater project of development and creativity taking place across the whole school. In the complex balance of competing demands in secondary education, it is nothing less than extraordinary that
Brockhill Park School has enriched the creative development of students whilst meeting all testing standards. We know that these two strands demand very different abilities from young people, and time must somehow be found to ensure that both are meaningfully pursued. This study also exposes how time and space are in desperately short supply within secondary education to do this, which, of course, limits opportunities to pursue the kinds of beneficial project-based learning that this volume indicates come with both the arts and sciences.

What is clear is that change and creative development can take place and are able to be achieved across a large secondary school. What is also clear is that the kind of creative learning we wish for all students doesn’t happen overnight nor at the flick of a switch, but over months of nudges, hints and individual revelations about the kinds of learning that creativity can bring. These are the kinds of learning essential to our children as creative citizens of the twenty-first century.

I would like to thank the authors of this book: Shirley Brice Heath, Elke Paul-Boehncke and Shelby Wolf, as well as Brockhill Park Head Tony Lyng and his staff for their dedication and commitment to the Creative Partnerships Kent project. I want also to thank Brown University of Providence, Rhode Island, USA, who so generously supported this research through the work of Heath and thus enabled exchange possibilities across continents. Of special note is The Food Project of Lincoln and Dorchester, Massachusetts, USA. Their partnership with Brockhill Park School has made possible international exchange of students, staff, and, most important, future plans and ideas through which all parties will contribute to sustained creativity.

This book is a testament to the possibilities of creative change through partnerships. It also raises demanding questions about the educational needs of our changing communities to meet the necessary creative demands of our futures.

Reference


Photography

page VI © 2003 Creative Partnerships
Introduction

*Made for each other* addresses one of the most obvious challenges to result from the catapulting of creativity into the state system of education in England. Throughout the late nineties and into the first years of the twenty-first century, policies initiated and rapidly accelerated a call for greater creativity and more partnering from sectors and interests beyond the school into the learning lives of students in England. Creative Partnerships was launched in the autumn of 2002 as an Arts Council England initiative funded by the Department of Culture, Media, and Sport (DCMS). It was to be an inspiration for new linkages of people, resources, and incentives to work toward greater creativity in society.

As a national government-funded organisation, Creative Partnerships announced its commitment to “the positive development of young people through cultural practice and creative learning.” Through the aims of the programme, key attainments centered in developing “the imaginations and skills of young people through meaningful and sustained cultural experiences in the formal and informal education sectors” (www.creative-partnerships.com as of 2004). The intention was that the initiative would benefit from cultural practitioners as well as individuals from the creative industries, businesses, and local government bodies.

Creativity and world reputations

Not surprisingly, within regions initially selected to participate, the arts flew to the centre of focus. England’s heritage of world-famous artists, arts-linked physical spaces and historical events, as well as her world-class contributions to the arts understandably shaped expectations surrounding the synonymous linking of the arts with creativity. Moreover, Creative Partnerships came to be seen in 2002-2003 as an opportunity to infuse more arts into schools. Many educators, artists, and citizens felt that educational policies over the last decades of the twentieth century had been pushing the arts out of schools in favour of more regimented and test-oriented learning. Creative Partnerships provided much-needed funding for bringing artists back into schools more often, even if for only one-off performances or short-term residencies.

Yet, from their earliest discussions of ways to put into effect the policies of Creative Partnerships, some Creative Partnerships’ staff and local supporters recognised that the arts had no monopoly on creativity. To ignore innovation in business, science, medicine, and civic matters would short-change England’s students and lose the potential of creativity in schools and communities. In making these arguments, educators and civic leaders, along with Creative Partnerships’ staff, pointed to the long-standing contributions of England to creative endeavors reaching well beyond the arts. The following list
represents some of the areas in which regions of England have made particularly notable creative contributions:

- archaeology
- molecular biology
- maritime navigation
- biogenetics
- biotechnology
- magnetic resonance imaging
- software development
- environmental sciences

<table>
<thead>
<tr>
<th>The list of societal arenas in need of creative leadership included:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• the increasingly diversified labour force</td>
</tr>
<tr>
<td>• businesses in need of flattened hierarchical structures</td>
</tr>
<tr>
<td>• distribution of leadership in communities</td>
</tr>
<tr>
<td>• multiplied incentives for civic engagement</td>
</tr>
<tr>
<td>• meaningful structures for lifelong learning</td>
</tr>
</tbody>
</table>

These fields reflect only a start at the possible list of creative achievements for which English scientists and business leaders have received acknowledgment around the world.

**Society in need**

Beyond their recognised reputation for creative achievements in the past, many in England also felt the need to turn thinking more to the future. To do so could promise contexts and speed of change that would demand a broader spread of creativity. Even more important, signs of growing needs and voids pointed to the critical demand for creativity to reach deeply into organisational structures and ideologies. Business and civic leaders looking ahead wanted not only new ideas, but also new modes of operation and means of assessment. Only these would touch some core areas of societal need. [See Jupp, Fairly, & Bentley, 2001 for further evidence on these points.]

For example, leaders with private business interests, as well as those carrying economic and political concerns, emphasized the changing nature of the workplace.

A critical array of societal changes made many education and business leaders painfully aware that “lifelong learning” could no longer be an empty mantra. The real need for ongoing creative learning and innovative thinking loomed as a national concern. “Creative industries” came to be a term referring not only to those entrepreneurship based on artistic output, but also to the needed mode of operation within other types of enterprises. This confluence of factors called out for innovative and highly effective means of preparing future workers.

In short, society needed creative thinkers and learners accustomed to working across curricular boundaries and with organisational and communicational skills beyond those generally called for within secondary school curricula. Higher expectations of information-seeking and collaborative decision-making consistently marked social, environmental, and technological changes. Maintenance and extension of England’s world-class reputation for
innovation in business, not-for-profit sector organisations, and the sciences depended on finding creative ways to partner young learners with new ways of knowing and doing. Creativity had to go beyond innovative sparks or start-up ideas to implementation and on-going critique.

**Sciences and arts as partners in learning for life**

In the early months of public deliberation around possible iterations of “creative partnerships,” a number of civic and business leaders pointed to the necessity of including the sciences and technology as partners with the arts. Beginning such a collaboration seemed especially critical in the primary years, and many younger children benefited from highly innovative projects and programmes. Yet the greater challenge was to sustain any such partnership through the years of secondary schooling. By the age of eleven or twelve, and certainly by the teenage years, many young people had lost the edge of curiosity, fascination, and enthusiasm very young children exhibit in explorations of both the arts and sciences. Moreover, social concerns about appearing to be a nerd, social outlier, or just too academic or too artistic seemed to be challenges more difficult to overcome with older children than the lack of experience of younger children.

Several other factors stood as key challenges to bringing both the arts and sciences into secondary schools in long-term projects for adolescents. Unlike artists, who were often available free-lance to work within communities and most particularly within schools, scientists and technicians were not generally available for either volunteering or part-time work. Moreover, many individuals not trained as teachers felt much more comfortable working with younger children than with older students who may have already formed negative attitudes about both the sciences and the arts. And if any truly creative partnership between the arts and sciences were to happen, professionals from beyond schools would need to work directly within formal education settings alongside students and teachers as learning colleagues.

Many educators agreed that the sciences and the arts coupled as the most natural duo-contexts of creativity. To draw on the sciences (including technology) as companion to the arts raised special difficulties and indeed called for highly innovative responses by secondary schools. Many educators agreed that the sciences and the arts coupled as the most natural duo-contexts of creativity. Certainly, both arenas of human discovery and production depend fundamentally on highly creative ideas and sustained approaches to carrying these ideas forward for testing and critique. Yet how could these lofty goals that presented major logistical and ideological challenges to secondary schools be met in practise?

Teachers, administrators, and local education authorities were, in many regions of England, exhausted from responding to first one and then another educational policy calling for “change,” “reform,” “improvement,” “excellence for all,” and inevitably more INSET days and numerous add-on’s to the curriculum. They had little energy for considering ways to link sciences and arts, as well as professionals from these arenas of business life, into their already full schedules for each day.
The story of Brockhill Park Secondary School, Kent

This publication tells the story of one secondary school that took up this challenge in close partnership with a risk-taking and highly effective regional Creative Partnerships office. However, before their story begins comes a prefatory note of history about the partnership of this school with Creative Partnerships Kent.

From their beginning late in 2002, Creative Partnerships Kent included a small number of immediate office staff members, but their “creative partnerships” actively involved a wide range of thinkers and doers from throughout the region of Kent. Individuals from many professional and community interests joined together in the planning of initiatives, expenditures, goals, and desired outcomes for bringing greater creativity to learning throughout the region. Those involved in the planning included representatives from business, civic, cultural, and educational interests. Reflecting these interests, members of communities in the region came together during the last months of 2002 and into 2003 in highly participatory thought-provoking events and conversations. These think-together occasions helped build a base of understanding about the exploratory risks of partnering schools with creative models beyond the arts. The launch for Creative Partnerships Kent, detailed in the Foreword to this volume by director Anna Cutler, illustrates that event’s collaboration of business, dance, music, travel, science, regional civic interests, and international relations. This launch served as metaphor for the sustained patterns of learning that would be held out as optimal within the Kent region over the coming years of true “creative partnering.”

Brockhill Park Secondary School, the school of focus in this monograph, joined in the initial stages of planning and thinking about creative partnering throughout the Kent region, and school staff decided to take on a special challenge. Their staff wanted an examination of the linkages between the arts and sciences. In particular, they wanted to understand how “creative performance,” such as that usually associated with dance and other arts (e.g. theatre, visual arts, music, and writing), might differ from the creative and critical thinking they wanted their science students to exhibit. The setting of Brockhill Park Secondary School, as well as its student body and staff, offered numerous positives from which to work toward answers to questions about learning in the arts and sciences. Moreover, in the spring of 2003 Brockhill Park had completed a highly successful period of work with Robert Jarvis, a composer, scientist, artist, and learning theorist. Brockhill Park wanted to continue to work with Jarvis not as short-term visitor, but as resident within the school—stimulating, prodding, and thinking with faculty and students. Jarvis agreed to the residency at Brockhill Park, well aware of the facilities, strong links within the faculty, and history of commitment to innovation that the school offered. Moreover, Brockhill Park had, through some of its programmes, such as tourism and travel, a strong reputation for linking well with local businesses for student benefits.

Yet, like any secondary school, Brockhill Park presented difficulties in absorbing alterations to routines, authority structures, time schedules, and space assignments. In addition, secondary schools in East Kent, at the time of the start-up of Creative Partnerships Kent in 2002, carried the burden of both low national standings in educational achievements as well as widespread self-doubt among local educators and citizens. The challenge of inserting...
“creative learning” or even incorporating creative visitors for special events into the school calendar and spatial constraints was great enough. However, Creative Partnerships Kent and the educational leaders of Brockhill Park wanted much more: they wanted integration of creative learning within the arts and sciences throughout the learning climate of the school.

From this desire turned into action come the stories told within this volume. These stories carry the kinds of questions that leaders and teachers of any secondary school might ask about creative partnering with both the arts and sciences:

- What theoretical, educational, and human goals could justify attempts to cross the wide divide that generally separates the arts and sciences at the secondary level?
- How might students reflect any possible learning benefits—such as communication skills, conceptual sophistication, or understanding of self-regulation and system organisation?
- Where were the most likely niches of change within the tight bonds of schedule, space, curriculum, and staff experience within a secondary school?
- Finally, could the school staff justify having only niches of change within the school if the entire school could not reflect a real climate of change based on integrative bridging and partnering of arts and sciences?

These and other questions flow through this monograph. To be sure, there are some answers here as well, but to present answers as though these come easily and no questions remain would be naïve. Anyone who knows secondary schools understands the enormous difficulties of crossing curricular, structural, and time boundaries to bring about meaningful and sustainable change. All secondary-level educators know the needs that drive schools to create niches of alternative structures and means, albeit often temporary, to meet the specialised needs of adolescent learners. The stories told here of the connections between the arts and sciences and the power of these links to stimulate changes in student learning and motivation have to reflect a balance of questions and answers, achievements and hopes, as well as disappointments and setbacks.

Central to the examinations presented in this research monograph stand the parallel interdependent processes of creative—yet sustainable—learning that mark both the sciences and the arts. Cutting across these is the fundamental mandate of project-based learning—that which is not segmented and digested a priori and certainly not easily testable by simple pencil and paper means. Such learning depends on performance. Projects have to exist within the arc that runs from initial planning and preparation through practise and development to completion and meaningful assessment from professionals.

Such learning gives students responsibility for envisioning the projects, as well as undertaking research, and determining pace, quality, and outcome. Teachers work
alongside young learners as guides, information sources, critics, performance coaches, and network resources. Time, space, and access to models and information, as well as a climate of trust, respect, and curiosity, have to be in place for the project-based learning that characterises sciences and arts in action.

Of particular note here at the opening of this research monograph is the fact that the final chapter (six) tells a special story of change. Throughout the 2003-2004 year, the primary year of our research, an almost invisible aura of organisational learning nestled in amongst everyday activities, moved occasionally into meetings, and cropped up often in informal discussions among staff and students. This academic year was bedevilled by some tough problems of how time and staff could meet curricular demands, especially when the school initiated a new time schedule (seven 45-minute lessons with segmented short lunch breaks). Students new to the school found adaptation to Brockhill Park, with its big campus and rapid pace of classes difficult. Moreover, during this year, several much beloved long-time staff members were on extended leave.

But as the 2004-2005 year opened, a fresh breeze of change and sense of order and connection blew across campus. Chapter six lays out this story and some directions for further innovation that the continued organisational learning of Brockhill Park may bring.

The research reported here existed in 2003-2004 as only one of many infusions of energy, difference, and questioning that took place at Brockhill Park that year. Research questions raised by members of the school staff shaped much of the focus of the International Enquiry Network, a team of three researchers. Brockhill Park has many visitors, takes up numerous policy initiatives, and wins acclaim in several areas of the school’s life. Yet having sustained inquiry extend across a full academic year and into a second by a research team composed of a linguistic anthropologist, a systems analyst, and a literacy educator somehow felt different. These researchers, along with composer-in-residence Robert Jarvis, recorded as much as possible of Brockhill’s work toward integration of the sciences and arts into the life of the school.

The international researchers became known to students and staff who soon learned not to be shy about asking questions about the research. Some students and staff members added their own ideas for questions when they learned the research team focused on language and cognitive development. Some were especially eager to learn how an international research team might provoke exchange and connection in new ways. Some were especially curious about the particular emphasis of the research team on searching out parallels in learning creatively in both the arts and sciences. The regular and periodic re-appearances (approximately once a month for several days at a time over eighteen months) of research team members kept the work from being intrusive. We knew our presence had become somewhat “normal” and expected when students and staff greeted us by name, and we could, in turn, casually ask individuals about what they had been doing since we last visited.

The International Enquiry Network includes scholars from several disciplines. Their work with Creative Partnerships Kent was supported through international funding sources as well as Creative Partnerships Kent. The network’s members used their time at Brockhill Park to focus on the oral language, visual learning, and strategic thinking of young learners. In addition, they directed attention to analyzing the system of space and time usage, flow of
communication, views of authority and discipline, and disjunctures and connections between voiced ideology and stated goals and actual practices of the staff. Critical in this work was bringing some teachers, students, and, most particularly, resident composer and scientist Robert Jarvis, as deeply as possible into the inquiry. In various ways and to different degrees, some staff and a student research team joined in the research process as questioners and interpreters, as well as readers and respondents assessing the results as set forth in this monograph. Transcripts of formal classroom life as well as niches of project work supplemented fieldnotes, audio-recorded interviews, and close observations of nonverbal behaviours, particularly within dance studios and formal classrooms labelled “laboratories,” “studios,” or “rehearsals.”

Chapter one, *Parallels of learning in the sciences and arts*, sets out the case for the shared central processes of the arts and sciences. These start, of course, with keen observation and focused attention to detail. These processes, in turn, lead to envisionment. Further accumulation of details follows, along with recognition of the potential of unique combinations and patterns of change. Language demands flow through these highly interdependent aspects of learning in both the arts and the sciences.

Chapter two, *The secondary school as setting: Learning as a young adult*, introduces Brockhill Park Secondary School in Hythe, Kent, a school widely known for artistic innovation through the creative work of the Phoenix Centre for the Arts. More quietly and more often than not entirely unobserved and unnoticed, however, other places at Brockhill reflect similar patterns of behaviour: a campus centre for alternative learning, the agricultural sciences centre, travel and tourism courses, and student research initiatives. Introduced here are a few of these niches alongside the life of the arts, especially dance, at the Phoenix Arts Centre and their contrast to the “ordinary” time and space uses within the remainder of the school. Spotlighting a selection of frames for creative learning brings out the critical roles of space and time in any integration of project-based opportunities into the ordinary life of any secondary school. In addition, the glare of the spotlight exposes the structural challenges to bringing closer together the arts and sciences. This chapter also reminds readers of the “tough transitions” that the move from primary to secondary school brings for young people growing toward adulthood. Highlighted for special attention here are the desperate needs of older children and adolescents for meaningful work with adults. Focusing visual, conceptual, and communicative capacities depends ultimately on extended opportunities and rich practice with meaningful language.

Chapter three, *Studios, rehearsals, and laboratories as theatres*, explores the major physical contexts of creativity throughout the history of the arts and sciences. The “theatre” aspect of all of these depends on looking, even before listening. Time and space interweave in support of the roles of both the sciences and the arts as catalysts for change. Observation is the primary means of learning alongside guided attention from experts and monitored trials and collaborative participation.

Observation and direct participation contrast with the dependence of contemporary classrooms on direct verbal instruction and use of pre-designed worksheets and workbooks. Studios, rehearsals, and laboratories depend on observation, inspiration, and conversation that lead to exploration, greater attention to detail, further critique, and
The arts and sciences are dependent on observation, spatial movement by learners, and time and inspiration for thinking, planning, and reflecting. This recognition of the need for more information and practice. This chapter lays the groundwork for further chapters that demonstrate just how dependent the arts and sciences are on observation, spatial movement by learners, and time and inspiration for thinking, planning, and reflecting. Here again, language is key to moving forward from the initial creative spark to accumulating the information and skills needed to sustain creative learning into future needs.

Chapter four, Dancing together, turns the spotlight on dance as it emerges from studios in England and specifically the Phoenix Centre for the Arts at Brockhill Park. Here the subject of art itself as context for innovation comes under scrutiny through a comparative analysis of the choreography and performance of young dancers. The language in use as dancers learn together lays open the fundamental scientific aspects of this work, dependent on embodied understanding of physics, mathematical concepts, and aesthetic principles. Readers see the calibrated nature of talk in the project work of dance as science as well as art. Given special attention here are several “lessons” guided by teachers in dance and the sciences as they support young learners in project-based work, practise, rehearsal, and critique.

Chapter five, Changing systems: New places, times, and learning leaders, takes the lens of examination further out to the full system at Brockhill Park and then moves back into spatial niches such as studios and rehearsal spaces. Structural, temporal, and spatial constraints, as well as segmentations among students created through curricular divisions, often dash hopes and probabilities for success for staff and students alike. This chapter examines how some of these constraints were moved about so that creative learning would find positive niches of support and nurturance. Trust and respect—flowing back and forth between staff members and students—come only with supreme effort and often at the expense of expectations of the usual roles of teacher and student. Yet when these roles broke through into respect and engagement in joint project work, the learning lives of students took on new dimensions.

Chapter six, The growing initiative: Living organisational learning, moves into the academic year of 2004-2005. Changes, visible and invisible, permeated the new beginning. This chapter raises questions about the role and incentive of research, particularly that of students, and the influence of simultaneous directions of change going on within a secondary school. Highlighted here is the layered integration by a group of teachers of a brief international exchange between Brockhill Park and The Food Project located in Boston, Massachusetts. This exchange generated an action project to bring together creative learning in the sciences and arts, while addressing needs of younger students and revitalizing the farm’s role and a place for the agricultural sciences and possible future entrepreneurial development in the life of the school.

Secondary schools, in contrast to infant, community, and primary schools, rarely find themselves in the spotlight as creative centres, except through the work of particular students, departments, or events. Read The Times Education Supplement, and reports there highlight the singular, particular, and individual. Rarely do splashy news stories feature systems of project-based learning or “creativity,” “innovation,” or “inspiration” that flow into
the critical demands of transition and human development for young learners in secondary schools. This volume seeks to illustrate a secondary school sensitive to the dilemmas and struggles of learners during early and late adolescence. In particular, this school and the research team looked intently at young learners to understand their oral and written language development, their potential depth of feelings for and about learning, and their powers of observation turned on themselves and their learning environments.

The research reported here illustrates how encasement of these learners into the narrow confines of the role of “student” limits the abilities of society and school staff to see their possibilities. Learners beyond the primary years come easily to be viewed as “problems” or “challenges” rather than as partners or researchers. The authors of this report reflect the view that “creative partnering” begins and must be sustained through partnering with young people at the secondary level as learners with adults and with purpose and responsibility. The goal of the authors here is to provoke serious consideration of what the learning of creativity through the arts and sciences can look like with youth as partners. We need these learners with us to infuse society with hopes, skills, and promises that result from innovative energies, tenacity of pursuit, and commitment to the life-long learning of citizens.

References, Introduction


Photography

page x © Roy Smith 2005
page 4 © Anna Cutler, Creative Partnerships 2005
page 7 © Brockhill Performing Arts College, 2004
Chapter one

Parallels of learning in the sciences and arts

Looking, thinking, and talking

The arts and the sciences co-exist in the learning lives of every human. This duality begins for infants and toddlers even as they learn to bounce or throw a ball. Children live the combination of arts and sciences when they execute their first wild gyrations across the floor or thrust a crayon onto their first piece of paper. They embody the physical laws of motion; they gesture and grimace to engage onlookers' attention. They add sound and facial expression to push for deeper effects on their audience.

Walk into an infant or primary school as a visitor. A scene such as the following is likely to greet you.

It is spring, and the pupils have begun to notice that they do not have to wear their gloves or hats when they go out to play. The teacher shows the pupils that bulbs are beginning to sprout just beneath the hedges at the side of the playground.

Inside the classroom, there's a buzz. The pupils know that when they come in from outdoor play, they will themselves take part in the pageant of life and rebirth going on around them. They are growing and studying plants, and they get to “play with seeds” that will bring them flowers to enjoy in their classroom and eventually take home to their mums. Or the culinary arts work of their studies will bring them spring carrots to add to a soup pot in their classroom.

The duality of arts and sciences continues from the infant and primary schools largely through study of close-up everyday phenomena. But young children also find fascination in the mystery and artistry of distant elements of the universe such as the stars. Throughout their studies, children observe, record, consider, and examine events in terms of conditions and possible causes. They respond emotionally. They learn to sketch or animate differences, and through their participation, they develop understanding of aspects of the sciences, such as planting seeds, tending plants, and checking conditions that make plants flourish or wither. They may also both study and create still-life drawings of fruits and plants, capturing intimately, as other artists have for several hundred years before them, their infinite beauty in shape and colour, light and shadow.

Days of planting seeds and setting out containers for germination under different circumstances take on a unique life in the primary school classroom. Chairs are moved back and tables grouped; water, plastic cups, boxes of sand and seeds, and small shovels take their place on tables around the room. Special instructions follow from a local gardener who is a friend of the teacher. He shows photographs of his flowers from August of last year. Then he sets up the slide projector to illustrate stages of the development of seeds, rootings, and grafts—all of which help plants propagate or multiply and develop and generate flowers and seeds or spread their roots. The group then talks about all the
possible influences that could alter their plans for a garden: weather, rodents, bugs. The children brainstorm how they can plan to avoid or minimise the effects of these possible causes of trouble.

The children put much thought and talk into planning their garden just outside their classroom window. In doing so, they have set out questions they need to ask of experts, supplies they must obtain, and steps through which they must move to carry out the full process from seed to harvest. The promise of end results motivates the project: everyone feels the sense of power that will come from helping things grow and spread. An aesthetic pleasure in product and process fills the heads of the children.

All of these bustling activities depend on looking, thinking, and talking. Most important, children see themselves as planners and thinkers, acting in the role of scientist — considering effects caused by variables that can only partly be accounted for or predicted. They delight in the aesthetic as well, relishing storybooks about plant life and the creatures that depend on its abundance. Tales of indefatigable but appealing competitors for their garden, such as the hero of Eric Carle’s (1979), *The Very Hungry Caterpillar* or Beatrix Potter’s (1902) *The Tale of Peter Rabbit*, carry dual messages surrounding the aesthetic as well as the scientific.

As children grow older and move forward in schools, projects that demonstrate the dualities and companionship of sciences and the arts diminish in number. The curriculum becomes increasingly segmented by subject. Sets of skills as well as bodies of information line up in hierarchies of importance. Arts and aesthetics slip further and further away from the sciences, just as project-based learning moves primarily into “extra” credit or outside the ordinary lessons of the divided school day.

Keeping arts and sciences together for long-term, project-based learning becomes more and more difficult to accomplish during the years of secondary schooling. The drive toward demonstrating achievement levels through tests created outside the learning environment pushes aside the risks of projects. Particularly in communities seen to be struggling economically, schools fear experimentation that could diminish time for memorisation and practice essential to high performance on tests.

However, adolescents have ways of insisting on what they need and demanding attention to their capabilities for doing the unexpected or extraordinary. Within numerous out-of-school settings and in a surprising number of school environments, young people demonstrate that they put arts and sciences together everyday. When given responsibility and respect for these capabilities, they reveal repeatedly that they take on a vital agency when they plan ahead for something they themselves must do. In particular, they relish the risk of working toward the unknown.

When adults join adolescents in the risk of projects that combine arts and sciences, accelerated involvement in and enthusiasm for learning follow. Soon learners — old and young — find themselves engaged in the creative process propelled by project-based work grounded in the expectation that what is learned has to be passed on.
Among scientists, it is commonplace to link their ways of thinking, envisioning, and planning to the fact that the arts figure so prominently in their lives. Both artists and scientists navigate the world in highly similar ways: picking up details, storing them without an obvious sense of their immediate use, being alert to the potential of accidents or the unexpected, finding solace in both order and chaos. These preferred ways of “picking up” learning make formal educators nervous, for they are not traits easily taught, and many would see them as highly undesirable. Nevertheless, time and time again, both artists and scientists portray these behaviours as essential as they reflect on how they learn. The following boxed list of essential parts of their creative processes begins to suggest parallels.

What makes creative endeavors in the arts and sciences come about?

- Holding onto deep interests that lead to a sense of quest (which, in turn, always leads to questions)
- Figuring out basic techniques of looking carefully and taking apart your interests
- Trusting in incubation — giving ideas time to linger
- Hoping for accidents or the chance to come upon something unexpected, previously unseen

The process by which creative ideas move from initial spark to action, invention, or discovery for both the arts and sciences turns out to be highly similar. Yet the parallels of mental work required may be most evident in the initiation of ideas.

From curiosity comes initial spark; what follows usually includes inquiry, recurrent persistence, and experimentation. Both the sciences and arts call for investment in past experiences — remembering what one has learned that may now apply or rethinking old habits and ways of doing things. Most important, follow-up of initial ideas in both the sciences and the arts calls for looking and looking again. The British physicist David Bohm pointed out that “history indicates that a failure to understand that creativity is essential to the whole of life can lead to a ‘mechanical, repetitious order’ in society at large” (Bohm, 1998, p. xxi). Bohm and many scientists see the restriction of creativity to any particular discipline as evidence of the “internal decay” of a society that comes with the dissipation of the creative impulse. Creative thinkers search for combinations of ways of knowing—testing effects of environmental features, such as light, temperature, or the unexpected, as well as envisioning different kinds of possibilities in a way of working.

Too often the material objects of teaching as well as the process of “training” teachers set forth the myth that science offers one way of seeing and knowing, mathematics another, and the arts of pictorial and literary representation yet other ways. Textbooks, tests, constraints of school schedules, and teacher education programmes now often separate the arts from scientific substance. Only occasionally will the arts be included within the study of science and then usually only as illustrative medium. Moreover, the moral incentives, as well as personal likes and dislikes, that motivate artists and scientists rarely enter academic discussions of seeing and knowing. Most certainly, learning to be a good teacher almost never involves encouraging young learners to “hope for accidents.”
Hoping for accidents

True scientific knowledge.....demands abandonment to the very life of the object. (Hegel, 1807/1967, Preface to The Phenomenology of Mind).

Leaving aside the matter of “true,” we recognise that the philosopher Hegel abandons transmission from others as the only way to know something. We are urged into the “very life of the object,” and that means into placing objects into projects and plans, or into scenarios that we imagine and create based on our prior experience.

This chapter and others of this research monograph suggest that we devote considerable effort to thinking about how older children and adolescents yearn to create lives of knowing with and for projects, other learners, and discoveries. They want to make learning part of the stories they can tell of taking risks, moving into new territory, and challenging authority. A big part of wanting to find accidents in the process is that these make the narratives exciting, entertaining to others, and, perhaps most important, fruitful for the learner during quiet periods of reflection.

Narration carries knowledge because it animates, giving us actors with agency or a sense of will. These actors go about doing things and also wondering what will happen to change the scenario if they take certain other actions. The psychologist Jerome Bruner (1986) tells us “…the humanities have as their implicit agenda the cultivations of hypotheses, that of hypothesis generating. It is in hypothesis generating (rather than hypothesis falsification) that one cultivates multiple perspectives and possible worlds to match the requirements of those perspectives” (p. 52).

Here in the grounding of hypothesis-generation, we have the fundamental parallel that makes the language and cognitive work of creativity in the sciences and arts made for each other. Some call this “the believing game” or the act of “embracing contraries” (Elbow, 1986). When the “scientific method” is invoked in educational settings, it is spoken of entirely in the context of the sciences. Hypothesis generation, multiple perspectives, and fundamental curiosity appear to have no key roles elsewhere.

Yet the essence of this “method” is hypothesis generation, constant comparison, and sustained puzzlement and curiosity about what can be. These “methods” are those of artists as much as they are of scientists. But most artists and many scientists tell us that much of what they do is “hope for accidents.” Terms such as “insight,” “intuition,” or “happenstance” as well as “unexpected” and “like a flash,” run through the talk of scientists and artists who are asked to explain how they “do” their work. This “doing” is what most observers think they are watching when they see scientists or artists moving objects, tools, and rearranging parts and time sequences around their topic of focus. Yet scientists and artists talk most about the work that goes on in their heads—the mental work that prepares them to catch the accident. As one artist described the process, “it’s not so much that I’ve created something as that I’ve caught something” (Rosemary Lee of Middlesex University, artist participating in ESRC conference on creativity, July 5, 2004).

Scientists and artists talk most about the work that goes on in their heads - the mental work that prepares them to catch the accident.
Those who work with acknowledgement of the power of accidents generally admit certain features of their breakthrough thinking: roving, detecting, reframing, and decentring. These four key operations have been identified by psychologist David Perkins (2000) who has spent a career studying creative individuals across disciplines and fields of investigation. [See Heath & Wolf, 2004 for further discussion of how looking for accidents and digging into the meaning of these generates for very young children the ability to distinguish between actual and possible worlds.]

“Roving” takes the mind on a wander. Exploring widely and deliberately in new or out-of-the-way areas amounts to mental roving, letting the mind wander away from the immediacies into other realms. “Detecting,” “reframing,” and “decentring” often appear in teacher’s directions given to students. But these also often come with the teacher’s expectation that the end result of these three will be the discovery of something the teacher already knows. Artists and scientists would argue that revelations often appear in the act of discovery, finding the unexpected, and seeing the accident for where it can lead, rather than as terrain already found by another. All these terms mean letting go of control and a sense of total predictability. Going out of the centre, away from the known and customary, and often away from procedures to which one has become accustomed, provide the most fertile possibilities for accident. Narratives of scientific breakthroughs tell us again and again that working away from the centre for a while brings freshness, deeper insight, and new revelations. It is worth considering just why scientists who find themselves making no progress on a problem will often take time to go away from their ordinary setting to view nature, visit art galleries, or listen to music. The laboratories of famous scientists, such as that of the Copenhagen School of Physics, which included Niels Bohr and Werner Heisenberg, have been noted as having a certain “joy in the contemplation of nature that could lead at times to flippancy.” Many enjoyed music as well as pictorial art, seeing the potential for searching out patterns, sensing dissonances, and looking behind and beyond (Root-Bernstein, 1989).

Writers and other creative artists talking of their art, speak of how the accidents and unexpected revelations and discoveries must, in the end, be brought under the control of the craft of the art form. This process of extremes from hoping for accidents to exercising control often amounts to a sequence that artists describe as enabling them to find “a way out” of an uneasiness with the way things are. They talk of their preparation for the turn to control as “finding the right moment’ (Hennessy & Amabile, 1988).

It is instructive to hear the strategies for pioneering scientific research that some of the most prominent scientists of the late twentieth century offer. They ring in parallel to prescriptions given by artists:

Learn well and deeply, experience life itself; remember that “chance favors the prepared mind....” Direct action is always preferred over indirect. Be different in your experiences, hobbies, philosophy, and goals. Learn the experiences of the master; read biographies and stories (of science and of literature); learn different styles of knowing from them. Try many things; never be afraid to cast your line in various parts of the river. “Do what makes your heart leap!” and remember that joy and play, along with commitment, go together with discovery. Think in unexpected ways, and don’t be afraid to think big. Look for novelty, and remember that truth comes often out of error. (Root-Bernstein, 1989, pp. 410-20).
Within formal education, it is difficult to play out these recommended mergers of art, aesthetics, emotion, reason, and experience. We have somehow enfranchised the view that rules and fact must come before discovery and will be the primary learning process for all that we need to know.

There are those who tell us that facts now double every couple of years, and for those with access to technology, their access to facts more than doubles with each passing year. Clearly, just “learning the facts” is no longer possible for any learner. We must now question seriously old academic habits based on different domains of facts. We need instead to determine ways to enable students to learn to be discriminating, eager, and lifelong learners for whom curiosity, discovery, and alertness can go hand in hand with the learning of rules, formulas, techniques, and means of making judgments.

We can no longer segment our choices of experiences and areas of knowledge into arbitrary domains or different arenas of facts. Instead, projects of learning and doing, critiquing and refining must replace these, and to the extent possible, be grounded in ways to take advantage of local resources.

Education is now more than ever looking for multiplying possibilities of knowing. In England, the governmental project of Creative Partnerships set out to multiply incentives, inspirations, and development of creative learning. By the opening of the twenty-first century, building upon wonder, curiosity, and imagination became characteristics to couple with the practice, observational skills, rigor, patience, and discipline that arts and sciences depend on along the way. If the claim is increasingly to be for the creative rather than the uniform, learners must gain practice in searching for and helping build possible worlds. We should note that members of the Treasury are ever on the lookout for innovation. Higher education admissions committees make clear that they are looking for unusual and challenging students who know how to think outside the expected routines of learning and doing. Business leaders constantly demand a workforce that knows how to think flexibly and undertake risks.

All of these means of learning and doing denote active problem-identifying and solving as well as searches for possible worlds. To be on the lookout for the possible requires active learning that stands apart from passive learning about actual worlds that have already been delineated and are now being narrated by others, such as teachers and textbooks. Widening the limits of what is perceived to be possible generates scientists and artists as well as innovative science and art. Neither the language of the two disciplines nor their ways of knowing stands far apart. As this monograph illustrates for the arts and sciences, to embrace a project is to embrace an eye for observation, a mind ready for possibilities, and a heart open for the learning to come.

**Collaborating around the unknown**

To hope for accidents and to keep a keen eye out for the unexpected must join together in any exploration of the unknown. To launch into that which is not known can benefit most when others come along to think, look, listen as well. High-energy physics laboratories,
dance companies, theatre companies, as well as laboratories of neurobiology, attest to the power of collaborating around the unknown. Examples of some of the latest advances in the sciences and arts give ample testimony of the need to bring others along in creative learning.

For older children and adolescents of secondary schools, such collaborating, ideally across an age range of at least three years spread, carries special importance. Peer influences limit the kinds and degrees of academic or investigatory risks young people will take into subjects such as the sciences and arts. Being acceptable and finding friends who think one is not “different” or “weird” means everything to an older child, particularly during the difficult and often traumatic transition from the primary school onto the seemingly huge and strangely segmented secondary school turf.

Taking risks in collaboration marks the history of science even more than the arts. This fact merits close scrutiny by those who would overlook certain “unremarkable” or “less able” students as unlikely to move forward in science careers. Indeed, it is often the seemingly “dull” or “diffident” student who enters science, for the ordinary lessons of science do not engage curiosity, inquisitiveness, or high risk-taking and out-of-the-box thinking that such learners may have. In combination and collaboration, such students carry even greater potential.

Throughout this monograph are demonstrations of ways that teachers, administrators, and students — all working as learners — enter unknown territories. Challenge, competition, calls to uniqueness and difference mark their discourse as well as their ways of interacting with problems and possibilities. In many of the projects described here, learners often juggle multiple tasks and think about ways of changing things at the same time. These learners demonstrate risk and uptake, commitment and connection. The power of risk holds roles and rules together for project-based learning that seeks to explore the genuinely unknown. Much of schooling depends on leading students to learn that which is known and to display that learning in written form to a teacher who already knows what is displayed. Any communication theorist will respond to this situation by pointing out that communication of information, argumentation, and persuasion always catches on best when new or unknown and unexpected information or interpretation results. The following box lays out the underlying social and cognitive factors that come along with collaborative learning that seeks to uncover the unknown or unexpected. Those social features listed on the left give rise to the cognitive patterns on the right.
Learners, often driven by curiosity, find the contexts of projects emotionally charged. For older students and young adolescents, especially, the idea of winning in this risk of learning the unknown is especially appealing. Within these searches, abstract concepts, such as *interdependence*, *categorisation*, and *parallelism* come to be very concrete. Indeed, this point is demonstrated in later chapters through the work of the Brockhill Park student research team as well as in the projects, artistic and scientific, undertaken by students and teachers working together. Moreover, the school-wide structural changes that came about in the autumn of 2004-2005 followed on the organisational learning that prevailed throughout 2003-2004 (see Chapter six).

Moving from the unknown to the newly known sometimes brings with it an “aha” experience. The simultaneity of this kind of cognitive and emotional break-through may often come when we see ourselves placed in new roles demanding unfamiliar performance outcomes. We should note here that “performance” is, among learning theorists, often seen as synonymous with “understanding”:

…an understanding of a topic is a flexible performance capability with emphasis on the flexibility. In keeping with this, learning for understanding is like learning a flexible performance—more like learning to improvise jazz or hold a good conversation or rock climb than learning the multiplication table or the dates of the presidents or that F=MA. (Perkins, 1998, p. 40).

In these situations, it is often the micro-moves of learning that we have to gain before we can show appreciable advances in what we do or how we show what we have learned. One does not “just learn” to play jazz or hold conversations successfully; one listens, reflects, creates internal practice, and observes. These are all in tiny imperceptible steps toward gaining understanding. We lay out here just a few of the ways these micro-steps move learners along in project-based learning.

Time management, a constant area of complaint against young people, has to come to the forefront in collaborative seeking of the unknown. Deadlines have to be involved always with creative learning. If these are aborted, projects may not move beyond initial planning and early phases of practice. Thus, the need to organise, hypothesise, plan, and reconsider possibilities against probabilities of time, supplies, and process must remain ever present.

Repeated modeling helps to make concrete not only abstract concepts, but also a sense of

<table>
<thead>
<tr>
<th>Social Features</th>
<th>Cognitive Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-affect, emotion-charged peer contexts.</td>
<td>Extended opportunities to build hypotheses, plan for future events, and assess individual and group achievement.</td>
</tr>
<tr>
<td>Long-term, high-risk engagement with abstract concepts that become activated concretely.</td>
<td>Repeated modeling of what it means to move from beginner to intermediate to expert.</td>
</tr>
<tr>
<td>Demand for empathy that enables building a theory of mind.</td>
<td>Realistic risk with individual and group consequences.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Features</th>
<th>Cognitive Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-affect, emotion-charged peer contexts.</td>
<td></td>
</tr>
<tr>
<td>Long-term, high-risk engagement with abstract concepts that become activated concretely.</td>
<td></td>
</tr>
<tr>
<td>Demand for empathy that enables building a theory of mind.</td>
<td></td>
</tr>
</tbody>
</table>
internal timing. Illustrated particularly in Chapter four are several ways that students and
teachers stepped into the course of activities to call “time” and to re-juggle their work with
awareness of looming and multiple performance deadlines, as well as sudden realisations
of the need to include “something else” at the last minute.

The arc of performance includes planning and preparation that build toward practice,
trials, and professional consultation. Reflection and deliberation enter into both of these
phases of learning and continue through the final phase into performance and
evaluation/critique. All the components of this arc move performers and learners toward the
inevitability of a deadline for performance, exhibition, or production.

Along with the iterative process of practice and critique comes a sense of just how
powerful failure can be for learning. Critique moves along therefore apart from evaluation, which generally comes
only at the end or in the “test”. Ideally, critics work with
learners along the way as friends, while others (e.g. some audience members for performances) will be
strangers who care only about the quality of the outcome. But the critique of these strangers (such as
music or dance critics) move the learning along, for they
always assume that their words as authorities will add to
the body of knowledge of performers and will be taken on
as next steps toward another performance. The words of
strangers who offer critique stand out as highly important
to young people who see their involvement as high-risk and the response of tough critics as
sending the message that what was tried was worth the risk.

Critique looks at what is happening as the project moves along, but
evaluation often comes too late to inform the process. The value of
critique lies in its power of investment toward
learning for the next project.
School culture allows us to examine critical ways in which the “instructional” climate of formal education differs from “natural” adolescent ways of taking up learning on their own. Adults create structures, documents, and punishments that appear to young learners to be narrowly motivated and linked to doing well in lessons. Thus, punitive grading, negative reports home, or censure from school staff often do not result in the effects intended. Yet often the intentions of adults are well-meaning; they simply want young people to internalise the need to manage their own risks. Yet external pushes and pulls may not matter greatly to all students. Ultimately, learning to manage one’s own gains in skills and knowledge means building internal processes and increasing facilitation in communication with others willing to offer critique along the way. Doing so comes in micro-moves: coming to project work prepared and on time, reporting having seen something similar to current work elsewhere, etc.

Searching collaboratively for unknowns and emphasizing the power of performance must rely on real risk if their processes of learning are to become internalised by young learners. Following each phase of collaborative creative learning will be the call for explanation, the certainty of critique, and possibly even the challenge to move forward to pursue the unknown even further. In a supportive environment in which others can come along and still others show interest in the outcome, trying something new constitutes an appealing risk for the young. Still, by the time young learners reach secondary school, they have often been so forced into learning what is already known that they do not trust the challenge to “go out there and think on your own or find out.” In essence, staff members have to work hard to ensure that scaffolding, partnering, and acceptance of collaboration will be accepted in the push to go out there “on the edge” and to take the risk of collaborating and performing within creative learning.

**Shaping the future through creative learning**

What is creativity? To define this concept and try to lock it in is to defy its very essence. However, for several decades now, scholars across fields have studied what creativity means—as an individual characteristic (and often the defining element of a personality and identity) and as a group or organisational feature. The research of these scholars reveals important differences among creative individuals and groups that come together with goals for innovative outcomes. In truth, creativity has been defined by scholars for hundreds of years. Creative learning opportunities have special importance for older children and adolescents whose bodies are emerging in new and unexpected ways. The embodiment — literally — of creative changes go on within them and mark them externally as well. Often the mind or the ability to reflect, absorb, and respond to these changes cannot keep up with the bodily changes and the resultant hormonal shifts and societal responses.

Ironically, these years are just those when schools and often parents clamp down on young learners and restrict their possibilities for creative thinking and moves of the mind. Later language development is critically and vitally needed, especially that related to stating how situations give rise to problems, and only through consideration of multiple solutions can one assert control over possibilities. Innovative, supportive, cutting-edge opportunities take young learners into realms that have not been explored but that give essential practice and
models for considering both mental and bodily changes and their meanings for judgment and behaviour.

The irony is that primary teachers, and indeed scholars of early child development, stress the power of creative learning environments for younger children much more than they do for older children and adolescents. Yet human development studies of individuals beyond the age of eight and well beyond the teens portray their learning needs as just those that characterise creativity at work. The box below lists some of these learning needs.

Except in the rare cases of signs of early displays of exceptional talent in young children, creativity is fed by an amassing of disparate kinds of information, and more often than not, such collections can appear to be highly unrelated in any discernible way. Older children and teenagers enjoy collecting the shocking, unexpected, and unrelated bits of information, and they drop these in at what teachers and other adults often regard as the most inappropriate times, such as in the midst of a well-planned lesson.

Creativity generates and is generated by dissonance and disjuncture or disconnects, so far as anyone but the creator can see. And creativity co-occurs with long periods of being alone, often spent doing activities seen as not worthwhile by others or, put simply, a waste of time and energy. Such preference for being a loner, along with a fascination for the dissonant or incongruent, often results in isolation or selection of friends and intimates who are similarly set off from peers or the norm of the crowd.
Creativity has a paradoxical status and creative individuals often feel they suffer as a result. Older children and adolescents moving into young adulthood similarly bear paradoxical status. While society values and celebrates individuals and certain groups said to be “creative,” the behaviours of highly innovative individuals are rejected, disdained, and often punished. While society values the young adult who is settled, predictable, and a continuing learner, the exploratory processes that lead to a sense of stability and security for young adults are much maligned, distrusted, and viewed as needing to be controlled. Somewhere within every type of creative representation—whether person, product, or performance—there is an invisible line that may seem to some onlookers to extend too far outside the norm.

Children and young people struggle to find this line. They always hope that a trusting, respectful adult will draw it for them while also holding their hand when they get too close or step across. When such adult support is absent, the young push, bend, and often try to break the line through high-risk behaviours that amount to tests of the line. Such tests and their societal and emotional consequences often deflect, deny, or destroy the potential of creative individuals. This is why it is so critical for secondary schools to embrace creative project-based collaborative learning. What is to be gained for adolescents amounts to groundwork for risk management, communicative means of finding support for one’s work, and negotiation skills to help sustain family and civic life. A society wishing to shape the future through creative learning has to look to its secondary schools as essential sites of this transformation. For that, we now turn to the story of Brockhill Park School — a secondary school where teachers’ goals and interests include those expected: literary genres, mathematic algorithms, scientific principles, artistic techniques, and the facts and figures of history. However, these teachers also help their students create their own new kinds of histories. The next chapter shows that creation in process.

Groups that work collaboratively toward a creative product or performance build from what has often been substantial periods of isolated thinking by individual members. Creative groups, as distinct from individuals, are often marked by:

- a tendency to work best under very tight and high-risk deadlines a sense that their outcome – good or bad – will have meaningful consequences for all members and the group
- the need for a strong focus or sense of common intent that will get the group moving and keep it going through rough interactional times frequent calls to critique of the potential outcome as well as the process; a back and forth pace to the progress of plans or project development appears as a primary way of working
- a dependence on the richness provided by inclusion of widely disparate types of information and skills represented by group members.

Groups that work collaboratively toward a creative product or performance build from what has often been substantial periods of isolated thinking by individual members. Creative groups, as distinct from individuals, are often marked by:

- a tendency to work best under very tight and high-risk deadlines a sense that their outcome – good or bad – will have meaningful consequences for all members and the group
- the need for a strong focus or sense of common intent that will get the group moving and keep it going through rough interactional times frequent calls to critique of the potential outcome as well as the process; a back and forth pace to the progress of plans or project development appears as a primary way of working
- a dependence on the richness provided by inclusion of widely disparate types of information and skills represented by group members.

Creativity has a paradoxical status and creative individuals often feel they suffer as a result. Older children and adolescents moving into young adulthood similarly bear paradoxical status. While society values and celebrates individuals and certain groups said to be “creative,” the behaviours of highly innovative individuals are rejected, disdained, and often punished. While society values the young adult who is settled, predictable, and a continuing learner, the exploratory processes that lead to a sense of stability and security for young adults are much maligned, distrusted, and viewed as needing to be controlled. Somewhere within every type of creative representation—whether person, product, or performance—there is an invisible line that may seem to some onlookers to extend too far outside the norm.

Children and young people struggle to find this line. They always hope that a trusting, respectful adult will draw it for them while also holding their hand when they get too close or step across. When such adult support is absent, the young push, bend, and often try to break the line through high-risk behaviours that amount to tests of the line. Such tests and their societal and emotional consequences often deflect, deny, or destroy the potential of creative individuals. This is why it is so critical for secondary schools to embrace creative project-based collaborative learning. What is to be gained for adolescents amounts to groundwork for risk management, communicative means of finding support for one’s work, and negotiation skills to help sustain family and civic life. A society wishing to shape the future through creative learning has to look to its secondary schools as essential sites of this transformation. For that, we now turn to the story of Brockhill Park School — a secondary school where teachers’ goals and interests include those expected: literary genres, mathematic algorithms, scientific principles, artistic techniques, and the facts and figures of history. However, these teachers also help their students create their own new kinds of histories. The next chapter shows that creation in process.
References

Hegel (1807/1967) *The phenomenology of the mind*.

Illustration
page 15 Illustration from “The Tale of Peter Rabbit” by Beatrice Potter © Frederick Wayne & Co. 1902.2002

Photography
page 12 © Turner Contemporary. Courtesy Turner Contemporary
page 19 © 2004 Anthony Hall
Chapter two

The secondary school as setting: Learning as a young adult

Tough transitions

Deep in the history books of England is a story that has its origins in Saltwood, the village just down the hill from Brockhill Park Secondary School. The Saltwood castle, located only a few kilometers from the school, was the overnight stop on December 29, 1170 for the assassins of Archbishop Thomas Beckett. The three men that history would later vilify spent the night in the castle on their way to doing their dastardly deed at nearby Canterbury Cathedral. Today Saltwood Castle is a private residence, and few of the summer visitors to the nearby seaside town of Hythe or to Saltwood know of the local castle’s role in history.

Just up the hill from the village of Saltwood, a manor house was built five hundred years after the villains stopped overnight in the nearby castle. As we enter the seventeenth-century manor house in September 2003, we step into new dimensions of history-making. The administrative offices of Brockhill Park Secondary School are now located in the manor house, and the school sits next to historic Sandiland Park, prominent on ancient maps of the Hythe area. Today the park, like the manor house, has been renamed. Now called Brockhill Park, its greens align with the school grounds. Walkers from near and far come to the park to enjoy the rolling hills, forest paths, and meadowland open spaces.

At the edge of this bountiful landscape, a small non-descript sign along the road announces one’s arrival at Brockhill Park School. At the top of a small hill along a gravel driveway, the campus seems to open up. To the right is a large football field surrounded by an open expanse of grassland dotted with large shade trees; on the left is a cluster of several low buildings. Soon the driveway leads to a car park that sits in the centre of a collection of buildings. Most noticeable is the “manor house,” a rambling two-story brick and stone building.

While parts of this building date from the seventeenth century, other bits have been added along the way. Now serving as the central office and administrative hub of the campus, the manor house includes older portions closed off to public use until restoration can take place, as well as newer sections that serve as offices, staff room, and central reception area for school visitors. The front hall of the manor house opens directly off the large car park that is surrounded by six other buildings, all clearly added in recent years. Each morning, between 8 and 8:30 a.m., this car park fills with teachers’ cars as well as half a dozen buses that bring students from all over East Kent to Brockhill Park. Once the students disembark, the buses leave to return again shortly after 2:30. Behemoth monsters that seem to dwarf all nearby buildings except the manor house, the buses sweep into the school drive, load
students, and vanish again within what seems a matter of only a few moments. Quiet descends on the campus after this rapidly paced frenzy of activity each day.

Entry into the administrative offices of the manor house offers only a hint of the paradoxes of contemporary bustle and historical past of the Brockhill Park surroundings. Though the entry to administrative life at Brockhill Park comes through an up-to-date record of student activities and the learning life of the campus on a computer screen, further passage into the building reveals sections that need historical reconstruction. Closed to any entry, these sections invite attention and announce the long history of both the school and the adjoining park that includes both agricultural land and forest. Around the campus lie nineteen scattered buildings, most devoted to several purposes. For example, the building that houses the Tourism Department also includes graphic design classrooms and the communications sciences. Just across the way is the building that houses modern languages, a sixth form centre, and offices for counsellors and advisors. Also surrounding the central car park are several outlying mobiles and temporary constructions — all evidence of continuing growth and expansion of services. Two of these house the Judith Centre, a programme of alternative learning (see further discussion in Chapter five). Yet another mobile provides space for musical groups to practice away from classrooms.

Just to the right of the manor house is an opening through a fence that surrounds part of the school farm. Stepping through this opening is like crossing into another world — certainly one quite distant from the usual expectations of a secondary school. Here guests immediately meet some of the farm’s animals and find students at work tending cows, chickens, sheep, pigs, and goats. Students move back and forth among the sheds and barn areas, checking on the prize animals, or newly born piglets or rabbits, or posting notices on the barn’s make-shift bulletin board. Deep within the maze made up of sheds, small barn, and corridors of stalls are areas set aside during lambing season or for special events, such as the arrival of piglets. Beyond these buildings, pasture and grazing lands, as well as areas for future crop development, stretch toward the horizon. All about the farm’s cluster of buildings, student projects seem in evidence, and students move about easily with adults — all orchestrated by daily chores as well as seasonal events. Inside the main classroom are glass enclosures for exotic reptiles and other small animals. Here again, posters, photographs, and notices announce activities that bring students interested in the agricultural sciences, especially animal care, into other parts of the region.

Members of the Young Farmers Club take part each July in the regional agricultural show (see more on this group in Chapter six). Today’s aspiring farmers have no trouble remembering their older peers’ awards from previous fairs when their animals won special recognition, for the memory of their awards is kept alive by the ribbons and trophies kept here in the farm complex. At Christmas each year, the farm’s barns become transformed through “carols with the animals,” a live nativity scene re-created by young farmers and their animals with the help of the music department and village rector. Mulled wine and mince pie, along with a raffle, help the young farmers raise funds for special projects.

This complex of farm buildings makes up only one dedicated-purpose area of the campus. Other clusters within the nineteen buildings of the campus are similarly devoted to unified purposes. The science cluster, just across the main car park from the manor house, has a
labyrinth of laboratories that double as classrooms. All over the campus, guests find bulletin boards with pictorial celebrations of projects ranging from entrepreneurship to essay contests. Notices of students’ contributions to community events paper these bulletin boards. Outside the graphic arts classroom are accounts of prize-winning products and commercial advertisements created by students from past years. The Phoenix Centre for the Arts lines the walls of its entry and open spaces with not only photographs, but also flyers and programmes from the many community and regional events and award-winning performances of Brockhill Park’s young artists. Several studios open off the central hall, some of these devoted primarily to music and drama, while others are used by dancers. Many are the forms of evidence of Brockhill Park’s pride in students’ achievements.

Yet numerous also are the lessons of navigation and negotiation that newcomers to the school have to learn. Most students come from small primary schools where they have become accustomed to a flow of time, routines of inclusion, and free access to multiple uses of space. Now they must move about from class to class. Brockhill Park, like most secondary schools, embraces the practice of moving hundreds of students about the campus every forty-five minutes more than half a dozen times each day. Any stranger to this system has to ask the question: why move all those students when shifting teachers would require far less traffic, energy, and time? Answers to this question provide one of the major tough transitions that Brockhill Park expects of students. Indeed, most secondary school students look as though they are moving through a lithograph by the artist M. C. Escher.

Teachers have a claim on the spaces of their classrooms; yet students have little space outside classrooms and the cafeteria to claim for their social life between classes or during lunchtime. Students have to remain on the move. Brockhill Park’s scattered buildings, lack of library space or other open areas designed for casual gathering by students, combined with its schedule of student mass movement at least once each hour in response to a resounding blast from a horn, all make this message clear.

Their primary schools gave them time and place to talk with their peers, head for the library, or settle in a corner of their classroom designated for reading. There they could linger in the multi-purpose room used for special events, school assemblies, snacks, and lunches. Primary schools also have designated times for free play outdoors several times a day when students can play games or simply spend time with their friends.

Arrival at secondary school signals to students that these times and spaces are no longer available. Newcomers to Brockhill Park in the autumn of 2003 reported a sense of uneasiness over the prospects of losing the familiar routines of their primary schools. Students soon learned that at any and all points throughout Brockhill Park, teachers would monitor the movement of students and urge them to move on when they stopped in clusters in hallways or on their way to classes. Groups of students under the eaves of a building during a rainstorm would be told to “go to class,” or asked “where are you supposed to be?”
The social life generally identified with young people and richly and amply researched and documented as essential to their socialisation had to be squeezed into the few moments between classes or the short half-hour of lunch. Brockhill Park’s space shortage and tight time schedule during the 2003-2004 academic year reduced talk-time among friends, as well as possibilities of quiet time alone with a book.

The tracking of one day with each of twenty-five students selected at random during several points of that academic year indicated that aside from their assigned time for lunch in the school canteen, students had a maximum of only three blocks of uninterrupted time for peer socializing each day. These periods never exceeded three minutes in duration except for their brief lunch time in the canteen. Some students found their own ways to socialise with their peers by going out of bounds. They went off school grounds over into the forested area of the nearby park, but this meant cutting classes. Others simply left school early and headed for the train station or the shops in the village down the road. Though counseling and academic advising offices were available for students to schedule talks with teachers, students had to make special arrangements with their teachers to do so. And any student with a problem or need for communication with counsellors or advisors had to find the time and privacy to speak to a teacher to request permission to make an appointment.

During the 2003-2004 academic year, Brockhill Park School put in place a series of changes designed to try to build cross-age communication possibilities and create some sense of belonging. Students met early in the morning for attendance checks with their Form Teachers, and these “houses” carried special names and represented the units for competition in special school events. Students met, however, for less than half-an-hour in the morning and only fifteen minutes or so again near the middle of the day. Nevertheless, the “house plan” was, in the view of many teachers and students, an improvement to the previous strong isolation of younger students from older peers. As might be expected, form teachers varied greatly in their ability to use these brief periods to establish bonds with students who might not otherwise be in any of their classes. Yet some students formed friendships or at least greeting familiarity with senior students whom they could refer to as friends or go to for answers to their questions about life at Brockhill Park School.

Tough transitions to the secondary school came through three critical losses for students. First and foremost were opportunities for socializing with peers and teachers without the frequent blare of the school horn. Next were open spaces such as art classrooms, libraries, or playgrounds where students could combine work and socializing, learning and talking. Finally, once students arrived at Brockhill Park, many felt depersonalised by the environment. It was possible to cross the campus between classes and not meet a single person — teacher or student — who knew a newcomer by name. Rarely then did teachers or students have a chance to talk about achievements, joint learning experiences, resources and references, or school events. The building of a sense of community, connection, and respect for either individual or the school as a whole class came with great difficulty in transitioning from primary to secondary school. Brockhill Park presented special difficulties because of its scattered buildings, open spaces of mud on rainy days, and a general absence of convening spaces or times for students.
Later language development

Educators within secondary schools find quick and rational reasons for the herding of students from class to class and the tight segmentation of time. Arguments centre in the need to transmit materials to prepare for tests, and the role of teachers in instructing students in facts and methods. Many reasons point to routine, habit, and established ways of cutting time and space. It is not easy to be creative about these seemingly immovable given. To the question of why students in mass move each hour of the day rather than far fewer numbers of teachers, the proprietary claims of teachers on their “own” classroom space and the need to teach with specific equipment constitute reasonable answers. Many subject areas, such as business, graphic arts, and some of the sciences and arts, have special equipment needs that require stationary locations for their classes.

However, not all subject areas have these needs. For example, most secondary schools have laboratory assistants for the sciences, and the equipment is kept in spaces separate from the classrooms and rolled out on carts for particular uses in response to teacher needs. The travel of such equipment should not be extensive, but the mobility of science equipment is demonstrated by the fact that materials and special equipment do move from classroom to classroom, usually within a single complex. At Brockhill Park, where so many separate buildings exist, and there is no covered or paved area between them, this movement of equipment within the same building is necessary. It was difficult for teachers to see how it could be possible for students to be able to claim spaces special to their needs. Thus, for the foreseeable future, it would have to be students and not teachers who had to remain on the move throughout each day.

Yet constant moving about from class to class brings negative consequences for communication, students have little or no time for extended conversations with either peers or adults.

Across England during the 2003-2004 academic year, many educators and policy-makers lamented the low levels of language ability of English students. Their worries were not over their lack of knowledge about the English language or even English literature. Instead, concerns were about English students’ low skill levels with “oracy.” This term, explained by education policy-makers, referred to inadequate vocabulary knowledge, as well as habitual use of abbreviated and redundant patterns of syntax. Far too many students in England were judged as lacking fluent skills in oral language across different demands of communication. [See publications of QCA, 2003.]

Families with two working parents, as well as single-parent households, increasingly find it difficult to spend time in either projects or conversations with their growing children. In many villages as well as towns and urban centers, older children and young people have few opportunities for extended talk with caring adults. Many immigrant families find that their children prefer to use the English they are learning with their friends, and thus extensive conversations among adults and children take place rarely in the mother tongue. Prior generations found time for adults and children to work together on projects in the household, plan for holidays or even trips to shops, or join together for special events. In the past decade, television, commercial videos, as well as computers, have isolated family
members from one another, and interactions that centre on planning, doing, and assessing have decreased in both frequency and duration.

The absence of frequent meaningful opportunities to talk across several turns and for more than a few minutes on a single topic with an adult whose experience and opinions matter translates into diminished capacity for academic language. Because so much of school testing depends on rendering what one knows in verbal form, students must come to these written tasks with oral language fluency. The uses of syntax demanded in academic tests, as well as familiarity with numerous areas of specialised vocabulary, depend on extensive oral language use. Unless students have extensively and repeatedly talked about topics and tasks treated in written tests, they will not be able to represent their knowledge in written forms that accurately and adequately reflect the information they may know.

Cross-age and cross-level talk among peers cannot substitute for adult-child talk. However, when peers who are at different levels of experience (whether with a particular school or a subject area) have adequate opportunities for talking extensively with one another while engaged in a joint project, they are much more likely to use these occasions for meaningful talk than when these meetings are fleeting in nature. Students at Brockhill Park often reported that their few times of being together (usually only three-four minutes in duration other than during lunch) went to competitive interpersonal interactions. These sometimes resulted in out-doing one another by coming up with ideas for trouble making: water bombs thrown at classroom windows, hiding bookpacks of other students, etc. Younger students eager to be viewed as “cool” by older students often became the originators of “new” ideas for naughtiness during the students’ short “free times.”

Difficult as it may be for adults to believe, older children and young people crave time and attention from adults. Conversations around matters of genuine common interest constitute the favorite type of exchange. Around Brockhill Park School, many teachers also crave these opportunities and use the few minutes between classes to “catch” students for quick conversations. Others work very creatively to bring as much extensive discussion as possible into their forty-five minutes of class.

In the initial months of our research, we put into place a variation of what might be termed a “design experiment” to demonstrate the capacity of Brockhill Park students for extended conversations on “deep topics.” The goal was to draw from experiments in cognitive psychology that have demonstrated features of optimal learning environments. We did this by bringing together “research teams” from two form classes, that of Katie Rubython in science and that of Sian Goss in the arts. These teams volunteered to work with us in this design experiment after Heath offered them a presentation of what the research teams might be doing. Initially their tasks would be to explore the kinds of language used around Brockhill Park to compliment students on their work.

The language research tasks of the students across the months between September 2003 and March 2004 are summarised in the boxes below. Their initial work was to identify open
and closed questions and to consider when these happened. Their discussions in preparation for this first research quickly went to the point that open questions rarely occurred in their classrooms. When we asked why they would first think of classes and not conversations with their friends as places to identify open and closed questions, they realised that they were reflecting on only classrooms as places of their life on campus. Our analysis and follow-up interviews with the students indicated that when with their friends, they used more open questions than they did in most of their classes. Yet because their times with their friends at school were so brief, they still tended to ask questions that could be answered with “yes” or “no,” or short answers.

The student researchers reported eight times more open questions in social situations than in classes.

In addition, these interviews pointed out that the research had required them to do something they now realised they rarely did carefully with their friends: listen. When they began audiorecording conversations, they found that often friends all seemed to talk at the same time, and no one ever seemed to listen long enough either to ask or answer open questions. Even with these limitations, however, after two weeks of research, the student researchers reported eight times more open questions in social situations than in classes.

<table>
<thead>
<tr>
<th>Social settings</th>
<th>Classroom settings</th>
<th>Open Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are you doing later?</td>
<td>How many stars do you think are in the solar system?</td>
<td></td>
</tr>
<tr>
<td>How far do you have to walk?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which test will be the hardest for you?</td>
<td>What do you want to do when you are older?</td>
<td></td>
</tr>
<tr>
<td>Which dress should I wear to the party?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The students’ next task was to record compliments of only one or two words (“good job,” “well done”) between adults and students as well as between peers. Among their friends, the students found few of these that referred to work; when they occurred they referred to clothes, hair styles, and other aspects of fashion or to generalised behaviour or demeanour (“cool,” “hey, yeah”). Teachers offered numerous one or two-word compliments, and these generally referred to behaviour or attitude or specific aspects of the course work. Teachers would say to the entire class and sometimes to individual students “fine improvement,” “really good,” or other brief summary appraisals.

When the students were asked to search for compliments that identified the specific task or feature being complimented, they ran into trouble finding data. They had to have a second training session to get them attuned to these possibilities. Here they found very few among their friends, and they learned that most of those they found could be attributed to certain
teachers and classes. Still, the following box indicates the kinds of extended compliments that teachers typically used. Noteworthy is the fact that a high proportion of these referred to the mechanics or procedures of work rather than to the substance of learning or of specific assignments or class discussions.

### Extended Compliments in Classrooms

- You have done well to achieve this standard of work.
- I am pleased with your progress.
- This piece was well-thought out.
- You used your grammar (punctuation, opportunity to revise) well.
- I’m really chuffed with your work.
- You’ve really improved your spelling.
- This is spectacular handwriting.

Especially noteworthy was the fact that extended comments on the content of the work were recorded by the student researchers only in arts classrooms, on the farmland in after-school small-group work in science to prepare for SATS tests. Here students heard compliments such as “Well done. You’ve done really well to learn this piece of music.” “Great job today, class. You caught on to this new piece of choreography quickly. This music seems hard to me, and you’ve done a great job.” “You’ve got the point of that experiment down; now keep going on the write-up.” Of note in the data collected by students was the fact that even in arts classes or small-group science work, students only sometimes heard themselves pointed out as individuals who had achieved or merited praise. Most of the extended compliments were directed toward the class or the group as a whole. Only in small-group, out-of-lesson occasions, did teachers directly attend to a specific individual action or achievement [but see Chapter four for more on this point].

Later student researchers were asked to record “how” questions in an effort to have them think about how certain curricular areas lend themselves more than others to thinking about the processes of actions. Again these “how” questions came much more from students than from teachers and were found in greatest number on the farm and in studios and rehearsal spaces, as well as graphic arts or other arts classes. Exceptions came in classes such as Tourism where students worked individually or in groups on projects. Here the “how” questions were directed not only to the teacher but from student to student. The frequency of “how” questions within project-based work appeared to push out directives or imperatives from either teachers or students. [But note that these classes were available only to older students. Only rarely were projects that extended beyond a few class lessons open to students of Years 7, 8, and 9.]

During one research task, members of our student research team (SRT) collected all the ways they could find that teachers gave directions. They were again asked to consider how the forms and contents of these directions would differ across subject areas. What they learned was that in most of the classrooms, when project work was not underway, teacher directives were extensive, direct, and often stated as hypotheticals (if-then statements) that sounded to students very much like threats. These included: “Ten minutes remaining to do
your work; otherwise you have this as homework”; “if you can’t listen to directions, then you will do it wrong.” This request for data was the only research assignment that also generated extensive material on the language of adults outside of school. Though this phenomenon in itself proves nothing, it does suggest that the students were aware that directives from adults marked a continuum of learning for them from classrooms to homes. In addition, this suggestion joins other kinds of data that indicate young people have few opportunities to converse on topics of mutual interest with adults that are distinct from being told “how” to do something by adults.

**Academic language**

Paying attention to what someone was doing meant that whatever was said came from seeing what had happened and not just from thinking one knew what happened.

These minor explorations into adult-student interactions of the young people attending Brockhill Park led the student researchers to interpretation of their findings. They seemed to be surprised that early in their discussion with the International Enquiry Network researchers, the topics of “respect” and “observation” emerged. Students reported that they felt compliments and instructions on “how” should come from times when someone else was “really looking at what you’re doing.” Paying attention to what someone was doing meant that whatever was said came from seeing what had happened and not just from thinking one knew what happened. Student researchers concluded that brief compliments did not necessarily require as much looking, and these came too easily and too often to be meaningful to students. Students in the research teams noted that it was much easier to use one-word compliments than to say something specific.

The relative infrequency of “open” questions within their classrooms stirred considerable debate within the research teams. Many were not certain that classes could have “open” questions, since “aren’t the answers fixed and set?” Others were quick to point out that examination and debate about answers provided ways to learn through exploring other possibilities. They talked about questions that seemed open, but were in reality closed. These came up often when teachers who were working as monitors during class changes asked “where are you supposed to be?” The implication here, according to students, was always “you are supposed to be somewhere else—not here. Why aren’t you there?” Students reflected mature and sophisticated analytical skills in their collection of language examples and in their take on the cumulative meanings of these samples. Many students pointed out that the most genuinely open questions were likely to take place in the car park an open outdoor area everyone had to cross several times each day to get from class to class. Teachers and students sometimes stopped one another there to chat for a few minutes, and open questions did happen there “quite a lot.”

Inevitably, any student research team within a secondary school brings a mode of inquiry to students not directly involved with the team (see more on this point in Chapter six). Being brought into relationship with adults who are asking questions to which they do not already know the answers enables adolescents to articulate questions they have about their
learning environments. For example, in Katie Rubython’s year 9 science class one day several months after the initial work of the team, the group was preparing work on a quite complex one-day project that Ms. Rubython had set for them. The task was to understand categorisation, relations between specific members of a more general category, and the relevance of this work to science. She demonstrated to students that they already used categorisation in their everyday lives in many ways: “when you shop for shampoo, do you have a special brand?” Calls of specific brands came from students, and the teacher drew on the white board a spider diagram showing brands of shampoo. The same activity followed for cars that would fall into different types and sub-types. One student called out mid-way into the lesson: “what’s this got to do with what we’re doing today?” A discussion followed that engaged the entire class in moving from everyday examples to those within science and why this teaching strategy could help demystify fundamentals of science. At one point later in the lesson, as the groups were engaged in the project of sorting cards under categories and within sets of relationships, one student commented aloud: “everyone’s learning today.” Several students asked; “Is this an experiment?” At the end of the class, Ms. Rubython asked: “I’d like to ask your opinion? Did you enjoy this kind of project? Would you like to do it again?” The signal sounded for the end of the lesson before the opinion of the class was established, but several students said to their teacher as they left the room: “That was fun.”

Every instance of influence from the ethos of student inquiry provokes opportunities to examine teaching and learning. One day in Ms. Rubython’s class, when another project was just beginning, some students were having a hard time settling down to listen. After several attempts by the teacher to draw the class to full attention, one young woman asked in a loud clear voice: “Why don’t you stop trying to quiet the others; just talk to those of us who are going to listen. The others won’t do it anyway.” This unexpected commentary on classroom dynamics drew the group into a debate about what being a teacher meant. Ms. Rubython replied: “My job is to bring everyone in because we all have a certain amount of work we have to do. Everyone has to be able to learn.” The entire class joined in the following debate of whether or not this hope was realistic, and, if not, why not. Several young boys who were members of the student research team and widely known throughout the school for their misbehaviour in several of their classes jumped in to add their views. On all such occasions, when talk turned to teaching and learning, students who otherwise often seemed disengaged joined in, sometimes dropping in nuggets of wisdom about pace, relevance, time, and what they saw as the divide between needing to do their “workbook stuff” and all the things teachers talk about. Many expressed the view that what they thought mattered most was completion of their workbooks. They showed their impatience when teachers tried to engage them in academic conversations or to get them emotionally involved in how different teaching methods or activities might relate to how effectively students remembered content materials. Students saw such occasions as irrelevant to completing workbook pages.

Critical for secondary-level educators and policy-makers to remember is the foundational role of language for students who wish to advance academically. Unless students have extensive opportunities to practise orally and in conversation with adults the language of deliberation, hypothesis-proposing, planning, and critiquing, they cannot effectively
represent what they know in writing. Too often and in too many ways, adolescents’ oral language skills, needed in family and community life, as well as in further education, get cutoff with speed and deliberation once they enter secondary school. This fact is not specific to Brockhill Park, for all secondary schools have far greater numbers of students than primary schools do. Moreover, secondary schools have to maintain “discipline” over students with regard to movement, noise, and behaviour control. As a result, during later childhood and adolescence, when young people need the language for academic work more than ever, they have little opportunity for meaningful practice.

Creative learning through project-based work offers the best prospects for ratcheting up language interactions that carry meaning, risk, and substance. The importance of meaning should be obvious, for without seeing a project or set of tasks as meaningful, older children and adolescents choose to opt out, though the complacent will often fill in workbooks or do worksheets without questioning.

Bringing some kind of risk into adolescent learning is essential for achieving any possibilities for creative learning. Pre-scripted answers or one-answer-only questions generate neither curiosity nor enthusiasm from young people. The substance within the project links strongly to the import of meaning and risk. Unless the end-project will be weighty and earn respect from adults that matter, then the young again opt out. Therefore the creation of projects in which the young can engage becomes highly critical for learning environments that generate positive and sustained participation, as well as retained information and skills.

Without project-based work, young people end up all too often accustomed to uttering a preponderance of declarative statements, expressed without attention to contextual or situational influence on the true value of these. Their questions are simple, often reflecting concern only for procedure and not for content. Within classrooms in all secondary schools, questions tend to focus on procedure or confirmation of either a course of action or an answer. Large classes, short lesson periods, and test preparation foster these questions. Yet, without extensive and meaningful engagement with open questions and sustained conversation, students are likely to continue to have difficulty with looking at questions from different perspectives, assessing alternative answers, or internalizing multiple ways of reaching answers. Most important to language development of secondary students is finding ways to involve them in planning and creating; doing so means involving teachers in these open pursuits as well. Within planning rests opportunities for learning patterns, sequence, and causality. These key ideas cut across all the curricular areas.

Several key findings from scholars who study language acquisition relate to the urgent need to ensure that young people gain more opportunities to talk through plans and ideas with adults who have expertise and work as facilitators in project development. Creative Partnerships Kent viewed each professional who entered schools or community organisations as a conversationalist who would be talking with young learners. The presence of these adults in learning environments where the young were engaged in project-based learning demonstrated the understanding by the staff of Creative
Partnerships Kent of numerous key findings from studies of later language acquisition. We set out here some of these points in preparation for the treatments in the coming chapters of language in studios, rehearsals, and laboratories at work in the arts and sciences.

<table>
<thead>
<tr>
<th>The language of studies, rehearsals, and laboratories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Extended talk directly impacts literacy outcomes, builds vocabulary, and enables ease in reading to learn.</td>
</tr>
<tr>
<td>2. The type of talk matters. To facilitate literacy and academic thinking, the talk between adults and young people needs specificity, meaning, focus, and duration.</td>
</tr>
<tr>
<td>3. Narratives, illustrations, examples, and explanations, as well as drawings, lists, or other visual demonstrations, amplify the number of turns across speakers and increase thoughtful language.</td>
</tr>
<tr>
<td>4. With more talk comes greater fluency in the uses of academic language: open questions, comparatives, explanations, and illustrations.</td>
</tr>
<tr>
<td>5. Meta-commentary demonstrated through stepping away from the here and now to reflect on the past or the future builds confidence and competence in learning.</td>
</tr>
</tbody>
</table>

Linguists studying older children (in the year or so before transitioning from primary to secondary schools) have found that lexically rich extended discourse distanced from the here and now benefits children’s language growth. [See the extensive work of C. Snow and colleagues at Harvard University; see also Beals, 1993, 1997.]

The tasks of the student researchers in documenting language and analysing their findings provided the opportunity (albeit highly curtailed through lack of time and spaces for meeting) for students to talk with expert adults about topics of mutual interest. During their first term on language research, the student researchers reflected a little known fact about young people: they are drawn to meta-cognitive work. Once they have engaged, even ever so briefly, in exploring how they know what they know, and how others also know, they begin to reflect a “theory of mind.” This term refers to the understanding that linguists and psychologists study in very young children as they come to realise that others have intentions that motivate behaviour. For older children and young people, as well as adults, having a theory of mind amounts to much more than acknowledging that others have intentions. What happens with older children is that they begin to think about what is going on inside the thinking of others. The more they do this, particularly when that thinking is directed toward wondering about how others work out problems or accomplish things, the more they internalise strategies of learning.

At the simplest level, recognizing how important it is to know how answers
are reached is revealed by testmakers when they ask students to show their work in reaching the answer to a maths or science problem. Many of the tests created by the Qualifications and Curriculum Authority not only ask students to reveal their own thinking but also to enter the minds of authors or characters in fiction and reflect on their processes as well [see, for example, Heath & Wolf, 2005].

Creativity in thinking, as well as innovative ways to critique, position, or compare the work of others, can come only with facility in language. Particular kinds of language within the sciences and the arts reflect creativity and creative learning best. These fields depend on extensive in-the-head work through planning, imaging, and critiquing what has gone before – in the work of others as well as in one’s own. [See chapters five and six for extensive commentary by Brockhill Park students on their growing awareness of the potential of reflecting on their own ways of learning as well as on the processes of collaborating with others on projects.] During one of the early months of our research, after students had begun to realise that we – along with the student research team — had an interest in how students thought about what went on in their heads during learning, two students talked about a current project they were planning with resident composer Robert Jarvis. “Being set up to do something on our own, well, that’s different. It’s not about just the way things have to be done. When you think about it, it’s scary - you just have to play with ideas. You have to think!” This thinking risk is the transitional learning that young people need to move them forward through creative learning to sustained knowledge and skills.

References


QCA publications since 2001 on language in the classroom.


Illustration

page 32 M.C. Escher’s “Ascending and Descending” © 2005 The M.C. Escher Company-Holland. All rights reserved. www.mcescher.com

Photography

page 28 © Brockhill Performing Arts College

page 37 © 2005 Roy Smith
Chapter three

**Studios, rehearsals, and laboratories as theatres**

**The power of observation**

Think of studios, rehearsals, and laboratories and consider what is required within these spaces. What first comes to mind are actions such as *looking*, *studying*, or *observing*. Then consider just how much time is spent looking at the works or moves of another in these spaces. Such a quick mental exercise brings us to the realisation that in these specific types of spaces we place a premium on knowing by looking.

When we then turn our attention to the daily run of events and lessons in schools, we recognise that the key operative word is *listen*—students need to listen to words, directions, and lectures or other texts. From the earliest days of school, the focus is on enabling children to recognise the need to listen to the words that their teachers direct to them. Most of these oral directions urge young learners to *read*. Both sub-textual and direct messages throughout the school years lay out the belief that knowledge gained through access to *words*—*oral or written*—counts above all other ways of knowing (for more on this point, see Chapter 8 “Themes from the seven children’s drawings” in Anning & Ring, 2004). For those whose preferred ways of gaining and deepening knowledge depend on visual, embodied, or manual input and practice, their learning is at risk of being ignored, relegated to marginal pursuits, or demeaned. [Such points are most frequently linked to the early work of psychologist Howard Gardner on “multiple intelligences” (see Gardner, 1983 for the most comprehensive treatment of this theory).]

In recent years, scholars have tried to turn our attention to the vital importance — neurologically, socially, and academically—of looking and observing (see, as a sampling of research studies, the journal *Visual Studies*, published by the University of Leeds; see especially Kawatoko & Ueno, 2003 on scientific practice and discourse). In the arts and sciences, remembering and re-using the visually perceived details that can be absorbed only by intense looking rank equal in importance to storing information gained through verbal means. In the many sub-divisions of both fields, no advancement is possible without substantial competence in learning by looking.

A series of five booklets (Heath & Wolf, 2004) based on fifteen months of study of visual artist Roy Smith in residence one day a week at Hythe Community School describes the extent to which Smith led very young children to look and look again at visual representations from professional paintings to driftwood to animal skulls. As they intensified their looking, the children gained practice in focusing their eyes directly on details. In addition, they practised again and again reproducing details in their drawings and comparing the details in the pictures and objects they studied as well with those they rendered in their own works of art.
Analysis of the kinds of language Smith used with the young children revealed that much of his talk directed the children’s focused attention to fundamental concepts of mathematics. The chart below illustrates the kinds of abstractions attended to within focused observations. Smith repeatedly drew the young artists’ attention to the need to look and to look again before being sure of correct proportions or means of working toward achievement of artistic objectives, such as foregrounding or backgrounding in still-life work.

<table>
<thead>
<tr>
<th>Segmenting Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perspective</td>
</tr>
<tr>
<td>• Proportionality</td>
</tr>
<tr>
<td>• Relative size, distance, weight analysis</td>
</tr>
<tr>
<td>• Dimensionality</td>
</tr>
<tr>
<td>• Foregrounding and backgrounding</td>
</tr>
<tr>
<td>• Reflection portrayal</td>
</tr>
<tr>
<td>• Media-shifting</td>
</tr>
</tbody>
</table>

Several notable learning theorists have stressed the importance of visual attention to detail as both a key precursor and ongoing complement to reading well. Some of these scholars, most notably Kress (1997) and Kress & Leeuwen (1996), have taken apart visual interpretation and externalised its components into a “visual grammar” or “grammar of graphic design. Their description of the nature of visual literacy gives primary emphasis to meaning-making resources and the ways in which the movement of the eye into and across visual representations (largely in support of written text) gives rise to ideational or thematic, interpersonal, and textual meanings.

This work of educators has, in the first decade of the twenty-first century, begun to receive extraordinary support from neuroscientists. These scholars push us to learn more about the neurological and biochemical activities involved in seeing and especially in focused, extended observation (Levin, 2004; Turner, 2005). In particular, this research forces attention in new ways on how what is observed visually ties to what we can recapture verbally and remember in our meaning-making through symbol systems. Consider, for example, what neuroscientists have shown through their studies of how important it is for young children, when they come across a new word, to acknowledge they do not know what it means. It appears that these children, as distinct from those who do not seem to understand that they do *not* know the meaning of a word, also tend to be close visual observers. They are more likely than their age mates to pursue what unfamiliar words mean by searching about for both visual and verbal cues that might improve their understanding. Much of this work on close looking suggests that sustained attention to visual
representation may carry over into meta-cognitive processing that has value in verbal behaviours, such as reading or drawing the meaning of a word from associated visual stimuli (see Merriman & Marazita, 2004 on links between visual perception and awareness of one’s own lexicon). Scientists and artists consistently attend to the visual context of their work, and both depend on linking visual stimuli with verbal recall when they publish or exhibit their results. We have only to think of the importance of visual illustrations in science textbooks to grasp fundamental outcomes of the co-dependence of science and the arts — graphic, photographic, and schematic. For learners, the importance of this co-dependence to their own gains in knowledge and skills comes through being called upon to observe in the spatial learning environments of both the sciences and the arts.

Three findings from the work of neuroscientists are most relevant for thinking deeply about commonalities across the learning environments of studios, laboratories, and rehearsals. These spaces of the arts and sciences make evident at a common-sense level the following research directions:

**Vision is our most efficient way of gathering information about the world around us. However, observing requires the mental work of filling in gaps or fitting observed details into a sense of whole and an implicit narrative in which we may or may not see ourselves as playing a role.**

**Within these environments, each learner has to take on the self-perception of being a unique learner. This role of self as observer opens awareness that intake of information depends largely on observation and sustained focused attention to detail. The sense of this kind of role is critical in the spatial environments of science and art, because every observer will not see the same thing. Note that this expectation differs from that of a group of learners reading the same text under instruction or test conditions. In general, all readers are expected to reach the same answers. Observers in arts studios and rehearsals or in science laboratories are expected to learn through taking unto themselves a role that will lead them to discovery, exploration, invention and creation. This sense of role means that we see ourselves involved in the scene, thereby upping the ante on both memory retrieval and storage. We ask: where have I seen this before? what does what I am seeing remind me of? what do I know that will help me discover what is new here?**

**Visual focus, motivated by the intention taken up in role, enables the viewer to take on a sense of agency. When called for frequently and within developing a sense of agency, sustained visual focus and perception of detail correlate with a gain in fluency in later language development, particularly in forms and genres related to envisioning a future (plan, scene, series of actions, etc.) (see Heath, 2000, 2005; Turner, 2005).**
These three recent conclusions from neuroscientists also receive substantial support from evolutionary biologists. They point out that both archaeological evidence and extensive computer simulations of the development of the human brain suggest that in evolutionary terms, extensive engagement with both rapid scanning of a visual scene as well as holding visual focus co-occur with the increased human capacity for long-term memory and targeted retrieval (see, for example, Donald, 1991, 2001; Deacon, 1997).

A highly simplified way of putting this idea might be that as humans moved beyond the hunting and gathering stage, they had to focus more on details, remember more, and play more roles. Settlement, agrarian life, and commerce demand different kinds of “brain work,” and over tens of thousands of years, the visual, linguistic, and memory capacity within humans moved more and more in sync with one another.

**Time to Focus**

We need now to put this work of neurophysicists, evolutionary biologists, and linguists into the context of research at Brockhill Park School and how project-based learning takes place within the sciences and the arts. As we do so, our purpose is to reflect on the power of observation not only to penetrate other ways of knowing, but also to deepen and amplify these. Of key importance is the way in which working on projects—the central kind of work done by artists and scientists in their laboratories, studios, and rehearsal spaces, are **roles**. We must remember that observing and looking, classic ways of gaining an understanding of the nuances of playing successful roles, cannot come under the direct instruction of teachers. Thus as learners take on roles outside those of being just a student and thereby under instructional dictates to learn by listening and reading, they activate attending to details and observing patterns. By putting to work a capacity for visual and attentional focus, they gain a sense of their own agency as learners.

But before we close in on Brockhill Park School, it will be helpful to consider other situations in which readers will have seen parallels. Recall previous visits to major art museums. Recall the numerous paintings of artists’ studios; or think of the numerous etchings that show the prized operating theatres of ancient universities where aspiring surgeons watched dissections of human cadavers. The long history of looking to learn as well as represent in extensive and sometimes excruciating detail both the “real” and the imagined has been told in numerous ways (for a history of “artful science,” see Stafford, 1999).

Some of the most famous paintings in the history of Western art allow us to be onlookers as artists and scientists work in their spaces. Others simply portray scientists standing in the midst of all the tools most prized for studio or laboratory work. Paintings by the artist Edgar Degas let us enter the dance studio to observe rehearsals, practices, and contemplative artists in moments of reflection.

From time to time, galleries and museums, such as the National Museum of Dublin, mount exhibitions that illustrate the hand-in-hand work of artists and medical scientists. Over the last half of the twentieth century, such exhibitions have called attention to the closeness of methods used by artists and scientists as well as their interdependence. Artists borrow tools from scientists to make their work more precise or to give special effects. For
example, recall the clamour created by artist David Hocking in 2000 when he revealed the role of *camera obscura* in the work of Jan Vermeer. Scientists borrow artists’ methods of portrayal, precision in rendering detail, and sustained observation. Most famous as representative of the inextricable linking of methods, means, and intensive study between art and science is Leonardo da Vinci and his sketches of human anatomy.

The necessity of looking to learn lies deep within the history of Western specialisations in medicine, surgery, botany, physiology, anthropology, archaeology, as well as all of the arts. Jonathan Miller, in his acclaimed exhibition and book *On Reflections* (1998) revealed the extent to which many works of Western art portray the act of looking as well as call upon the viewer to look more deeply to see just how these works mirror within themselves the act of reflecting or seeing again. Scholars across the humanities, sciences, and arts continue to point out that perception is neither fully optical nor automatic in its operations: seeing is intensely social (cf. Wolf, 2001). This has been the case since certain modes of art in the modern era came to be performed or produced almost solely to be looked upon rather than as adjuncts to other core concerns such as religion, agricultural harvests, etc.

Within all of the paintings used in the exhibitions and works noted above, the strong links between observing and building narratives become evident. As young would-be surgeons watch dissections in operating theatres (both today by video camera and back across the centuries within the physical space of theatres), they look ahead to the narrative of their own development as physicians. Their internal narrative-seeing themselves in current and future role-motivates their attention through the sense of agency of what is ahead for them as well as their internal rehearsal for taking on the roles they are currently observing others play.

Similarly, observations of an artist’s studio evoke narratives not only of what is occurring at the moment, but also the stories that have gone before among the assembled who observe the artist observing as he or she paints.

This link between looking closely and construing narratives is not accidental. Indeed, neurologically as well as historically, focused looking and calling up the long-term memory necessary to create narratives go together (see Heath, 2005). Paintings of studios from the eighteenth century to the present day include globes, maps, books, materials or specimens, as well as collections of tools. All of these artifacts declare that those within the studio or theatre use information from a host of sources to build their knowledge of worlds to explore and to create.

All of these environments enable the creation of pictures in the head, which is not transmissive in its key element—that is, a body of information is not being transmitted intact to others. Instead, these environments point out the transitional role that viewers assume—between medical student and practicing surgeons being observed on video or between art and life, or between preparation for rehearsed performance and “final” performance. The ultimate result of the observational experience in these settings is transformational, for the viewer does not expect to be or act the same following the viewing. In essence, the actual seeing of performance moves the engaged observer into being a performer “in the head.” (For more on this point with regard to dance, see Chapter four on Dancing Together as well as Chapter six.)
Studios, rehearsals, and surgical theatres as learning environments intensify the real-world need to learn by observing. These particular environments of sciences and arts contribute to and are interdependent with written texts. Medical students do not just observe surgeries; they also study medical texts. Dancers and painters do not merely look; they also draw their inspiration and build their programmes around written texts. All are deeply supported by their prior and post uses of print. The visual artist creates a picture which, if exhibited, is accompanied by written text and rests within a history of print as well as visual memory of specific details. Who can ever see Peter Breughel’s The Elder’s Fall of Icarus without also both recalling the story to go along with the tiny speck of the fallen boy in the sea? For the role-taking engaged viewer, observation of visual detail almost invariably, leads to narrative build-up of either past or future scope.

Yet, to bring to active demonstration the here-and-now of what we often see in museums, let’s go to the dance studios of Brockhill Park School. Each Phoenix Centre studio is a bare room with equipment for music on the same wall as the door of entry into the studio. At least one wall of each studio consists of windows, and mirrors bank the other walls. The following conversation comes midway through a session exploring a new piece of choreography developed by one of the advanced groups of dancers. Several instructors move in and out of the room during the course of the exploration, and speakers are noted as only “dancer” (student) or “instructor.” The “equal sign” (=) indicates that one speaker’s utterance is continued without break by another.

Dancer: We need to make the circle bigger. (Both instructors move out from the group and dancers follow their example to enlarge the circle)
Instructor: What we need to do is =
Dancer: = be like (moves to demonstrate a position)
Instructor: Yeah, it’s like that [nods to dancer and picks up the move herself]
Dancer: I don’t see why you can’t have three out of four standing ones taking chairs [dancers are working with several chairs as props during their work on this piece of choreography]
Chorus of dancers: Yeah, you could [all repeat the “three out of four” suggestion and demonstrate simultaneously]
(Another instructor enters the studio and observes. The first calls out.)
First Instructor: Do you like this?
(The dancers go through the move again with the realignment of chairs. )
Second instructor: I had another idea.
First instructor (to dancers): That’s what you have to be careful of (laughter). It’s a bit like jealousy, isn’t it?
[The group laughs and continues working and adapting their chair work, while the instructors work together at the equipment. When the first instructor looks up to observe the group, she signals approval.
First instructor: Let’s do what you’ve just done. I really like it.
Dancer: (with humor) Can I move my chair please? [She is signalling that the group has not completed their adjustments and experimentation, and the group may not be ready yet.]

The give-and-take in experimentation and exploration demonstrated by the instructors and
advanced dancers, along with the close observation, constant comparison, and occasional verbal summative statements mark not only sessions around new choreography, but also everyday events of regular lessons with the beginning dance students.

Instructors often announce before warm-ups an opportunity for experimentation: “Today we’re going to try something I’ve not done before. We’ll just see what happens.” As they begin warm-ups with the music, instructors call out the counts and occasional comments on the particular dimensions of movements: “This one is a big stretch.” Students sometimes chorus “oh, yeah” or an equivalent comment, as they shift their bodies to mimic the move.

When the group moves into the experiment of the day, the instructor often makes comments throughout the work such as “I’m asking here for an artistic decision.” When they move into group work that may involve strong interdependence to support a dancer, the instructor says: “So we’re not listening; that’s dangerous. At times like this, why am I checking it?” The chorus from students is “SAFETY.” After observations of trials, instructors make comments such as: “That didn’t look explosive enough. I know you’re being careful which is why it lost that exuberant quality, but that’s what I want back.” It made me gasp. I want that gasp back.” After watching the renewed vigor of a series of moves, the instructor may suggest: “Okay, let’s try those two together. What’s this called when you’ve got a different thing in same time?” Several students call out “simultaneous contrast.”

At the end of certain experimental sessions, the instructor asks a question to draw out the critique and conviction of the dancers: “This is what we’re going to do?” Often dancers observing other dancers will make comments such as “he’s spinning the wrong way.” Instructors have a repertoire of responses to such observations that range from “let’s work it out” to “would that work if we try it that way?” Dancers then throw out their observations: “no, that’s the challenge,” or “are we jumping there or not?”

---

**Dance studio work is marked by:**

- Professionalism (hard work, tough choices)
- Mutually supportive ethos (literally “we’re in this together,” for instructors do what dancers do)
- Erasure of many boundaries that generally surround separate roles of teacher and student (“I don’t see how we can do that” “that’s great! could you show us how to do it?”)
- Swarming of language (everyone talking at one time to reveal mutual attention and simultaneity of ideas)
- Fast evolution of ideas and rapid transformation of abstractions and critique into action (acting, analysing, critiquing, and reflecting occur at the same time and cross borders between teacher and student)
- Constant calls for narratives to surround movements or to explain detail (“what’s this song about? how does that make a difference to the way we move?”)
- Frequent use of similes and metaphors (“watching this is like seeing you ski” or “it’s like we’re in a fast-moving stream”)

---
It is easy to see and hear the bits and pieces of language noted above day after day and detect nothing particularly unusual about them. However, in contrast to the talk of regular lessons, project-based dance carries several critical features specific to studio work. First and foremost, all of this language is based on sustained visual focus as well as engagement within the given roles of the task. If someone is not looking in any of the above sequences of language, then the words make no sense by themselves. Listening is secondary to focused attention and participation. In short, to understand is to look.

Dance studio work is marked by:

Reading about the studio work of dancer Martha Graham, one cannot help but notice how these constructions play out in the world of professional dancers. They experiment, suggest, demonstrate, write down thoughts, search for inspiration, read widely, and collaborate with colleagues. Yet as in the careers of many famous professionals, there is a moment of revelation—a combination of seeing, internally narrating the self in action, and moving forward—that occurs at the onset of their careers, and then occurs again and again as professionals constantly work to reinvent themselves as well as their art.

As a young girl of sixteen, Martha Graham had never danced a step in her life, when she saw a poster of the famous Ruth St. Denis dressed for her role as Radha, the Hindu goddess. Martha stood transfixed before the poster, and then begged her parents to let her attend her first dance performance. That night St. Denis performed a trio of dances—The Incense, The Cobra, and Radha—all made famous by the dancer’s ability to evoke what many in the earliest years of the 20th century saw as the sensual qualities of the exotic East. According to a biographer, Martha sat spellbound through the performance, bewitched by the magical theatre of Ruth St. Denis. “From that moment on,” she recalled, “my fate was sealed. I couldn’t wait to learn to dance as the goddess did” (Freedman, 1998, pp. 21-22).

Of course, the rest is dance history. Martha Graham joined Ruth St. Denis’ dance school and later became one of the most famous dancers of all time—creating unparalleled narratives of emotional intensity that took the dance world by storm. She experimented endlessly not only with the style of dance itself, but also with music, costume, and set design, and her speech was marked by metaphor to help her dancers see the moves, for she once “told her students to walk across the room as if their hearts were on the wall” (Freedman, 1998, pp. 63). Yet it was her initial, focused gaze on a poster and her first dance concert as well as her reverie of seeing herself in a powerful role that propelled her forward movement into an astonishing career of creative genius.

Language parallels in the arts and sciences

The language used in creating projects in the arts and the sciences contain multiple parallels. Because both fields depend upon the “three C’s” of creativity, continuity, and critique for their success, they have to take advantage of the work done by certain kinds of language. Central to the talk of both the arts and the sciences are frames for information that relate to process as well as to outcomes.

Note that the terms “visual,” “choreographic,” and “musical” here are not used with only the meaning generally ascribed to them in the arts. Instead, within the sciences, what one sees in the laboratory, specimen, exhibited behaviour, or x-ray is layered with other kinds of
information. Similarly, diagnostic medicine as well as laboratory experiments have to be choreographed —created in combinations of small units that will ultimately work together to give a full picture. The term “music” may stretch by some measure what scientists do. However, many scientists report that they listen to the “rhythm,” “pace,” or “cadence” of ideas as they flow through their heads when they are outside the laboratory or the experiment-in-action (see Root-Bernstein, 1987).

At Brockhill Park, when we looked closely at the language used in science projects as well as arts projects, we gave special attention to longer statements. The dance conversation among students and instructors before indicates that within the dance studios, instructors tended not to give abbreviated compliments, such as “good” or “right.” Instead, their statements often included comparative analysis, their own emotional reaction, suggestions, or requests for reflection on the cognitive or learning processes involved in what the group had just seen or done.

The same kind of language flowed through science projects. Because these took place at Brockhill Park far less frequently than did arts projects, the body of data for comparison is not equal in number of hours of data collected. Most of the science work took place, as noted especially in Chapter six, within the agricultural sciences or in specially designed work opportunities within regular science lessons. These often extended beyond the class day and flowed into after-school, small-group work. On the other hand, the work of students with Robert Jarvis, composer, sat clearly within the framework of science projects, for students consistently worked toward solutions of problems as well as creations of outcomes in the form of visible products. Taken together, the language of the arts and sciences projects reflected the following similarities in structures. However, it is critical to note that only utterances of more than eight units of meaning (either words or parts of words, such as plural or past tense markers) were used in this analysis.

There is an 86% overlap between the language used in projects in the arts and that used for projects in the sciences. But what is this language? It is that of hypotheticals, critiques, sequences of steps in a process toward a whole (either past or planned), extended explication, and narratives of explanation.

<table>
<thead>
<tr>
<th>The languages of the sciences and the arts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypotheticals of possibility and probability</strong> [If we do x, y, and z, could we get p or q, and if we got q, what would be our chances of being able to add p?]</td>
</tr>
<tr>
<td><strong>Comparative or analytical critiques</strong> [This new way looks to me like it would take the other background. Have you thought about that change, or did you try it and set it aside?]</td>
</tr>
<tr>
<td><strong>Step-by-step run-throughs of accumulated data or accomplished steps in a process</strong> [As we go from 1 to 4 in what you’ve just suggested, where will we get or how could we do 5 and 6?]</td>
</tr>
<tr>
<td><strong>Future scenario narratives</strong> [When we move those chairs to a line-up of four, then we’ve got to think ahead to when those are going to be relocated to the four corners of the stage. And is that space we’ll be working in going to accommodate all four with the full dance troupe?]</td>
</tr>
<tr>
<td><strong>Extended explication</strong> [We had to decide that because that other programme wasn’t working the way we thought it would, and when we tried the other way, that didn’t work either. So we went ahead to decide this, and so far, it’s working.]</td>
</tr>
</tbody>
</table>
To illustrate the continuities from studios (whether dance or visual arts) and living laboratories (such as those used especially in agricultural, botanical, and physical sciences) to rehearsals, the following section turns our attention to the language and the roles of this special way of preparing for final or opening performance.

**Rehearsals—Getting ready for final performances**

Rehearsals differ from studios and laboratories largely in that they occur only at certain times in the run-up to final performances. They do not characterise planning, and thus they rarely involve extensive hypothetical work. In the days leading up to final performances, it is too late to ask the questions “what if?” or “how about?” with the idea of change in mind. Instead rehearsals, which happen in the sciences as well as in the arts, are geared to run-throughs of what is to come in the final performance or the delivery of the work that has gone before.

Anthropologist Elinor Ochs and colleagues, in a long-term study of physicists in high-energy laboratories, found that scientists use rehearsals to prepare for the delivery of scientific papers at conferences or conventions (Ochs, Jacoby, & Gonzales, 1994; Ochs, Gonzales, & Jacoby, 1996). The same is true of other types of scientists and especially of physicians who use rehearsals to prepare for their demonstrations and lectures before classes of medical students. Dentists and many other practicing scientists, such as veterinarians, also rely on rehearsals of their individual or small-term performances. If anything, rehearsals have increased drastically in number and in importance with the invention of numerous kinds of new technologies that have to be demonstrated and explained before medical personnel can consider adopting them in their everyday practice. Indeed, with the increased dependency on technology for presentations, rehearsals or run-throughs have become ordinary events across professionals of many fields. Such technology provides additional props for use in both rehearsals and final performances. But what have rehearsals ultimately to do with learning—that of both the participants within the rehearsal and that of spectators who witness final performances? All rehearsals assume extensive prior practice as well as the assumption of responsibility for readiness by performers. Therefore, both practice and a sense of self-assessment (“am I ready?”) precede rehearsals. The presence of the following additional features make rehearsals “count” as high-risk and therefore increase the likelihood of improved performance achievement over performances that have not had the benefit of rehearsals.

1. Rehearsals depend in general on written texts as background information. For example, a physician preparing to demonstrate and lecture on new laser technology for knee surgery will have read a great deal of background material as well as tried out the technology numerous times. The same is true for rehearsals before performance of a drama ranging from a script to a programme of a dramatic performance previously seen or, in the case of young children, a fairy tale or storybook they know and are now enacting. It appears that the term “rehearsal” in English has come to refer to practise sessions that lead to a final performance that is acknowledged as spontaneous and as unique in the moment (i.e. never performed the same way twice).
Projects increase motivation and intensity in learning when they involve rehearsals. The above features of rehearsals indicate why this point amounts to common sense. If one is working toward a final performance that has consequences, and rehearsals are needed, effective dimensions matter.

A good deal of work in ‘emotional literacy’ stresses the power of rehearsals and the lead-up work that precedes these to prepare learners to handle on-going self-assessment within learning environments that manage to be both supportive and high-risk (Damasio, 2003; note especially the author’s introduction to the book and his emphasis on ‘seeing inside the house’). Acting out and seeing the self in action (as in the frequent ‘freeze’ commands in rehearsals) intensify the learning that goes on within rehearsals. This ‘freeze’ stance is especially marked today when classes within medical schools watch a surgical or diagnostic procedure on video and stop the ‘rehearsal’ at numerous points for detailed observation. The same is true for dramatic rehearsals or those that precede dance or musical performances. [See Chapter five for demonstration of how the rehearsals within the agricultural sciences programme intensified the sense of role and responsibility of young learners.]

In essence then, knowing one’s future, whether as a defining feature of being human, or in terms of a specific future planned action (such as a surgical procedure or a deadline of a theatre or dance performance) determines in large part how memory and recall work neurologically. In essence, one learns to ‘see reason’ (Stenning, 2002). David Ingvar, a psychologist from the University of Lund writes about ‘memories of the future’, and he argues that along with the capacity of the brain to imagine the future is its capacity to provide a sense of possible time paths. But these capacities need practice, and such learning has to emerge from outside the usual existing forms of everyday interactions. Acting in roles is key to this needed practice.

In the project work of the sciences and arts, role-taking by all parties helps contain ambiguity and also provides intricate interpretations of possible futures. This future
envisioning of both task and self-in-task sets off neuronal connections that provide greater efficiency as their connections become more automatic through repeated practice. Visual discernment needs extensive reinforcement; only through practice does one become a truly discriminating observer.

Returning to Martha Graham—dancer and choreographer—one might be tempted to think that her creative genius was simply a given. But, no. She worked at it, constantly pushing herself and her dancers beyond their perceived limits on both emotional and physical levels. Without reflection and rehearsal, critique and constant renovation, emotional intensity and experimentation, Graham would never have been able to create the movements that made her so famous. Still, ‘sometimes the movement she was searching for would not reveal itself. Martha would try one approach, then another, then stand silently at the studio window staring out, thinking. The dancers would sit on the floor, waiting, until she turned to them and said, ‘Let’s try this’” (Freedman, 1998, pp. 106-107). As in all the arts and sciences, trying is critical. But that trying turns into practice and that practice turns into performance.

References

Painting
page 49 Edgar Degas “The Dancing Class” Musee d’Orsay, Paris. © Photo Scala, Florence

Photography
page 44 © 2004 Brockhill Performing Arts College.
page 54 © 2004 Brockhill Performing Arts College.
Chapter four

Dancing Together

Rule-making and rule-breaking

The difficult cognitive work involved in simultaneously following and breaking rules creates dance. The dance programme at Brockhill Park takes the challenge of knowing rules in these seemingly contradictory ways into their performances as well as into their intensive study of the arts curriculum. It is very seductive to think of a dance programme only in terms of its star performances, numerous public service appearances, and acclaims for innovative work. Yet this chapter looks behind these creative productions to the deep foundational cognitive work that goes on within the dance classes of the Phoenix Arts Centre at Brockhill Park.

The argument here is that many ways of learning come together in dance and that this art form reflects in transparent and convincing ways the parallels of language and learning between the arts and sciences. Moreover, dance demands body movement. For adolescents, growth in motion brings numerous benefits. Bodily awareness increases, to be sure. But so does the need for interdependence with other young people within the challenge and high demand of performance. Seeing the self as learning through dance receives reinforcement along multiple dimensions (see Ball & Heath, 1993 for more on this point). Young dancers learn above all else that they can learn.

Winning specialist status as a performing arts school in the spring of 2004 did nothing to release young Brockhill Park dancers from their basic lessons, sturdy practices, and consistent thinking about learning. If anything, it intensified their commitment to the arts. The school promised others and its own members that scores on GCSE’s and other tests would continue to go up while the dancers would also maintain their strong record of praise-worthy performances and innovative work in communities throughout Kent.

At Brockhill Park, the dance department follows one of the cardinal premises of highly attractive learning environments that draw and challenge young people. It is possible to work from beginner status in year 7 right on up to advanced status in the prime dance company of the school in years 12 and 13. Thus young people see stages of development stretched out in front of them. They know the sequence of skilled dance groups to which they can belong and whose goals they can strive to achieve. [For further discussion of the importance to adolescents of having the challenge of seemingly unachievable excellence represented within a stair-stepped series of advanced-skill groups, see Heath & Smyth, 1999.]

Within all the work of the dancers, most particularly that of the oldest students at Brockhill Park, the looming challenges, whether in tests of their GCSE’s or in civic or school performances, never lie far outside students’ awareness. Yet the innovative and cross-cutting aspects of the life of dancers at the Phoenix Centre show no signs of contradiction between superb dance performances and excellence in test achievement as
well. Brockhill Park is consistently within the top five schools in the United Kingdom for the GCSE in dance. As they move from their first year of study of dance at Brockhill Park, many students seem to find it natural to balance the demands of simultaneously preparing for tests, study sessions, and instructional lessons in which they will work after school to teach younger students. The natural combination of all of these tasks depends in large part on the modelling of the advanced students (years 12 and 13) of InStep Dance Company, the most advanced performing co-educational group of dancers. This company was founded in the 1970s in response to requests from school leavers who wished to continue dancing. These students stay on at Brockhill Park to make up the most senior dance company and also to take on teaching duties at nearby community schools as well as with very young children in the afternoons. The view that the director has of the group and indeed of aesthetic pursuits is frequently expressed in communications that go out to the community. For example, a memo sent out to potential audience members announcing a programme in April of 2004 indicated that InStep would be providing a special performance to celebrate the school’s achievement of status as a ‘specialist arts college in performing arts.’ The memo noted that this status would ‘give the school more opportunities to extend dance and drama opportunities for the community’ However, perhaps the core of the letter was in the following paragraph which stated: ‘But it (the new status designation) is so much more than that! Those who involve themselves in artistic endeavour have other skills. They are team players, flexible and able to cope under pressure, they enjoy problem-solving, and they understand the value of collaboration and co-operation. We hope therefore to bring all this to the community through a programme which responds to need.’ Here it may be useful to look at how dance as the medium of learning carries special features that intensify for students and the community the effects of organisational structures that surround the dance programmes of Brockhill Park. Dance, like other arts, always manages to find its way into many other aspects of academic learning and into the community, as the quote from the community invitation above notes. This point may seem obvious, for it has surely been the backbone of argument by arts educators who provide numerous kinds of evidence that work in the arts heightens motivation and foundational cognitive work for advancing learning in other fields.

Three R’s — roles, rules, and risks — find their way into the arts, as they do the sciences, through project-based work.

Across post-industrial nations, not only classical forms of dance but also international and modern dance find favour, as do movement classes, study of dance, and even choreography. These are often recommended as support for numerous other kinds of learning. Physical rehabilitation and mental health programme directors, as well as physicists and neuroscientists, bring body movement into their work in order to increase the number of channels for absorption of key learning principles. Some of these principles relate to the need for exercise to maintain physical mobility following bodily injury or as age advances. Others argue the key importance of
specific aspects of work in dance, for example, the power of watching oneself move in front of mirrors or in collaboration with others.

Looking at the self in actual visual reflection can open up for shuttered minds or damaged psyches the power of moving together, seeing oneself in motion, and learning the interdependence upon which dance depends. Throughout England, dance has achieved considerable prominence not only in programmes for the elderly and physically or mentally challenged, but also within prisons and juvenile detention centers. Achieving discipline of the body brings greater mental regulation as well as an altered sense of what is possible for the self. [See, for example, Greenland, 2000 and publications of the National Dance Foundation as well as numerous articles in the Foundation’s publication *Animated*.]

Dance brings the body into physical practice of some basic laws of physics along with a deepened understanding of key ideas related to balance, weight, proportion, and dimensions of duality. Dance makes abstractions concrete through embodiment. Dance insists upon inner vision, for without highly technical knowledge and equipment, dancers cannot see both the precise position of the moment and its place in the ongoing movement of numerous positions working together toward a unified sum total. Thus those dancing as well as those observing dance have to keep envisioning both what is happening and what is about to happen. When one is the dancer, these mental moves also trigger muscle responses, so that with practice, the dual memories of body and mind work automatically (see Cheville, 2001; Farnell, 1995; and Johnson, 1987 for more on the linkages between memory in the body and in the mind.)

Ideally, this combination of not only knowing that something can happen but also knowing how it can happen works across all subjects and fields of learning. In other words, the young learner who gains knowledge of calculation also internalises scenarios or situations in which he or she might be the actor or agent putting those calculations into play. Understanding mathematical problems, as well as principles of science, lies within the capacity of a learner to set the self as actor into the problem. The self as actor then sets about to make all the components work.

Dance is a prime metaphor for such learning. Every piece of choreography is in some sense a problem or a series of scenarios that move forward through numerous combinations of simple and complex moves and calculations. Young dancers gain experience in taking small moves and sequences, carrying them in visual and bodily memory, perfecting these in practice, and then seeing all of these moves gradually combine into a whole piece (Hagendoorn, 2004). The same can be said of the problems of science: managing problems or questions within science depends upon moving forward through combinations of simple and complex moves, understanding the weight, power, and other attributes of each of the components.

It goes without saying that science and other problem-based areas of learning parallel dance in their combination of rule-making and rule-breaking. Every simple move has within it the potential for a unique twist or combination with another simple move. Once the
basic move has been mastered, dancers can then begin to break some aspects of the fundamental rules that make up that simple move. Rule-breaking in combination with the mastery of rules create innovative units that can then combine into whole pieces marked by creative twists and turns (see Shapiro & Shapiro, 2002 for more on the extent to which body movements reflect grasp of the particular and singular as well as principles of combination).

Beyond understanding the simple-to-complex rule-making and rule-breaking of dance that bears similarities to learning in the sciences are the many links between dance and language. Upon initial contact with this idea, there may be a sense that any claim for this similarity is counter-intuitive, for some would say that the movement and engagement of body in dance precludes words or any form of verbal expression. Yet it is in the underlying structures and processes of dance that we find deep parallels with language. Some speak of the “syntax” or “grammar” of dance—the ways in which rules fundamentally establish the possibilities of combinations. These possibilities lie in core rules; in the English language, for example, rules tell us that, in general, nouns precede verbs, and they must match in number within a single sentence. Plural nouns take plural verbs. Other rules tell us which pronouns are feminine and which are masculine, and from many other kinds of fundamental rule knowledge, we learn to put sentences together into longer stretches of discourse in order to make ourselves understood.

Language also gives us the economy of categorisation. At the most basic level of human understanding, we have to gain a sense of taxonomy. From the time we are very young, we begin to learn the names of things that go together in categories. Thus we can name an item within a sentence, and listeners who share this taxonomy will know that the item named shares characteristics with other items in the same category. Categorisation is economical, and its foundation within language means that the build-up of categories and their combinations is fundamental in all the arts and sciences.

For example, dancers categorise steps and moves together, so that they can use shorthand terms or moves to signal an entire set. But they also know that a chaotic mix of these steps and moves cannot take place, because of certain rules as well as the physical limitations of the human body in space. The same is true of language: speakers learn to break the rules and to create while also knowing which aspects of rules have to hold to certain constraints of what is possible within the grammatical system. Dancers learn the rules, knowing that only with practice and great improvement in carrying within their heads a piece of choreography will they gain the competency to know which rules can be broken and how to do so. The same is true of competent language performers. While much of what we say echoes or carries the voices of the words of others, every utterance is in some way unique or creative. This puzzling, seemingly apparent contradiction can be made because every utterance has a different context, set of actors, and host of expectations and accompaniments, just as does every dance performance. Thus both forms of communication depend on familiarity with what has gone before along with new reading or interpreting of what is currently taking place.

Perhaps most important in understanding dance (as well as other art forms) in parallel with science and language is the power of interpretation that works on combinations of units. We understand because we come to know not only single units or words in language, but through their combinations into larger chunks of discourse. A dance “piece” or “number”
parallels a chunk of discourse. Through its single units of moves in combination, dance opens up to viewers a sense of story, description, explanation, along with emotion and intensity of feeling. None of these may literally be “in” the dance number or “in” the sentence or paragraph. What emerges as the whole is certainly greater than the sum of the parts. It may be helpful to remember that it is rare after viewing a dance “piece” that novice or inexperienced viewers can verbalise what they “sense” or “feel” from what they have just seen. Yet there has been mental interpretation as the viewer learns from the performance.

It is critical to distinguish interpretation from comprehension. In teaching beginners to read, instructors focus on teaching how to “learn to read.” Such learning is generally thought of as gaining “comprehension” of the words that make up the written text. Here the underlying assumption is that the reader will come to share something that is very close in meaning to that held by the writer of the words being read. Yet for all texts beyond the very simplest, what matters is interpretation. We cannot interpret unless we bring into the effort our own experiences as well as our reading of the given words, dance movements, and other signs to make meaning. Thus we move from “learning to read” to “reading to learn,” and no author or instructor can ever predict with certainty what someone will actually learn from reading a particular passage (Rosenblatt/1994). (Wolf, 2004).

Similarly, no choreographer can ever be sure that what was in his or her mind will match what comes up in the mind of the audience for a dance performance. Herein lies the power of communication through dance, for unlike other art forms (such as sculpture, painting, ceramics, etc.), every viewer is intimately familiar with what makes dance just as every listener has intimate familiarity with what makes language. We all know our arms and legs, and our heads, as well as our torsos and toes. We know generally the rules of how these bend and can move together. Similarly, we all know what words are, and we know many words (some 3000 by the time we enter school). We also know quite a bit about how they can be combined.

Both verbal language and choreography then depend on interpretation of the very familiar into new and creative combinations that will generate new meanings. We expect differences between the ideas of the creator and the viewer to emerge. Therein lies the ultimate tension of dance as well as of language—the confirmation of the possibilities of different understandings by following and breaking rules and combining their units in new and unusual ways. This is why we can think of both dance and language as highly generative. They are not about imitation or repetition any more than they are about only comprehension; they give us new learning that we ourselves can create as we see and hear.

**Breaking away**

This section outlines several ways in which dance breaks away from the usual rules, not only of everyday interactions, but also of the usual expectations of dance that may be based on familiarity with Western classical models of dance. Within their dance, young people at
Brockhill Park (as well as in outstanding programmes elsewhere) break away from given or fixed ideas about gender relations and the isolation of one art form from another. They explore in safe zones youthful risk-taking and ways of hypothesizing their bodies in the midst of the physical and hormonal changes of adolescence.

At Brockhill Park, older dance students have opportunities to choreograph their own group pieces, often boys in one group, girls in another. During certain long weekends throughout the year, the older dance students gather on Friday afternoon and begin working on new pieces of choreography that they know they must perform for the other group (boys for girls and girls for boys) on the next afternoon. Once these performances and critiques end, then the two groups work to bring their choreographed works together into a single piece. Thus the original creative work of each group is now reworked through and with the creative work of the other. Often several months will pass before members of either group will have an opportunity to perform or even think about the pieces created on this special weekend of work. Yet when the next Friday-Sunday marathon of choreographic work comes, they often return to the earlier piece, refining and reviewing it as base for new additions and multiple changes. The cognitive work of carrying “in the head” and in body memory pieces produced under the tight deadline and intensity of this work weekend strengthens the memory and strategic thinking of the dancers in their other work (for more on this point, see Farnell, 1995).

The media, much propaganda, and many individuals perceive the need for traditional roles that separate the tasks of males from those of females. Often these expectations amount to relatively submissive and dependent roles for women and highly aggressive and dominant roles for men. Brockhill Park dancers, in their choreography, as well as in their planning sessions, bridge these divisive distinctions. Often they will, for example, seem to marry martial arts with dance; at other times, they invert traditional male-female roles through creative uses of props, themes, or couplings that never seem to centre on a duo of male and female. In the quasi-theatrical performances created, no single hero or heroine emerges; instead, a collective grouping that includes women and men proves to be the dominant force, the defining element, of these performances. It appears to be the case that at some subconscious level, the young men and women want a means by which to contest, interrogate, and transcend the constraints of everyday mores around gender roles. Dance offers that means.

This subversion of the expected in gender roles is, no doubt, helped by the fact that the young men who go on to specialise in dance in years 12 and 13 and to prepare for their GCSE in dance are often males whose bodies resemble those of athletes. Moreover, because as the older students work together in the cross-over choreography sessions of the high-cognitive-demand weekends described above, they learn to see roles and moves as detached from a single gender. In addition, the interdependence of dancers makes them familiar with one another’s bodies as props, known now not for their suggestions of sexual intimacy but instead for their reliability in executing difficult duo, trio, and group moves.

Dance generates a kind of collaborative glue that takes everyday inhibitions and recombines elements generally seen as separate. This generalisation is true not only of the way in which dance can leave behind the dichotomies of male and female as fixed in absolute terms, but also in the way in which dance attaches itself to other art forms.
Costume, scenery, music, as well as the architecture of space, all figure in dance. At Brockhill Park, dance takes place in combination with written text, performed poetry, and visual arts. Dance often forms the background or the punctuation for these. Dance requires that the young people also work on producing the text that will accompany their public performances. They help think about the written programme notes covering historical events, rituals, celebrations of the school, or collaborations of special types and purposes.

An illustration of such an occasion came in a community-partnering programme, entitled **Fragile**, that asked dancers to partner with someone very dear or special to them. The lead artist, choreographer Jamie Watton, worked with Robert Jarvis, Creative Partnerships’ artist in residence at Brockhill Park during the 2003-2004 academic year, to develop the idea. Together they worked with several other artists and musicians to help the dancers think about just how dance could be a kind of binding experience for new kinds of partnerships. Some dancers chose a grandparent; others chose a young cousin or sibling; others chose friends or parents. The event brought high emotions, for audience members saw cross-over bodily communication and connection between generations and across ages that could not have otherwise been imagined. Video and artistic background, as well as the musical compositions of Jarvis, accentuated the uniqueness of the event. Yet within this public performance also lay a metaphor for the work that goes on at the Phoenix Centre several afternoons each week when mums and dads bring their toddlers there for dance classes. Many of these parents were themselves students who took dance at Brockhill Park. In a community miles from the nearest professional dance company or setting for regular dance performances, parents pass on to their children the direct experience of dance. In so doing, they also ensure that the young know how neither dance nor any other art form lives without artistic collaboration.

Dance generates interdependency and cross-over knowledge. Often the Phoenix Centre hallways are blocked by groups of dancers studying television monitors; often these older dancers look in on or lead younger dancers in practice as well as in rehearsal. Dancers seem ever-ready to illustrate their adaptive skills across age, cultural, and institutional settings. Dancers from InStep, the community dance company, go once each week to teach at one of the local primary schools, Hythe Community School. During the 2003-2004 academic year, their work with the students inspired some young artists to create sculptures similar to those of Giacometti [See Heath & Wolf, 2004 for further information on the role of Brockhill Park dancers in the visual learning climate of this primary school.]

Dance demands immediate display of co-operation and literal dependence on the strength and ability of others. Perhaps most important, dance group members rely on other participants to be consistent and to act with agreed-upon predictability in performance. Visitors to the Phoenix Centre often noted the respectful climate of the place. Students listened quietly or stood and watched study sessions of older students in the hallways. Students generally remembered to take off their shoes before entering the dance studios. The interdependence of all who were at work in the Centre seemed to give off the message of serious work—even in the midst of the joyful play of creating a new piece. Here we are reminded of the words of philosopher Hans Georg Gadamer (1993, p. 102) who wrote: “Seriousness is not merely something that calls us away from play; rather, seriousness in playing is necessary to make the play wholly play.” The serious, yet playful atmosphere of
the Phoenix Centre carries over into the focused attention that dance instructors generally receive in their dance classes, even with the beginning dance classes for students in years 7, 8, and 9.

Dancers cannot function without a high degree of interdependence that is immediately evident to thoughtful onlookers. Collaboration and ongoing co-operation exist, to be sure, in other art forms—mural-making, video arts, or dramatic productions, to name a few. But in dance, especially that influenced by the martial arts, slip-ups or lapses in responsible interdependence make themselves immediately and often dangerously evident. Again and again, dance illustrates itself as a direct and high-risk way in which members of different age and academic abilities can illustrate their trust in one another. These young people use dance in displays of knowledge and immersion — at a bodily level and not just in talk — within one another’s frames of ideology or academic levels.

Dancers at Brockhill Park—even within the most advanced group—ranged from those historically labeled as having “special needs” to those destined to go forward to university education in either dance or another field. In addition, dancers who would in other contexts be judged as “skinny,” “overweight,” or “clumsy,” were included in every class and newly choreographed piece. If special adaptations were needed because one dancer was too heavy, too short, or not yet sufficiently accomplished, adjustments followed without snicker, snide comments, or discernible notice. Social, bodily, and intellectual inclusion become possible with dance, because its very being depends on interdependence across differences, so long as these rest within respect, trust, and reliability.

Just as cross-over takes place in popular music, so cross-over in dance forms sometimes develop as individuals begin to mix steps and moves. In other words, dance becomes emblematic of the core willingness of the young to cross their differences—often viewed by adult outsiders as insurmountable. “Getting adolescent males to touch one another or to touch a girl just to perform a dance number? Never!” Such statements were heard from audience members who first witnessed the dancers from Brockhill Park. These adults often said they could “never imagine our students doing this kind of thing.” Yet at Brockhill Park, the climate of respect that permeates classes as well as the high demand and consistent challenge of performance illustrate truly connecting mind and body through the aesthetic.

**The language of dance instruction**

During the course of this research, we observed many classes across levels as the Brockhill Park dance department taught or led special choreographic challenge weekends, such as those described above. Staff often had teachers-in-training working with them, as well as visiting dancers and choreographers. In addition, the composer Robert Jarvis worked with them on numerous projects throughout the 2003-2004 academic year. Moreover, during this year, the school was also submitting its application for specialist status as a Performing Arts School. Extra performances, often in connection with community events (such as the Canterbury Festival) or for Creative Partnerships Kent occasions of celebration, drew on their resources. Some of the older dancers were often away, auditioning for dance companies or for entry into universities or arts schools. In addition, several staff members had both family and health needs during the year that drew them away from consistent and regular teaching duties. Yet on any given day, a stranger walking into the Phoenix Centre
would have had to have extra-sensory abilities to detect anything more than the usual tensions of a highly active, multi-directional department. Members of the music, visual arts, and drama programmes moved in and out of the Phoenix Centre as well, often collaborating with the dancers on special projects and sharing the same students.

A visit in the autumn of 2003 from staff members of Newham Sixth Form College (New Vic) in London provided an opportunity for the year 13 dance students and all members of the staff teaching the arts at Brockhill Park to meet together. Though the purpose of the meeting was to consider possible projects of collaboration between the two institutions, a guiding question set the tone for the meeting: “What can we learn from the way you work?” The meeting provided a mini-case study in organisational learning (see Senge 1990; Senge, et. al.,1994 for more on organisational learning). The group examined project work, role of outside arts, management systems, comparative resources, and how any transfer of “what works” always had to be seen in terms of local contexts.

A seemingly casual question from one of the visitors from New Vic prompted numerous reflections on teaching and learning following the introductory discussion of organisational learning. This question was: “Tell us the most inspiring project you’ve done here.” What followed were groans, created by the group’s sense of an over-abundance of cases from which to choose. Jackie Mortimer, director of Phoenix Arts Centre, looked perplexed and slowly began: “Every lesson is inspiring…. But then there’s the Barbican last year. We took these children, I’m sorry, young people. The youth looked so comfortable, like they should be there.”

Other staff members and students followed at first with other examples of travel — to France as well as to the Barbican. But then one student moved beyond the initial question to take up the spirit behind previous comments. The student said: “What happens is that these times just reinforce what you can do and encourage you to do better.” One dance staff member added: “And that sense of doing better…it just travels through the place. For the year 7, 8, 9 students, we have a project lesson for them. There are common themes for them to explore musically, to explore through dance, drama… We have long conversations about the process as well as the product. This kind of thing is really inspiring for me: put kids working independently and watch their enthusiasm. Now I want to add film [to the other arts].”

One New Vic visitor asked: “How can you tell when teachers are inspired?” A chorus of responses or a “swarm” began, but one student won out: “I can see [name of one dance instructor] get a particular charge.” This teacher broke in and said: “I get a particular charge, yes, and when I see the enthusiasm for taking risks, and the way it inspires the students to work harder…. Others added their examples, and someone brought up the idea of the special inspiration that came to them from “partnering.” Many cases of partnering with other professional artists, businesses, and community members followed.

Then the New Vic visitor asked a question that momentarily shut down discussion: “And when do you cross-over into other areas of the school itself for partnering?” Everyone — students and instructors alike—looked at one another. Jackie broke the silence: “We are constrained by the time table. Only brave teachers will cross over, for they have to take chances to cross over within the time limits of all the students. The teachers are too tired;
they have to do what they do. We’re willing, but often too tired." [Note: During the 2003-2004 year, the length of classes for lessons was 45 minutes only, and lunch times of only 40 minutes were staggered through the middle of the day. These time constraints operating on a campus of nineteen of buildings provided major logistical challenges in the movement of students as well as in staff monitoring responsibilities not only for student behaviours but also litter collection. For more on this point, see chapters two and three.]

Robert Jarvis broke the second silence: “At New Vic, you do 22 hours a week, but you don’t do litter. These dance teachers do 22 hours on a Wednesday and Thursday alone.” Everyone laughed, and Jackie Mortimer turned to the researcher and asked: “Did you write that down?” At this point, students and teachers began to talk about the ways in which students’ commitment to the project work of dance helped them mature in their understanding of differences across subject areas and of their own capacity for adaptation. Jackie said: “We [in the arts] require the kind of commitment from these students that means they have to find ways to balance—time, people, jobs, and a lot of other things.” She continued: “When students get what they see as a real challenge, the dynamic changes.”

These comments provide something of the ideological context or the set of ideals behind the language of instruction within dance classes. The features in the accompanying box have been drawn from approximately 40 hours of audiotaping within dance classes. But the features also reflect patterns revealed through 20 hours of audiotaping of science projects and project work by instructors in other arts at Brockhill Park during 2003-2004 and the first term of 2004-2005, again reiterating the links between the arts and sciences. Two guiding

<table>
<thead>
<tr>
<th>Language description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructors consistently thank students (as a group or as individuals) within the</td>
<td>Thanks to those who got here earlier to help with the tarps. Thank you, Derek, for getting that chair out of the way.</td>
</tr>
<tr>
<td>first five minutes of class.</td>
<td>See what you think of this….Let’s think about this as your group gets together to work it out. Can I just give you something to work on? Are we not doing the jumping bit?</td>
</tr>
<tr>
<td>The language of new ideas, facts, or moves</td>
<td>That’s like not remembering which side of the bed to get out of! Just think of a stoplight gone mad—on, off, on, off, on, off. Maybe that pace will do it.</td>
</tr>
<tr>
<td>is that of suggesting not telling, of thinking through, not learning what’s given</td>
<td>I just feel you’re fighting it a bit on that count…. I’m really sorry about the mess here this morning; you were great to pitch in and help out on clean-up.</td>
</tr>
<tr>
<td>now.</td>
<td>[in the midst of a dance move] What’s that called? How’s that like one of the GCSE problems? Remember that?</td>
</tr>
<tr>
<td>Metaphors and similes cut in and out of the talk of students and teachers.</td>
<td></td>
</tr>
<tr>
<td>Expressions of affect and emotion come often with regard to the work or tasks before</td>
<td></td>
</tr>
<tr>
<td>the group.</td>
<td></td>
</tr>
<tr>
<td>The need for learning highly specific pieces of information and rules is made clear,</td>
<td></td>
</tr>
</tbody>
</table>
principles define all the features: 1) the task before us all is the creation of excellence; whatever we are doing now relates only to that group goal; 2) we are all in this together, sharing areas of experience, learning and thinking; we will remember that there is no learning without thinking.

Neuroscientists who study sensory processing in dance and choreography delineate movements into global—those involving the whole body, arm, or leg—and local—those engaging much smaller body parts, such as a finger. They conjecture that dancers stretch or contract the visual focus of spectators into space or onto a focal point. The language of dance makes transparent how dance teachers and choreographers manage the attention of students—by expanding and contracting the visual field, by shifting from sensation to factual label, and by moving between the literal and the metaphorical. Although they certainly go against the logic of consistency in method or approach in teaching, these back and forth emotive, cognitive, and body movements hold attention. Eventually, no doubt, neuroscience will open up just how such seeming inconsistencies in shaping environments of learning work neurologically. For now, we have only the language of dance instruction and observations of these calls and responses. Taken together, these suggest reciprocity across several areas of the brain and the critical role of perceptual anticipation and prediction in turning on learners’ mental and bodily resources.

**Hypothesising the body**

The mental jump from thinking about the way that dance hypothesises the body to recognizing the impact of taking on a real role in learning may seem broad indeed. Here, however, we argue for the importance of looking at the nature of learning in dance for what we can bring into other areas of the curriculum. Moreover, we continue to push the parallels between learning in the arts and sciences.

In a society where many high-profile individuals, such as corporate executives or politicians, make their mark by living in the head, dance is increasingly becoming for young people a means of being in the body. It is as though many wish to reject, delay, or avoid, for now at least, the need to depend largely on the cerebral and verbal demands of life within the knowledge industries. Dance is a means they choose to persuade, display, and create continuities, congruence, and contradictions.

Young people publicly take risks with their bodies in a moral and disciplined form. At some level, the body is the obvious means of dance, but youth at Brockhill Park pushed the hypothesizing value of dance. Boys who by their body build and demeanor stood out as dominant males danced alongside boys of slight physique and less mature ways of presenting themselves to the world. The dancers appeared in their relations with one another to grow into seeing the imagined—a world other than what is or can be verbalised—as most effectively expressed through dance. Thus they would dance what they could not verbalise.

Talking about how to create a piece of choreography with a certain theme distanced taboo topics as well as actions. The verbal so dominates knowledge management and production—especially in schools and academic standards of assessment, that the young dancers seemed—almost purposefully—to move as far away as possible from the verbal to
express their strength, their resistance to usual role assignments, as well as their new and collaborative scenarios of the future or the imagined. Yet after such moves away, they could also come back to verbalise process, sensation, critique, and expectations.

A metaphor of what may have been at work subconsciously for the young dancers comes in their frequent choreography around dreams. Distanced by being “not real,” dreams became a medium for hypothesising. Dream has always marked even the most classical forms of dance; conflicts and challenges meet resolution in dreams. Young dancers in their choreographed pieces took up basic dichotomies — good and evil, male and female, old and young. But they moved beyond these dichotomies to blur rules, morals, and boundaries. They inserted in their dream-like pieces the private urges of young people for risk—sexual, drug-induced, sensational, and in super-hero dimensions. Within their pieces, the dancers seemed aware of these expectations by the public of the risk-taking of the young.

But then they turned these expectations on their head. Especially for the more advanced dancers, they seemed to push themselves more and more to demonstrate publicly another kind of risk that they took on with their bodies as they displayed their knowledge, collaborative creation, and messages of new meaning for their elders.

Throughout history, such has been the case for dance: that which is prohibited or taboo elsewhere can find its way into the messages of dance. The young dancers of Brockhill Park had seemingly internalised this aspect of dance history. Note, for example, a comparison with early 18th century England and the Continent when highly formal dances, such as the Minuet, spread in the private sector. Here women, simultaneously creating dames’ schools and creating by hand the earliest libraries of children’s literature and children’s educational toys, encouraged dance as the highly formalised focal point of ‘informal’ social gatherings. These occasions, marked by ritual and routine, as well as specialised displays of costume, provided a disciplined, moral, and visible framework for behaviours otherwise unacceptable under the public eye—touch of males and females, for example. At Brockhill Park, many other kinds of behaviours generally not publicly permissible by peers or adults entered into the young people’s dance. These included: satirical treatments of academic topics (such as punctuation), crossing of gender lines in role behaviours, inclusion of the non-trained with the trained in a performance (see Chapter five), and mergers of art forms and science representations embodied to the accompaniment of both classical and contemporary music.

Like early 18th century dance, contemporary dance by the youth of Brockhill Park provides both competition and collaboration across boundaries. Public bonding across levels of ability, age, and gender often takes place within these young dancing groups and their classes. Among the most advanced dancers at Brockhill Park, teachers purposively ask that they include midway through practice a new dancer, unfamiliar with the choreography. She or he watches the group perform, then joins in, and is tutored in the midst of the dance...
by the others. This kind of challenge from on-the-spot, in-the-moment observation marks much of the work of the dancers. It appears that through these kinds of challenges to ways of learning, the dancers neutralise the potential dominance of any member as newcomer or less-able or less-knowledgeable by having all members agree to bring the newcomer into the group. Moreover, these occasions often ended with the instructor asking the newly included dancer: “And how were you thinking when you did that?” Dancers had to slip into their own minds and ways of learning to elaborate verbally on their choice between standing back and observing the routine and then joining in the dance and following others by observing while doing. In summary, the power of dance for these groups appears to reside in the interpersonal bonding and equitable spread of challenge to exhibit discipline and skill, as well as mutual engagement in portraying by nonverbal means ideas that are not usually expressed verbally.

To bring into stark display how dancers’ hypothesizing through the body demonstrates creative learning, let’s compare some of the features noted in this chapter with those noted most frequently by employers as highly desirable in employees (SCANS, 1991). These characteristics are noted as particularly important among political and business leaders urging greater enterprise and entrepreneurship in the national economy.

<table>
<thead>
<tr>
<th>Creative learning for Enterprise and Entrepreneurship</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Intelligent, interdependent organisation embedded in a network of other kinds of enterprising creative ventures</td>
</tr>
<tr>
<td>• Commitment in creativity toward a product or outcome that will be judged by authentic critics, clients, and co-participants</td>
</tr>
<tr>
<td>• Multiple intangible skills, such as patience, observation, problem identification, strategy-building, and explication through means other than the verbal</td>
</tr>
</tbody>
</table>

Though rarely articulated as such, the master teachers of dance were preparing their young dancers through their practice and performances, as well as the special challenges of learning they set up, for learning for the future. One young dancer who completed his studies went on to work as a waiter in one of the most respected local restaurants—widely known not only for its fine cuisine but also the artistry of presentation of the food. Within a year, the former dancer was training at the restaurant as a chef. When we asked him how he saw himself as dancer in his current work, he answered quickly: “in so many ways from timing, to high demand, to constantly being “on,” to knowing how to work with other people, to do something for which you usually get only one chance at any one time of doing it really well.” Puzzled by this last point, we pushed for clarification. He smiled and said that it used to worry him that one of their dance performances that they all knew was truly “the greatest” had no permanency—except in memory. A fine dinner beautifully presented is the same way—“here in beauty and then over and gone.” We left the restaurant that evening thinking about transfer of learning in new ways.

Whether as future family members, academics in further education or at the university, independent community artists, or local business entrepreneurs, these young dancers carried with them the organisational and strategic thinking skills, as well as the language models that dancing provided. These mark the sciences and arts, and they travel well into the real world of business and commerce, service and aesthetics.
Dance at Brockhill Park showed itself to be highly participatory and engaging, blurring lines of division, as well as distinctions among art forms, and separations of onlookers or spectators and performers or interpreters. As such, in anthropological terms, dance for the young of this study speaks to adaptation of the ordinary and the institutional into the extraordinary and the organisational, to creation of the moral and the disciplined in open performance, and to the enterprising, creative, and collaborative potential of the arts. Finally, dance as an art illustrates well the linkages of the arts and sciences in both process and performances of learning.

In a society defined as a knowledge industry where most workers tend to make their living by manipulating information, finding more knowledge, and assessing its merits, some may regard it as a stretch to look at dance and other arts as accomplishing what the hard sciences do. Yet both live within the hypothetical—what is possible assessed within the context of what is probable. The release into respect for exploration and the need for interdependence bring learning along and lay down foundations for sustaining it across life-wide dimensions. The poet W. B. Yeats once wrote:

O body swayed to music, O brightening glance,
How can we know the dancer from the dance?

The answer, of course, is that we cannot. In dance, as in many other art forms, all that eventuates in the ultimate performance comes both from what is within the dancer and what it is that dance infuses in body and mind.

References


**Painting**
page 75 Pietro Longhi “The Dancing Lesson” Accademia, Venice © Photo Scala, Florence

**Photography**
page 60 © Gjon Mili’ Time & Life Pictures, Getty Images
page 65 © 2005 Roy Smith
page 75 © 2005 Roy Smith
page 80 © 2004 Brockhill Performing Arts College
PLEASE KEEP TO THE PATHS
Welcome to
Brockhill Park Performing Arts College
11-19 Foundation Specialist School & Sixth Form Centre

Shaping the future through Creative Learning

Headteacher: Anthony Lyng TD BEd(Hons) CPhys MInstP

01303 265521

office@brockhill.kent.sch.uk  www.brockhill.kent.sch.uk
Chapter five

Changing systems: new places, times, and learning leaders

Learning environments within larger systems

“Learning for a lifetime” was the mission statement of Brockhill Park Secondary School at the opening of the 2003-2004 school year. The core question underlying any mission is one that speaks to the system behind the learning environment. What is actually meant by the mission statement, and what might be needed within a system to have that statement enacted for members of the school community? What has to be learnt for anyone to be ready for a “lifetime of learning”? Clearly the answer would not include only subjects of the curriculum, but also methods of learning and of assessing one’s own progress, along with that of others.

“Learning for a lifetime” suggests a holistic approach toward learning—a toolbox, set of attitudes, and frames of learner self-confidence. This approach also has to acknowledge that portrayals of learning depend not only on skills and information, but also on communication competencies. How and when one communicates about learning matters greatly, as does the direct experience or participation through which the learning experience has been gained.

Experience usually brings opportunities to learn through mistakes, mentoring, role models, observation, and experimentation. Most learning throughout life from early childhood into retirement takes place through these means. Learning within formal education institutions—through instruction and within defined subject areas—represents only a small proportion of all that goes into a lifetime of learning. [See numerous policy statements in England and Europe on “lifelong learning,” such as Field, 2002; Longworth, 1999; Luker, 2001.]

Lifelong learning has become a mantra in cities and communities across Europe in the past decade. The mission statement of Brockhill Park links to these communities in many ways, for their niches and intermediate platforms of learning have begun to show characteristics identified as critical in the 21st century. The following chart indicates the features that have been activated at Brockhill Park.

Putting these features in place depends on enabling students and staff members to play multiple roles and to explore through a variety of means and audiences how to represent and perform their learning (Croply, 2001; Schechner & Appel, 1990; Wilshire, 1982). While considerable challenge rests in these features, Brockhill Park is on its way to planting lifelong learning deeply in the value system and study habits of many of its students. The school’s work in creative learning in arts and sciences, student research, and a growing initiative (see chapter six) based in international exchange and agricultural sciences is leading the way.
In order for schools to instil and to reinforce these attitudes and means of lifelong learning, they have to do so by stepping beyond direct instruction. Creative learning opportunities based in meaningful project work represent the ideal means for such steps — mixing ideas, information, and skills gained across curricular areas, making and testing new kinds of connections, and creating the means of working toward unexpected outcomes. Added incentives and possibilities come when projects travel the full arc of performance discussed in previous chapters. This means that in doing projects, students and teachers are not only benefiting their own learning, but also the life of the classroom, school, or community. For example, the Tourism programme, as well as Graphic Arts, Agricultural Sciences, and other departments, find means to link the work of their students beyond the lesson at hand.
Yet no amount of will or lip-service to the features listed opposite will guarantee that the route to offering creative learning to students will be easy. Teachers and staff members have to be part of the full environment of creative learning for benefits to carry over from the pleasure or puzzle of the moment into a lifetime of learning. Teachers themselves need opportunities to experience creative learning and not simply to hear about its philosophy, examples, or possibilities during an INSET session (see the foreword to this volume by Anna Cutler, director of Creative Partnerships Kent). Without directly taking part in mixing ideas and working toward unexpected outcomes, teachers will find little incentive in learning to gauge dimensions of progress on project work among their students. It makes a difference within the Tourism programme that teachers as well as students learn a great deal during their visits to other countries, for such learning means leaving the usual path of “the lesson” and opening up the risk of undertaking a less directive way of teaching.

Critical to note is the fact that each teacher has his or her own perception of both teaching and learning and, even more important, of a zone of comfort with unpredictable processes or outcomes. Working outside a tried method or approach is impossible for some personalities, and any school undertaking creative learning opportunities must respect differences in zones of comfort. Creative learning environments question methods of direct instruction, as well as the need to maintain the usual teacher-student roles. Thus, these fundamental features of creative learning not only challenge but also threaten adult instructors accustomed to performing with predictability.

Some staff members may demean “creativity” or “creative learning” as just one more national policy directive. These teachers, however, may see the importance of adapting their past approaches to instruction in order to help their students learn to prepare for inevitable societal and workplace changing demands. They know that the 3 R’s (reading, (w)riting, and (a)rithmetic) have now evolved for employers and civic leaders into demands for the 3 I’s (integrity, initiative, and innovative thinking). When teachers take this reality shift into their own self-assessment, they engage with experiments of change, particularly when they have opportunities to do so with other teachers and through alterations in the usual expectations of space and time usage.

Therefore, a key first target for change within learning environments is often the existing structure. Though challenging, rearrangements of personnel, time, and space can set the context for creative learning more safely than suggesting alternative instructional methods. Critical within such structural changes is some flexible time for teachers and students to consider together how these changes can foreshadow other fundamental shifts.

A flexible structure can allow “learning for a lifetime” to be tested, tried, and enacted. Most often needed is some alteration of the long-standing “lesson period” of a certain length, as well as shifts of course titles. Compare “History” or “English” to “Writings that Changed the World.” Though tests and other forms of accountability, such as attendance, must be taken into account, structures can find ways to balance the segmented measures of testing with project development.

Struggling with structural change is nothing other than taking on organisational learning.
Chris Argyris (1992), a systems analyst, whose early work spurred scholarly study of organisational learning states:

...organisational learning is a competence that all organisations should develop. The reasoning underlying this premise is that the better organisations are at learning the more likely it is that they will be able to detect and correct errors, and to see when they are unable to detect and correct errors. Also, the more effective organisations are at learning the more likely they will be at being innovative or knowing the limits of their innovation. (p. 1)

Ideally, individuals in most of society’s organisations have to see their job as sustained learning; businesses cannot survive without constantly being alert to changing markets, raw products, and manufacturing or servicing procedures. Yet formal educational organisations have never had to take seriously the challenge of organisational learning; publicly supported, they may seem to have a license to keep on with their old ways. Moreover, the public often clings to their idealised views of “how we used to do it” and therefore advocates for “same-old same-old.”

History helps explain why most parts of a school’s existing structure prohibit or shut out creative learning. For example, working with a team in order to find a solution to a problem should not be interrupted by the school bell; instead there should be room and time to let thoughts flow or experiments happen and to keep a close eye out for ongoing shifts that may be needed.

**Invisible niches hidden by discipline and curriculum**

**What then is a school with a mission statement of lifelong learning to do?**

What then is a school with a mission statement of lifelong learning to do? The research carried out at Brockhill Park indicates that putting ideals of innovation into practice can face immense hurdles. Yet even when only niches or “small switches” (a term contributed by Robert Jarvis) emerge, an ethos of change begins to take hold. Several spatial and time zones within Brockhill Park illustrate the working together of students, staff, and community members for the benefit of creative environments. We introduce here two niche cases — that of The Judith Centre and that of a far less formally organised niche — the Student Research Team who began working with the International Enquiry Network in 2003 - 2004.

**The Judith Centre - Supporting learning and reintegration**

The Judith Centre, located between the school farm and a sports field, offers a separate space that creates within it different rules and roles for students who have difficulties adjusting to fixed, predictable, subject-focused lessons in classrooms. Paul-Boehncke, ethnographer, records her first day of entry to The Judith Centre:

I notice right away that something is totally different in the two rooms of this container building. It is very organised and very clean, no stains on the carpet, no chewing gum on the floor. The walls are neatly decorated with kids’ artwork or computer prints — all of them with big name tags. There are at least five computers along the wall, a round table in the middle and a table in the corner with beverages, tea, hot chocolate, juice; on
another table are some board games. As the Learning Support Unit at Brockhill Park, The Judith Centre is part of a programme for schools funded by the government in order to reduce the number of students who are at risk of exclusion. Its purpose is to help students with behavioural problems or difficulties adjust to the regular routines of formal education.

Students from lower years (7 or 8), identified by a guidance team, can spend up to two terms (24 weeks) at The Judith Centre. After an initial interview about their school history and current problems at school or at home, students have a week of adjusting to The Judith Centre. They get to know staff and other students. They relax. As Mr. Pilling, Centre Director, explained “...they have some fun. It takes the pressure off them. They have experienced a lot of pressure at school, whether they might have experienced bullying or where they have bullied back.”

Following their initial week, the students have a look at the timetable. Together with peers and staff, each student decides which mainstream subject he/she wants to return to first. The student’s regular teachers are then notified of these plans, and as Mr. Pilling explained, every lesson offers an opportunity to check progress.

“It works very well. They have to check these four ticks:

- Arrived in lesson on time
- Listened to instructions
- Remained on task
- Worked without distracting others

And this gives us a good indicator of how things are going in class. Basically it is a programme of reintegration. It is the whole grammar of reintegration. That is the watchword. When they come here, they are told that they won’t be staying. It is very nice, that we like to have them, but they have to go back to school eventually, and it is going to be gradual.... It is not a rushed thing; it is very gentle. It is almost by osmosis; it creeps into them. They become nicer people. That’s not right to say. They are nice people; [but] they have actually opportunities to develop that potential by being in here. Whereas in school somehow, they put that nice person aside and become that nasty, reactionary person to survive”.

At The Judith Centre, many channels open through which students learn how to cope with anger, aggression, and fear. They learn to self-regulate so that they can begin to hold themselves in high esteem. Toward this end, they do “Classroom Skills Work” or have “Option and Circle Time.” During Circle Time, for example, they learn to discuss personal and school matters openly. In addition, they watch and discuss movies, and they do role-play, drama, and video work on such issues.

Mr. Pilling suggests that students come to understand that they always have a choice. “We talk about how we all own our behaviour. If you make a decision to behave in a certain way, you have made a decision. So we have choices, decisions, and consequences in that order. We help students understand: you have all these choices; you can choose this or that; once you make that choice and you decide to go that way, then you have to face the consequences, because it was your decision.... And they can talk about this in those terms.... They are very reflective kids.... I mean, none of this could work unless the kids make a decision ultimately to change their behaviours, because some fundamental aspects of any school will not change to meet what may be the needs of certain students”. The Judith Centre staff members recognise that some of their teaching colleagues have given students second, third, and further chances, only to feel that doing so has not worked.
Thus, the Centre instills in students the realisation that they and not their teachers are the ones who have to make changes and understand choices and consequences.

In conversations with researchers, The Judith Centre students volunteered that they knew they had behaviour issues on which they had to work. Indeed, students who have been at The Judith Centre learn to articulate problems in interacting with others or with institutional constraints as well as opportunities. On one occasion, ethnographer Paul-Boehncke and composer-in-residence Jarvis were engaged in a conversation about a computer problem when a student dropped by to listen. When the discussion became a bit heated, the student stepped in, mediating between the two adults and interpreting what each was trying to convey. When asked where he had learned this kind of mediation skill, the student smiled and responded: “Well I had some counselling earlier, and I had to do this with my parents, because they used to fight. And I have learned how to deal with conflicts at The Judith Centre…. Like dealing with anger...you can breathe a certain way, and that will help you not get into a fight, because you calm down a bit.”

At first sight, these interventions might not sound extraordinarily innovative. Social workers in many schools work hard to help students control anti-social emotions and succeed in school or mediate between students and teachers. However, The Judith Centre becomes unique through its direct acknowledgment that its work has to sit within an array of larger institutional contexts—from families to school to the world of employment—that are unlikely to change to accommodate young people’s transitional needs.

The matter of time constraints within the secondary school, as indicated in earlier chapters, pressures students who are having a difficult time adapting to Brockhill Park. Expressions like “So much work,” “no time,” “too much to do,” “so much going on at the same time” pepper the talk of teachers and students alike. Yet, at The Judith Centre, the approach toward time is one of transition, and everyone takes time for a cup of tea, a chat, or a discussion of issues needing to be solved. Look through the window at any moment, and a cluster of young people and an adult will be gathered around a table talking. It is as though time runs more slowly here, allowing a sense of relaxation and opportunity for reflection and growth toward self-regulation. Coming through as a central notion in this context is the idea of respect. As Mr. Pilling, the Centre’s director, suggests, “What we do is not rocket science. All we do is give students lots of encouragement; we listen to them when they have problems; we encourage them; we challenge them, and we talk a lot about behaviour.”

When reflecting on students who are making the adjustment to the secondary school’s time, space, and lesson requirements, Mr. Pilling recounts: “Some kids come here, and they must be horrified. I know when I came here, I was. I came from a very small school into this huge place. It took me about a year to get comfortable. Kids are much more adaptable. It takes them less time. But still, some of them you see standing around under trees and things, and they don’t have any friends and are feeling lost and frightened and very unsupported. Hopefully this means The Judith Centre can be the answer for some of them.”

Mr. Pilling often makes the point to students that institutions cannot bend to fit the individual needs of each and every person. However, as the experience of Brockhill Park shows, some changes can be made through niches for project-work, and even a few structural alterations can make the school climate seem more open to organisational learning. These can begin to reach out to the needs of students and staff members.
The Centre encourages pupils to develop positive relationships with teachers and to show that they have both respect and empathy for what adults in the school do and how they do it. In staff meetings, Mr. Pilling interacts with other teachers and looks for ways to reach out into the school’s community to show his understanding and appreciation of the task of working within the regular school schedule and lesson demands. He notes: “I think I encourage staff a lot. When new staff members come into the school, I encourage them to come and spend some time here. It gives them another dimension, and it gives me a way of being closer to the school.” In fact, some of the new teachers come once a week to the Centre, where they report learning multiple ways adults and students can communicate and encourage one another.

In addition, Centre staff members reach out to other school staff and do so efficiently, recognising time limitations for busy teachers. For example, Mr. Pilling announced that he would show a video film to the staff at one of the brief early morning staff get-togethers: “I’d like to welcome everyone to have a look at this video. I set it up this morning to show you the Charivari [art] workshop we attended yesterday. If you have time, take a minute to watch it, because it will be very worthwhile. We took three gifted kids and three students from The Judith Centre. As you watch, you will wonder which is which.” One of the students was known to many teachers as having been diagnosed with attention deficit disorder. Yet, the video film showed him fully engaged, co-operative, sustained in his focus, and articulate with other participants during the art workshop. In allowing the video film to continue to run for the full day in the staff room, Mr. Pilling showed respect for teachers’ limited time, while also inviting them to see students interact with others through changed ways of behaving within alternative environments.

Of particular note in the video film were transformations in language use for the Centre students. Many enter the Centre limited in their experience of identifying problems and talking through solutions. Through their many conversations with adults there, they begin to acquire fluency in some of the grammatical structures necessary for planning and critiquing their work and their own behaviours. Within only a few weeks, several of those in the video film had shown that they could take on aspects of leadership behaviour, increase their direct questioning, and set out alternatives of planning through ‘what-if’ queries to others and to themselves. Being able to accomplish all of these through verbal means helps students gain an understanding of the choice-decision-consequences ethos of The Judith Centre.

The learning that takes place at The Judith Centre consists in large part of the accumulation of and practice in the use of tools for lifetime learning. Within the Centre, students learn to set a task, stay focused, listen and look to self-assess, voice self-critique, and express opinions, ideas, or recommendations in appropriate ways. In addition to the quantitative increase in frequency of highly academic forms of language, such as comparative questions, hypothetical proposals, and critique, the students learn what working within an environment of creativity, healing, and restoring can mean. They gain experience and confidence in what it takes to succeed in lessons and also in the work of project-based learning.
Teachers whose students are at The Judith Centre also have the opportunity to respond to questionnaires that allow them to reflect on their teaching style and ways of dealing with students. Governors and parents are in contact with The Judith Centre as well. Parents are welcome to participate and to stay in touch with daily life at the Centre to the extent possible. They must agree for their children to take part in the programme, and they are kept up to date with activities and changes in student life.

Once students have met all the criteria for reintegrating fully into the ordinary schedule and life of the school, they participate in a graduation ceremony. Certificates, dignitaries, and a celebration make the occasion special in the life of each student and signify the transformations students have made. Nearly three-quarters (72%) of the students reintegrate into the school’s daily life without significant problems. Of those who continue to experience difficulties, a small percentage (1-2%) drop out of school completely. Others continue in alternative school programmes, sometimes taking their classes at a local community centre. No organisation can serve all its members, and some students will always have problems fitting into an existing structure. Brockhill Park School recognises this fact while trying to draw as much benefit as possible from having the Centre in its midst. Staff members across the school see daily evidence of the values of The Judith Centre as a niche of altered time table, project outreach work, and support for students’ re-entry to school life and future participation in creative learning opportunities that may come along for them.

Students guiding through research

Looking at creative learning within Brockhill Park Secondary School provided an opportunity to engage a Student Research Team (SRT). This group (brought together two classes from the houses of mixed-grade students. One class was led by Katie Rubython of the Science Department, the other by Sian Goss of the Dance Department). Both classes heard from members of the (International Enquiry Network) research team about what research could mean and learned some methods of data gathering (surveys, questionnaires, focus groups, observations, interviews, etc.). Volunteers from both of these groups came forward to work with the IEN on studying how language worked in the learning life of Brockhill Park.

The groups began their work early in the 2003-2004 academic year. In spite of almost insurmountable limits on time and space for meeting, those students who came to be called the SRT’s met several times to learn how research on language has to depend on collecting data from observations and close listening [for more on the specifics of the early research of this team, see chapter four.] This work helped the group gain a sense of learning from and about the immediate environment. By mid-year, SRT members had some awareness of themselves as learners (or indeed as re-searchers looking or searching again at what they might not ordinarily see). Furthermore, they were certainly beginning to engage in group meta-reflections on learning and how different environments or platforms of learning either did or did not exist within lessons and also in the general life of the school.

Later in the 2003-2004 year, the SRT members were ready to move their skills, under the direction of Ms. Rubython and Ms. Goss and Paul-Boehncke, to investigate relationships
between particular spaces of their school and certain kinds of behaviours—those present and those desired. The school had been plagued by disruptive vandalism during lunch breaks or between classes. Throughout the halls of the scattered school buildings, mud, trash, and abandoned food, book bags, and pieces of clothing created an atmosphere of disrespect. Though there were students and teachers on duty to pick up trash everyday, the majority of young people did not seem interested in keeping the school grounds clean. In spite of considerable attention to this and related issues by the Student Council, staff and students agreed more needed to be done.

The unkempt conditions grew worse in the cold and wet seasons, when the green areas between the classroom buildings and outside the canteen turned into large mud holes. From the muddy paths, students moved onto the grass, further extending the track of mud. These muddy open areas became particular problems in the small bits of time students had as they moved between classes or about the campus at lunch time. They had no place to congregate, sit and talk with friends, or “chill out.” Many teachers empathised with the students. As one remarked, “The students have nowhere to go. There is no place for them to hang out. If the weather is rainy like this, there is no space inside for the students to spend their break times, other than hallways or classrooms, but actually they are not allowed to be in classrooms or hallways in their break times.”

The SRT undertook the question of how the central area outside the canteen could be transformed for the benefit of students as well as in the interest of reducing the mud, vandalism, and other invitations to trouble. Researching this possibility lit a fire of energy, imagination, and enthusiasm for the team. Students immediately set out their own ideas, ranging from elaborate plans for a shop, skate park, or football field to ideas about simple benches and tables for eating outside. In their discussions, they considered implications that came with each new idea they developed.

Student 1: Making the space in an area for playing ball, a football place. And every lunch or something, we sign up, and get in teams.
Student 2: Yeah, we have to make a list, so there are no fights about who can play when.
Student 3: If you had a cage (a caged space for playing ball)... but the cage would stop people from getting in trouble anyway.
Student 1: When you go around school, there is nothing to do, so they just muck around
Student 3: muck around or break things. When they are occupied by something… When the tennis place was done up there, everyone was up there, everyone was playing football.
Student 4: Then there is no trouble for a couple of weeks, and then they are bored of it.
Student 2: They do also stuff in lessons; it is not just when they are not occupied.
Student 4: Break time. If you had something to do like on a playground, that could stop people from doing stuff in break time.
Student 3: Yeah break time
Student 4: Yeah, [stop troubles] like going in other people’s lessons when you are not supposed to, and, so more space is needed, so people can play really.
While the SRT did not approve of the kinds of disruptive behaviours that got them and their peers into trouble, they knew that lack of space to “hang out” and be with friends was often the cause. They debated hypothetical solutions, reviewed past ideas (including successes and failures), and offered new solutions for keeping students active, engaged, and away from negative pursuits. Their reflective thinking came with conversations with Ms. Rubython and Ms. Goss during their registration hours and also during the often brief times they had for meeting with ethnographer Paul-Boehncke. During all these times of talk about ideas for change, the adults asked questions, sought clarification, and helped with technical needs (such as digital tape-recorders or notebooks). But these times for the SRT increasingly came to be occasions for them to take leadership, float ideas, and test implications and possible follow-up of their ideas. These discussions led to their plans for research.

For example, in thinking about a football field, the SRT wanted to carry out research that would solicit ideas and views from other students. The conversation that follows below—rich in what-about and how-do-we questions and conditional propositions (such as we could or we should)—began their approach to a research plan:

Student 3: Let’s have a vote.
Student 2: We should have some other people from different year groups, girls and boys from each year group.
Student 1: Yeah, two boys and two girls from each year group, and then we should interview them single, and then we could ask them the same questions and then we could compare the answers.
Student 4: We could get the data from them and their answers, and then we can put it all into a graph or something.
Student 2: We should get the cleverest from each year group.
Paul-Boehncke: How do you get the cleverest?
Student 1: I don’t know, but we can find out from staff.
Student 4: We might get different ideas from people who get in trouble; we might get more different ideas from those that don’t, so you want to pick it [information] from different groups.

They charted possible courses they could undertake, examining probable variables and possible strategies for different chosen pursuits. What followed from this conversation was their devising of an interview protocol. They wanted, however, to ensure representation across relevant groups (gender, class years, type of student, etc.).

Shortly after they began to devise their research plan, they learned that the administration was already working in connection with a year 10 group on ways to create a central space for students. These plans included the possibility of a new building in the open space near the canteen. Rather than calling a halt to their own work, the SRT raised the issue that campus-wide, the year 10 plan had not been presented for student review. They then set about to urge staff members to recognise that having student input from all students across all the years was important. If students were consulted on possible ideas for solving problems that the entire school community agreed existed (mud, vandalism, etc.), then enlistment of their trust, understanding, and respect could follow. The SRT argued strongly
for the importance of input from recognised potential trouble-makers who could trash the new facility if they felt left out of decision-making.

Ultimately, a collaboration was established. The SRT committed to the task of a school-wide survey on how and where students used their lunch and break time and how they would like to be able to spend their time outside of lessons. And they added the Year 10 group’s idea of an open performance space to the survey to draw out student opinion on this possibility.

A big concern of the group was to motivate their peers to participate in the survey. Having participated in numerous school surveys, the SRT knew some of the pitfalls. Thus they looked at different samples of questionnaires, including one recently distributed by Creative Partnerships. One SRT member pointed out: “This actually looks like a test…. I think I wouldn’t want to fill that in.” The group agreed to give their survey a different look and to keep it short. To build incentive, they decided to give out raffle tickets with the survey, so that a winning student could win a cash prise of a hundred pounds.

The SRT wanted to guarantee confidentiality for students so they would give accurate answers to potentially problematic questions such as: Where did you spend your last lunch and break time? Thus, the questionnaire included options like ‘out of bounds (in the country park or in the village shops)’ — options that an ‘official’ survey would most likely not include. The SRT also decided that if they (and not teachers) handed out the survey, they would have a better chance of gaining an accurate reflection of students’ views. This decision meant intense planning and considerable consultation with staff, for the large number of classes and wide-spread spatial layout of the school seemed to preclude a simultaneous distribution. However, the SRT persisted and managed to follow through on their plans. In the end, they assessed their efforts as worthwhile. The survey’s return rat of more than a third of the entire student body—higher than was usually the case for surveys—indicated that respondents knew the survey had come from peers and had been designed for their benefit. The effort had taken over three months of work for ‘no credit’ and within the tiny slices of time the SRT could squeeze for their work in-between classes.

Yet, even with the returned surveys in hand, their work was not done. The data had to be analyzed, but the SRT acknowledged they did not have the necessary expertise. Once again, they asked “how do we...?” For this specific problem, Mr. Alan Logan, a maths teacher, proved to be the expert they needed. Mr. Logan offered his help and created a workshop for the SRT. He named the workshop: “How to manipulate a statistic.” He consulted along the way, joking with students about how they and others could move figures around and even present their findings in different formats. This experience gave students who had real fears about mathematics a sense of the human side of numbers.

With their analyses, the SRT encountered problems caused by the way certain questions were asked. They worked on the meaning behind statistical outcomes, and they decided on ways to offer limits on their claims. For formats of presentation, they chose to use pie charts and tables. With the help of Ms. Rubython, they devised and practiced their presentation, to be given to Headteacher Tony Lyng, at the end of the 2003-2004 school year. They worked with Paul-Boehncke as special critic as they readied their final performance, which they decided should reflect as many of them as possible taking turns in speaking, but doing so with ease. In their rehearsals, they showed that they could critique each other without
stress or personal insult. A portion of the final rehearsal involving the work of two students follows:

Student 1: Mr. Lyng, thank you for coming.
Student 2: My name is Student #2 and this is Student #1. [Reads the first page of the presentation off the board.]
Student 1: [Begins his part of the presentation.]
Student 2: I don’t mean to interrupt you, but instead of saying, *most of the students* you could actually say the number. Like 171 students like to have a common room. So you give them the exact numbers. And, when you say that most of the students want to have a common room, maybe you should add that 96 like to have an outside area where they can chill out?
Student 1: Right.
Student 2: Do you want me to write you a note for the numbers?
Student 1: Nah, don’t need a note. I know the numbers anyway.
Student 1: Continues his presentation. Then Student #2 interrupts again.]
Student 2: Sorry, I think it’s good what you are saying, but if you talk about the numbers of students who like the design study, I think we should tell them first what the design study is and something about the questions we were asking about the study.
Student 1: Hmm.
Student 2: I could just read the questions to them first?
Student 1: Nah, they know the questions anyway.
Paul-Boehncke: But I think Student #2 has a good point, because Mr. Lyng might not know the questions.
Student 1: All right then. So you read the questions, and I do the numbers.

Analyzing and putting the data of the survey together as well as critiquing final rehearsal before their presentation brought SRT members into direct experience with carrying a project from beginning through revisions to completion and presentation.

All the teachers directly involved in setting up, organising, or analyzing the survey showed deep respect for the SRT by taking their work seriously and by engaging with them as experts and advisors. Indeed, SRT members commented on how this sense of working together for the school community fostered their learning, performance, and motivation. Even the shyest members of the SRT had to enter classrooms to present and collect the survey; for many, this occasion was their first time to speak before what they regarded as a group of strangers—classes and teachers they did not know. As a result, both SRT members and teachers experienced opportunities to see the other step out of role and act outside usual expectations.

The enquiry experience of the SRT at Brockhill Park School serves as a second case of creative learning—this time within a sustained project that involved the entire school. After the survey, one teacher mused that the event may have helped some teachers who found it hardest to respect students as a group: “It is about the teachers really. It is about the respect for students. We have a lot of teachers who think ‘I am the teacher, you are (pointing downward toward the floor) here; you are the student.’” Having this opportunity
for a public display of students in unexpected roles working for the benefit of the school can move attitudes in ways that INSET days or general admonitions cannot. [For comparative analysis of the role of student research work within schools, see the work of Louise Raymond and her publications from Bedfordshire where the national student research network is located].

Presenting the data directly to Headteacher Tony Lyng offered a prime example of adults and students working together to learn what neither had previously known. Listening to the SRT, Mr. Lyng learned that over two-thirds of the students responding to the survey wanted a “chill out” space, such as a common room. Out of the 420 respondents, 105 were out of bounds during breaks or at lunchtime. In addition, the SRT summarised students’ responses to the “open performance space.” The students wanted adequate seating space and shelter from wind and rain. In other words, the “open” space could not be an open-air arena.

Mr. Lyng responded by engaging the students in discussion of further steps as well as by presenting them with certificates to indicate their special contributions to the school. All then gathered over a buffet lunch. Students agreed afterwards, however, that far more important than the food and congeniality was the chance to pass on their research in a face-to-face conversation with the Headteacher. Mr. Lyng had listened carefully and asked them to continue with their work during the coming year: “I want you to carry out more research. Look, there are students in other schools who even assess teaching. But to be able to do that, trust is necessary between teachers and students, and on this matter, we still have work to do at Brockhill Park.”

Building a relationship of respect and mutual trust between teachers and students became a priority of change for the coming year, especially since structural aspects of the SRT’s completed project were now available:

<table>
<thead>
<tr>
<th>Student Research Team Project Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A mixed age group had taken their own time to develop an idea and put it into a project.</td>
</tr>
<tr>
<td>• A project had been completed that was based in student interest and curiosity; the project had become an incentive to some to help solve problems facing the school as a community.</td>
</tr>
<tr>
<td>• The SRT gave teachers an opportunity to see them working to improve the school as an environment of congeniality and respect.</td>
</tr>
<tr>
<td>• Some measure of flexibility within the existing school structure had been achieved to provide bits of extra time for research meetings.</td>
</tr>
<tr>
<td>• Committed teachers had stepped forward to spend some extra time to pass on their knowledge as professionals to students.</td>
</tr>
<tr>
<td>• The SRT had met a deadline set for presenting the results to adults willing to engage as conversationalists and as decision-makers.</td>
</tr>
<tr>
<td>• The SRT had given a public performance of their joint work in decision-making and carrying forward a creative project developed outside lessons or adults’ authoritative direction.</td>
</tr>
</tbody>
</table>
Some, and preferably all, of these aspects of creative project-based work have to be in place in a school community in order for the idea of students as creative researchers and learners can take hold, spread in influence, and impact attitudes. [Note that these are specifics of the arc of performance discussed in earlier chapters of this volume.] The SRT’s small seeds of change started to grow as Mr. Lyng agreed to give next year’s SRT more time and space to meet and work for the school. Through an additional presentation to the Student Council as well as teachers and through their display of the survey results in the staff room at the beginning of the 2004-2005 academic year, word of the SRT’s work spread. This line of communication indicates a shift in teacher and student role perspectives, as young people came to be acknowledged as experts in representing the voices of their fellow students.

At the same time, SRT members developed a strong ownership of their school and their job as student researchers. One SRT member reflected:

I think Mr. Lyng should look at us as a responsible voice basically coming from students to him. He should look at us as important people, because we make responsible choices with his help…. I am not saying he does, but he should not look at us as just a bunch of students, because we are responsible and can make good changes for the school. In fact with some stuff like smoking, I actually think students would more like to talk to us than to teachers…. Mr. Lyng actually should want to get a little bit more involved with us, now as he sees that we actually make a difference at school.

Within one year “a bunch of students” distinguished themselves as the SRT, whose members were keenly aware of their potential for positive impact on the school’s climate of learning, and their headmaster not only listened, but also acted on their advice. Members developed and modelled for other students a clear vision of “responsible voice.” In terms of their own learning, their self-perception shifted as they engaged in the hard work and time-management necessary to bring the survey to completion. They gained an understanding that respect has to be earned through diligence, hard-headed reasoning, and responsible collaboration with advising adults who then find it easy to treat them with respect.

**Growing through connections**

Time for talk, long-term planning, reflection, critique, and real results mark both the cases in this chapter. While their experiences have not affected every student or every staff member at Brockhill Park, the work of the SRT and The Judith Centre offer clear models for more projects. As these and other niches of creative learning become connected, more members of the school will gain opportunities to see the growing initiative of students and teachers working together outside traditional roles and for continued learning within and beyond the school.

Much has been written about ‘creativity,’ ‘creative learning,’ and even ‘creative teaching’ since the policies behind the national initiative of Creative Partnerships began in 2002. Numerous books have been quickly published on theories of creativity, from those extolling
the economic benefits of creative industries to those offering quick and clever tips on being ‘highly innovative’. Yet few of these look long and hard at what learning is like within highly creative spaces and times, particularly when these have to exist within overarching learning environments that cannot, for many reasons, be given over entirely to “creativity.” Schools are such environments.

A systems analysis of Brockhill Park during the academic year of 2003-2004, along with close attention to the language of creative learning, has revealed several key findings.

First and perhaps foremost is the fact that the work and play of creativity cannot be seen as specific or even particularly unique to the arts. Within the sciences (especially the agricultural sciences at Brockhill Park—see Chapter six), in The Judith Centre, the SRT, as well as in the arts, we have found parallel features of structure, organisational learning, and language use at work. Creative learning sits primarily within certain manners of self-and group-regulation and adaptation. These do not belong to the arts alone, but they reside in learning environments that allow for the mutual exchange of roles, trust of responsibility-sharing, and growing reverence and respect for how far human talents and the capacity for caring for one another’s learning can reach.

Essential in all creative learning environments—whether sciences or arts—is openness to critique, time flexibility, and changes along the course of learning. These transformations amount to a process broad enough to tolerate individual differences while guiding everyone in the direction of learning. Change has to be negotiated, tried, reassessed, and often even set aside for awhile.

Administrative leaders of organisations such as schools must have a willingness to engage with what business organisations call “flattened hierarchies.” Within these, more people know what is going on, more take responsibility, and more communication goes on than is the case in the usual hierarchy. Envisioning change, promoting innovation, and placing a premium on communication comes initially from the pinnacle, but as innovation goes forward, envisionment, promotion, and permission come from a broadened structure of accountability (see Senge, et. al., 1990, 1994).

Schools lie within the public trust and therefore cannot give themselves entirely over to full departure from standard subjects, national tests and their schedules, or worries about school reputation. Thus creativity in most schools needs to take place within niches, in small slices of change and innovation, and through individuals seeing within their own

<table>
<thead>
<tr>
<th>Where Creative Learning lives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Creative learning and the work and play of creativity cannot be seen as the singular province of the arts.</td>
</tr>
<tr>
<td>2 Not subject matter, but principles, frameworks, and manners of self-and group-regulation determine environments of creative learning.</td>
</tr>
<tr>
<td>3 Mutual exchange of roles, trust building, and respect for originality, commitment, and energy build promising contexts for creative learning.</td>
</tr>
<tr>
<td>4 These conditions generate flexibility, critique, search for information, and continuing refinement or improvement of process and product.</td>
</tr>
</tbody>
</table>

Where Creative Learning lives
comfort zone possibilities for small changes. Every movement or sweeping policy that seeks to change formal education tends to think that proponents face two great tasks. The first is to discredit what has gone before or what seems “traditional” or “normal.” The second is to advocate for the new order. Yet magnet or speciality schools that focus on either the arts or the sciences show that this perception of either-or, out-with-the-old, in-with-the-new, does not fit.

Schools and youth organisations or programmes that emphasize primarily either the arts or the sciences have demonstrated that within both areas of work, creativity generates itself in the context of three key ideas — roles, risks, and rigour. Neither chaos nor fully predictable order prevails. Learners respond to being placed in new roles that offer risks within the safety of rigorous calls for quality. Order comes from the force of deadlines, high expectations, competition with outsiders and problems or challenges to be met. Seasonal cycles — the spring concert, national science competition, or impending dance recital — energise activity. While such deadlines do not come too often, all carry weight and force. Learners set their own or their group’s goals and standards far more effectively than do sets of imposed rules that are not based in high expectations, respect, and shared responsibility and learning across student and teacher lines.

Schools in which the sciences and/or the arts prevail can offer learning environments that operate as intermediate platforms for gaining skills, information, practice, and opportunities to play different roles. The cases offered here illustrate the merits of intermediate platforms or niches that sit between regular classes and routines. Yet their benefits flow through students and staff into these more regular parts of the school. Values within these platforms include cross-over thinking, ample communication, making mistakes, and trying ideas. All participants know their work and their efforts fit into something bigger than they are. Taking this reality into account provides impetus, gravity, and motivation toward changes for the future. The following chapter lets us look in on Brockhill Park in 2004-2005 to see whether or not learning for a lifetime, creative learning, or even project-based work has what it takes to be sustainable or possibly to nudge along organisational learning.

Creativity generates itself in the context of three key ideas - roles, risks, and rigour.

References


*Photography*

page 80 © 2005 Creative Partnerships
page 85 © 2005 Roy Smith
page 89 © 2005 Roy Smith
page 95 © 2004 Elke Paul-Boehncke
image needed
image needed
Chapter six:

The Growing Initiative

Moving forward into risk and change

In the opening chapter of this book, the reader was led to enter Brockhill Park School along the gravel drive off the road up from Saltwood. A ‘nondescript’ sign noted arrival at the school in September of 2003.

One year later, as the eighteen months of research reported here drew to an end, Brockhill Park looked and felt different. Now a vibrant turquoise sign not only had been placed along the road, but all the buildings (formerly not identified by noticeable signage) carried similar signs to showcase not only their traditional names, but also the departments they hosted. Several Year 10 and 11 students commented that they had never before known the names of departments housed within certain buildings. They were proud to point out to researchers the Penrose Science Centre and the SAGA Business Health and Leisure Centre. Perhaps ironically students reported that previously they had known the name of only one building on campus: The Phoenix Arts Centre. Now students knew there were nineteen buildings on the campus, organised into nine complexes for the 1321 students.

This September the school campus is nearly free of debris, and students move across the car park with a relaxed but purposeful pace. The manor house has now become solely an administrative centre, and the building across the way houses student information and services. The computer screen and photographic displays of life at Brockhill Park have moved there as well, and a student gathering area with counselling offices nearby is now available as an additional cafeteria.

The day still begins with the blare of the familiar call to registration time for house groups, but as of September 2004, only five classes of one hour each take place each day. Everyone in the school now eats at the same time in the previous cafeteria or the new space. The lunch time of one hour allows not only socialising in the cafeteria, but also developing interests through meetings and clubs. Teachers and students no longer have to bolt down their meal and race out of the cafeteria so the next group can enter. Students are flocking to the clubs, dreaming up new ideas, and gathering in excited anticipation of the coming year.

Not just the looks of the school have changed. Challenges like the size of the school have been tackled. The school is now divided into several small schools, so responsibility is shared. The system of having several “Houses,” each with different tutor groups, is fully implemented. Students report that being embedded in the cross-age tutor groups in their “Houses” gives them a sense of belonging and also allows them to get to know students above as well as below them in the hierarchy of years. Moreover, students report a special sense of bonding in most cases with the teacher who heads their “House,” and having someone to turn to for non-curricular or curricular matters is critical. Though some “Houses”
bond more than others, the mission of all is clear: give the school a more personal face, enable relationship-building, and soften the fear of transitions into and through such a large school.

**Telling others, learning more, knowing when and how**

Throughout the 2003-2004 academic year, the International Enquiry Network members urged not only the exchange of ideas, but also a real exchange of people. They encouraged visits to exemplary demonstration sites, which illustrated student leadership, organisational learning, and social enterprise. Of special interest to staff members were programmes centred in agricultural interests that could be linked to the strong enterprise and community outreach potential of the agricultural sciences work at Brockhill Park.

In the early summer of 2004, five Brockhill Park staff members travelled to Boston to visit The Food Project (for more on this project, see [www.thefoodproject.org](http://www.thefoodproject.org)) located just outside Boston, Massachusetts in the suburban town of Lincoln. Young people (ages 14-18) from urban Boston (nearly an hour away by train) travel during summers and on weekends during the winter months to take part in The Food Project. There they work with local suburban youth. They are paid the minimum wage and are expected to take on full responsibility as members of The Food Project.

The organisation includes several layers of participation and graduated levels of involvement from beginning summer participant through manager of farmers’ markets, food service systems, and other aspects of the programme. Students have the opportunity to stay on for several years, if they wish to do so, working their way up through the system or moving from one dimension of the programme to another. In their work, they learn through direct experience food system and distribution theory and practice. They gain extensive content knowledge about crops, insects, crop rotation and yields, and the cycles of work that are seasonal as well as weekly. The Food Project runs a community co-operative agricultural distribution system. In the autumn, customers pay a flat fee for their “community agricultural share.” When the harvests begin in the spring, they can come to the farm on either of two days each week to pick up a certain number of vegetables. This possibility carries on through the summer months and for root vegetables twice during the autumn before the next annual cycle of share payment begins.

Students become involved in the economics of local food distribution through not only sales of these co-operative shares, but also through management of two farmers’ markets, held in different locations in downtown Boston during the summer and early autumn. They learn substantial calculational and record-keeping skills surrounding planting and harvesting, sales and finance management. The Food Project also involves young people in programmes that link them with other youth committed to environmental equity, growing and eating locally, and taking on leadership roles in nutritional and food systems education. Members take part in youth leadership programmes all over the United States, which are designed to enable young people to take up their civic right of being knowledgeable active citizens of their communities. The Food Project puts into practice the organisation’s belief that young people working in agricultural sciences can and should lead, involve themselves in community service, and become entrepreneurial for financial profit and social benefit.
The Brockhill Park teachers who visited Boston represented very different curricular units: tourism, citizenship, health and social care, agricultural sciences, and communication. The visit spurred this group of teachers to formulate ideas for an innovative exchange and learning project for the coming year. They wanted to make more use of the school’s farm, particularly its potential for enterprise and for creatively demonstrating students in leadership positions to community service. Their key reason for bringing some aspects of The Food Project back to their school was to add a global dimension to the citizenship programme that would be a focus of attention for the coming year.

All students at Brockhill Park interested in farming can join the Young Farmers’ Club. Being a member involves work and shared responsibility, for the young farmers take care of designated animals. To do so, they must learn both in textbook terms and through direct experience about livestock, farming, and the seasonal and reproductive cycles of the animals and plant life. The work of the young farmers is highly visible to all, providing a strong form of communal social control and incentive for working in responsible and reliable ways. Staff members within the agricultural sciences sum up the cross-age learning created through the Young Farmers’ Club:

Donna Hawkes-Baines: What is nice out there (pointing out to the barn) is that at the moment you have got year 8, year 9, year 10 and year 11 working together.
Mr. Langley: Here they work together, and they know one another for a long time.
Donna Hawkes-Baines: You can see the older ones show the younger ones what to do. They have chosen to do this kind of work here.
Mr. Langley: The young farmers are motivated, and…we have many who you would see not being motivated at class.
Donna Hawkes-Baines: Having said this, we have a lot of young farmers here who have challenging behaviour around school or who have special education needs. And in some cases they manage to stay in school because of their involvement in the farm. We see here a different side of these students. You know, there is one example (nodding toward a student across the courtyard). That boy was on the edge of being excluded from school, because his behaviour was just outrageous. Yet here, he has been just wonderful.
Mr. Langley: But this is what they are interested in. This is what they want to do. Obviously one of the biggest problems with behaviour is when students are forced to go into subjects where they have little or no interest.

To be sure, the study of agricultural sciences as a subject area draws in students with particular farming interests. Yet others seek out the farm for its openness to multiple roles for students and to the levels of activity and risk involved in working there. Both incentives motivate students to envision the tasks ahead within a time frame, to adhere to the daily and seasonal cycle of work, and to carry through and act responsibly. Consequences of disruption, dereliction of responsibility, carelessness, or sabotage show up quickly and dramatically on the farm. Stories of past incidents help keep newcomers aware of the importance of what they are doing. Being tied together in a process that has to go forward has its own impetus. Knowing that what one does or does not do really matters creates strong incentives, for students and staff know that role barriers break down when all must pull together in the busiest seasons, during storms, or before the local fair when many students will be showing their animals in competition.
Perhaps most essential within the boundaries of the school farm is a sense of equality built on respect and trust. The farm is an egalitarian niche in an institution that has to be heavily hierarchical in many aspects of its daily life and organisational structure. Because so much of life on the farm demonstrates relationships of caring, staff members see students take up responsible ways of relating to their learning environment somewhat more easily than can be possible in regular lessons.

Donna Hawkes-Baines: We can have a special relationship with students down here. I have no hesitation in taking the young farmers anywhere. We took them horse riding last week and had absolutely no problem. We will take them on any activity whatever, and we know they will behave. You know, it is not an issue, behaviour is not a problem.

Mr. Langley: Even the ones who would be a problem elsewhere.

Working on the farm feeds the natural curiosity of young people, but the environment also gives them room to develop highly specialised interests not set out in curricular guidelines or textbooks. These possibilities represent the strongest combatants for boredom, frustration, and the sense of not being respected. At the farm, respect comes with privilege and opportunity, and all of these depend on commitment, hard work, reliability, and responsibility.

Such values figured centrally in the confidence that the teachers who visited The Food Project in Boston knew would be in place for adaptation in Brockhill Park’s creative learning agenda for the coming year.

**Taking the growing initiative back home**

During their two intensive days of meetings in Boston, Brockhill Park teachers spent much time talking with and observing the young leaders of The Food Project at work. In both the suburb of Lincoln and the urban site in downtown Boston, they watched the students work in farmers’ markets, culinary arts, and their catering centre, as well as heard them talk of their work in shelters for the homeless where they distributed much of the food they grew each year (250,000 lbs in 2004). The teachers saw the work as rigorous, tightly disciplined by the seasonal cycle and consumer demands for quality, and led in large part by young people who had different levels and years of experience at The Food Project.

Any positive learning environment must leave room for participants to find their own pace and way of inventing ideas. On their return from Boston, the Brockhill teachers set about planning their ways of incorporating what they had learned from The Food Project into their own project for the coming year, which they dubbed “the growing initiative.” When Head teacher Tony Lyng set up the possibility of the visit to Boston, he had challenged the teachers to use the trip to help the school meet the goal of “building creative capital through developing appropriate approaches to student empowerment as active citizens in this learning community…. emphasizing student involvement and choice/decision making.”

The challenge was now to take the idea of a non-profit, youth-based community organisation and choose parts to adapt into a school structure. The teachers decided that their iteration of The Food Project should in its first year involve the approximately 250
students who would be in their second year at Brockhill Park in the autumn of 2004. The
school’s version should also include team teaching, as well as student involvement in
research, decision-making, and exploration of citizenship within the agricultural sciences.
Overall, the plan should allow the students to make real decisions about their work and on
how they might want to move forward with learning and doing more in the school.

The heart of the new “growing initiative” would fit most easily into the “citizenship”
curriculum that would be available in the autumn for these students. Food means not only
agronomy, but also food systems, nutrition, and global distribution of food. Embodied
within The Food Project were numerous aspects of food systems: business and
socioeconomic realities, health and nutrition, dynamics of science (from soil science to
pesticide relief to distribution systems and maturity rates), as well as the sciences of botany,
pest control, and reproductive systems of plants in interaction with soil, weather, and
fertilisers. Beyond all of these features was the core element of interest for Brockhill Park’s
school staff—enabling the youngest students of the school to grow through experience in
this project into a sense of civic engagement as they became participatory, caring, and
involved members of “the growing initiative.” The teacher group from Brockhill created a
combined set of classes and learning platforms to make their goals move forward in the
coming year.

Yet they had to be aware of given structural factors like curriculum constraints, time tables,
and assessment. Since the citizenship curriculum called for a standardised test only at year
9, teachers agreed that students should give their ideas for means of assessment along the
way. As a result, the teachers created a plan for year 8 (250 students) to help them meet
the criteria for topics related to “rights and responsibilities” and “voluntary work” within the
citizenship curriculum to be taught for the first time in 2004-2005. Groups of students would
take on responsibility for a piece of land on their own, make decisions about what to grow
and how to do the work, collect the means, and implement a plan. The hope was that their
work would result in an enterprise that would provide funds that the students could either
donate to others or use for school benefit. In addition, this core process would be
supported by relevant work from the sciences and enterprise (from soil testing to
marketing).

The Year 8 students would rotate in cohorts among teachers in order to have access to
different experts. They would have two classes each in citizenship, enterprise, and science
each half term. Because of this rotation and the intensive involvement of students in
decision-making along the way, the plans for implementing the citizenship curriculum were
designed to have flexibility and on-going critique built into the process. It became obvious
that this project would go beyond the usual preferred style of teaching in isolation.

Practical questions had to be considered as well, ranging from dirty school uniforms after
working on the fields to finding space for keeping the necessary tools to security issues for
students when they were outside their classrooms. Extra funding was needed to purchase
equipment and to fence the garden areas. Motivation from the teachers who had visited
Boston ran high and took them beyond their usual teaching routines and times of
preparation. Nevertheless, after seeing The Food Project and also knowing the good work
taking place already at the farm, the teachers launched into the work enthusiastically.
They introduced the project to students through a kick-off lesson outside the classroom at the sports field. Moving out of the usual teaching space, they gathered all 250 participating students one morning and set them to a food game. One of the students suggested that this initial experience was a tip off that something would be very different about this class: “We were brought together on the playground and all along the fences were big sheets of paper saying different countries. The teachers had to shout out a certain food item, and we had to go to the country we thought the food originally came from.”

The sense of difference continued when the students learned that they would be visited by young people from The Food Project in a few weeks. At that time, they would be involved in exchanging information and ideas in a special all-day session for which they had only a few weeks to prepare. Each cohort would report on their particular area of activity (whether sciences, enterprise, or citizenship), and they would be questioning the visitors about how to make the choices they faced on crops, costing, and distribution.

When three students and one staff member from Boston’s Food Project came to Brockhill Park, the local students made sure the visitors gained a sense of the farm, Young Farmers’ Club, and their daily schedule of classes. The Food Project students, in turn, led the Brockhill Park participants in some of the leadership activities they had developed for workshops. They showed a video film of their project and presented talks about some of the most technical aspects of their life within the project. Students from “the growing initiative” reported that having “groups where you could talk with your classmates to those who work within The Food Project [helped us] learn a lot more about them, so they are like a friend and you can work a lot easier with them.”

The next day of the visit was committed to establishing plans for video conferencing, emailing, and exchanging progress between The Food Project and “the growing initiative” students. Brockhill Park students were eager to stay in touch and to learn more about The Food Project, perhaps even by visiting the young people in the United States. They decided to set up a lunch club for students where they could have regular internet chats with The Food Project young people in Boston. This international contact offered a plethora of learning opportunities on both sides, including cultural, economic and social comparisons. Being a member of a “global community” was no longer simply a phrase empty of meaning, but a reality.

Brockhill Park’s students reported their own sense of excitement and anticipation. Students reported that the visit underlined the serious nature of the project. They noted that hearing other young people talk about food having individual, social, environmental, political, and global implications made their own curriculum come alive. One student said: “Knowing that there are more young people across countries concerned about these issues encourages and motivates us to work hard at the project. It shows also that learning does not take place just because of a grade or tests. It is about participating in communities and being able to make choices and to have the responsibility to make decisions.” Other students and teachers added the idea that the visit to Boston seemed to enable Brockhill Park teachers to reflect on their own practices, expectations, and relationships with one
another as well as with the subjects they taught, and the immediate experience of having
guests eager to learn from work being done at Brockhill Park, helped push the ethos of the
project throughout the school community.

**Sustainability: Foundation for life-wide learning**

To enthusiastically plan a project is one thing; to bring it to life is quite another story. Most
of the teachers from the planning team had been at Brockhill Park a long time. They knew
how the school worked and included their experiences into their planning process for the
new curriculum and project. Still they were jointly taking considerable risk, as well as the
huge responsibility of setting something entirely new in place for 250 students. As Mrs.
Masters explained, the teachers’ cautions about the plans soon turned toward the positive:

I didn’t want to close my mind by having expectations. I wanted something to blossom from
that, something to emerge….I suppose I didn’t expect it to work so well. Yet, it is exceeding
expectations. I thought I would be bored by teaching the same content again and again,
[the cohort plan means that she has to teach the same content to nine different groups] but
because of the interaction in the groups I have different discussions in different classes.

Surprisingly, she also noted how informal interactions among students in her project
classes have turned to being more subject-oriented than usual.

While they colour the world map [they were supposed to indicate countries where
starvation is occurring]…they are saying: “Why is this like this? If they [population groups
in Africa] are having too many children, why do they get so many children? Why do they
have so many people?” Then someone else says something. When you listen to their
chitchat — I’ve learned I don’t want to have a quiet classroom. The only time I want to have
a quiet classroom is when I am talking or when they are talking. Now they are all talking.
They are not talking about their friends. They are actually talking to each other about
global themes. They don’t realise this, and I am not stopping this. I think it is actually
amazing that they do that.

The students do not just follow instructions to colour in the maps. Their mind is set on the
subject, and critical thinking starts to emerge. Mrs. Masters makes sure that they have
enough time and room for mental exploration. In doing so, she hears students ask
questions they usually would not ask:

And occasionally they are frightened to say something and this prevents them from asking.
A boy in one of the first groups asked me why don’t people in African nations use
contraceptives; why do they keep on having children when they cannot feed them? He
wanted to ask, but he didn’t have the language to ask in the “politically correct” way and he
was worried that this made it an invalid question. I let him ask the question. I said this is a
very good question, and we actually explored it and the whole class was interested.

Mrs. Masters’ response to this situation lays open the heart of learning and teaching
creatively: taking risks. A major figure in school change in the United States, Deborah
Meier (2002), suggests that this kind of risk is essential to developing expertise: “We can
learn secretly, but at a price. If we act as if we take it for granted that there will never (well
rarely) be a ‘dumb’ question, just occasions when it is hard for us to understand where we’re
coming from, then we can more readily go public with confusions. And confusion is essential – if uncomfortable. It’s the frequent outcome of allowing ourselves to pursue our curiosity more deeply, to pay attention to the unexpected” (p. 14). Confusion happens in “the growing initiative,” but teachers and students become a team to sort this confusion out together without judgment. This sense of trust between teacher and students provides a platform for exploring, following up, and reflecting. As Mrs. Masters suggests:

This project has created a platform for students to actually challenge and question. Instead of saying: all people are poor in Africa and it is their own fault you hear these prejudices normally here in school life. These students are asking in the lessons I do with them, why is it like this? Yes, the African countries are amongst the poorest nations in the world; now they are actually asking why. They are unknowingly casting these prejudices aside because they now are interested in the why.

Within its citizenship classes, the growing initiative has managed to create situations where students wonder and reason together over global issues. Teachers can creatively see where each class goes, for as Mrs. Masters observes: “I do enjoy it. It is stimulating me and stimulating them. I suppose it has given me the opportunity to teach what I want to teach. It has given me the platform to teach something more creative.”

Students echo this view. Asked about whether this project makes the school more exciting for him, one student answered: “It does, ‘cause, that means that we are not just a school …just doing such things like maths…. It is good that we are getting more spread out with more experienced work such as growing things.”

Not only are students interested in the practical dimensions of the project at the current time, but they are also learning to develop a clear vision for the future of the project. Several students whose parents are involved in the restaurant business or in catering or farming help to spark enthusiasm. For example, one student reports that he talks a lot about the current work with his father: “And he says it is a good idea and everything. With the allotment we have, we grow vegetables, some for the restaurant, but also we keep some for ourselves to eat.” The student continues with his ideas on how to improve the project to guarantee it even greater success in its second term:

We should all get turns in trying each part [planning, planting, harvesting, and marketing], so that next time, if we do it again we should be able to see what went wrong and then we could pick up from that experience. I thought it would be good if we could continue it also when we are in year 9, so that some of us could help out the Year 8s. We could see that the Year 8s would be more in control because they will have only started out and they have much learning to do.

Already, within the first month of the project, students were extending their ideas into the community. One student suggested: “Yeah, I would like to bring the community together, not just in school but outside of school to help out with the food project.”

In priorities for the school year 2004/2005 set out by the Heateacher Mr. Lyng, the proposal was that Brockhill Park should “open up learning.” He elaborated:“Creative learning should be visible in all areas, through risk taking and student empowerment…. Students have to be involved in all of that, but they have to learn how to undertake this involvement.”
Summary

This research monograph has laid out the parallels of learning in both the arts and sciences in the interest of promoting creativity as more than simply artistic endeavours or experiences. A corollary interest has been insistence that initial sparks of innovation mean little in either lifelong or life-wide learning if opportunities for creative endeavour are not available throughout a learning environment. Taking on sustainable creative learning within a secondary school represents an extremely tough challenge. Yet at no time in their lives do young learners need such opportunities more.

If given the opportunity to create teaching and learning on their own, teachers and students help redefine in fundamental ways what creative societies preparing for not only economic but also health and social needs of the future have to have. Brockhill Park’s case lays out ways in which “shaping the future through creative learning” leads to ongoing changes, structurally, pedagogically, and even in terms of fundamental roles usually expected within schools.

Intriguingly, on one of her last research trips to Brockhill Park, ethnographer Paul-Boehncke was struck with the integration of the past and the future in the community she had studied. She had gone on an exploration of Saltwood — stopping and listening at the tiny village store where students walking to school loaded their lunch boxes with goodies and drinks. There she met a student who introduced her to his father, and he cordially extended an invitation for lunch at his restaurant.

Later she went for her last run in the country park adjoining Brockhill Park School. But on this day, she went further and took up unfamiliar footpaths. She found hidden valleys with orchards, horse stables, extensive gardens, an old stone church, as well as houses that seemed to hold much history within their walls. She continued on one little winding road up the hill, curious to see what would be next. At the top, she was catapulted from the lovely, historical, and rural countryside into the world of global connections, for there stretched the overpass crossing of the rail tracks for the Eurostar, the train that runs between Paris and London. Nearby, she could see the train station to the tunnel crossing the channel into France.

As she turned and ran back to her hotel, she wondered about the paradox of such juxtaposition. Her eighteen months at Brockhill Park had been almost totally immersed in its rural setting, its perpetuation of traditions, and its attempts to break out and move beyond traditional modes. Yet like the village — an ancient town perched on an overlook to high-speed connections — the metaphor was clear. At first sight, Brockhill Park School demonstrated plenty of traditional connections (celebrating lambing day as well as well known teaching styles and forms of assessment). Yet a closer look revealed an altered scene, revealing multiple niches of radically different learning approaches, teaching methods, and system switches. In essence, she had found high-speed connections on the part of students and staff that would open horizons for lifelong and life-wide expansion.
In its early policy statements, Creative Partnerships advocated bringing more creatively thinking partners into schools and communities to help ensure continued explorations with what creativity could mean for communities in economic and educational distress. The Brockhill Park School case illustrates only some aspects of the difficulties that this policy challenge presents to secondary schools. Head teacher Tony Lyng explains, “Sometimes the passage is rough; oftentimes it is smooth. It is important that we continue to cut through the rough passage supporting each other as we go. The journey is worth the travelling.” More important, this case demonstrates that the distance travelled matters. For secondary schools, that distance may never be able to be as great as it can be for primary schools. Yet, with will, sustained exchange, and inclusion in new roles, secondary schools can work through arts and sciences in a host of ways to deepen their school’s potential for sustaining creative learning and teaching.

References

Photography
page 102 © 2005 Creative Partnerships
page 105 © 2004 Brockhill Park Performing College
page 109 © 2004 Brockhill Park Performing College
page 117 © 2005 Creative Partnerships
image of Tony Lyng
Afterword

Anthony Lyng, Headteacher
Brockhill Park Performing Arts College

The research reported in this monograph started out as a set of questions seeking to establish whether the processes of creativity so evident in our performing arts courses had kinship with processes in science learning. This inquiry had evolved from initial discussions around the impact of the residency of artist Robert Jarvis as part of a Creative Partnerships Kent supported project. As Headteacher, I wanted to know if the successful teaching and learning in the creative arts context could be applied in the sciences or other disciplines not specifically within the Arts domain. What better way to do this than through a professionally led and supported student research team, which in itself has been action research into the potential for student voice in the school community.

With regard to the original question, the research speaks for itself. I believe the work has shown that the Arts and Sciences are not just made for each other, but they are inseparably two sides of the same creative coin. The discipline, individual challenge, teamwork, reflection, and active problem-solving so evident in the arts is also the touchstone of successful science or indeed successful “anything.” This monograph paints a picture of change stimulated by a range of apparently small-scale activities complemented by reflection. These together have created the “butterfly effect” of chaos theory in promoting a “hurricane” of environmental and social structural changes which I believe will radically alter the school as a learning organisation.

Learning organisations are defined by organisational learning theorist Peter Senge as “…organisations where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.”

The findings from the research reported in this monograph illuminate much more than the initial question posed to stimulate and focus the research. Moreover, although saying much about creativity, this work goes beyond this phenomenon to reveal more fundamental issues about secondary education in England in the early 21st century. The stunningly clear aspects of what is revealed in these chapters is not specific to my school. The clarity of this study lays bare core current conflicts between the purposes of education and the regulatory requirements of state-provided secondary schooling in England.

This research monograph provides an image which shows conflict of purpose between the needs of the learners, the imposed will of the system, and the results of a mismatch between the real world and the desired world. More importantly, it reveals an image, which, in the extreme, shows how scared we are or how impotent we feel to step “outside the box.” The “box” that contains us and holds us back is one sadly not of “delights” but of strictures imposed as we attempt to meet the regulatory effects of a system which imposes statutory
curricular frameworks, statutory targets, statutory assessment—all of which are statutorily monitored by a national inspection body against an inflexible inspection framework.

At every level of professional practice in our schools, detailed criteria define expected behaviors and outcomes for staff and students in a standards-obsessed system which is benchmark-determined, rather than being oriented towards the development of creative, cultural, social, environmental, and cognitive capital. Counter to these strictures and structures, some levels of government recognise the need to support the development of creative capacity through the Creative Partnerships initiative and a developing call for personalized learning. It is heartening to see highlighted the following statements about creativity on the National Curriculum in Action website sponsored by the Qualifications and Curriculum Authority (QCA):

Pupils who are creative will be prepared for a rapidly changing world, where they may have to adapt to several careers in a lifetime. Many employers want people who see connections, have bright ideas, are innovative, communicate and work well with others, and are able to solve problems. In other words, they need creative people. By promoting creativity, teachers can give all pupils the opportunity to discover and pursue their particular interests and talents. We are all, or can be, creative to some degree. Creative pupils lead richer lives and in the longer term, make a valuable contribution to society (National Curriculum in Action, 2004).

Due recognition must also be given to the very valuable developments in literacy, numeracy, teaching, and learning, and assessment for learning and behavior for learning espoused by the National Key Stage 3 strategy. However, there is still an inherent conflict between the standards-obsessed real world and the capacity-building basis of the desired world.

It is also very clear that we need to shrug off our fear of these means and ends. We must pursue the personalized learning agenda with creativity and language in their fullest sense and deeply embedded in the processes of secondary education.

The school leadership in my school has for some time begun attempting to adapt a futures perspective on learning and creativity. As a group, we see our role as developing creative, cultural, and social capital—work now for tomorrow’s world. It is about anticipating the future needs of our students whilst catering also for the present. We are doing this by placing learning at the focus of all school planning, engaging the “creative community”—

### This monograph indicates the huge value of student-based learning, professional collaboration, and project-based learning whilst highlighting the need for oracy as a key component of essential social linguistic development. It shows positive cultural change can be achieved successfully through:

- pursuing learning agendas in a creative context
- enabling language development through peer-centered projects
- encouraging socialisation into sustained and substantive conversations between adults and young learners
- empowering student voice.

It is also very clear that we need to shrug off our fear of these means and ends. We must pursue the personalized learning agenda with creativity and language in their fullest sense and deeply embedded in the processes of secondary education.
artists in residence, individual artists, and companies and groups—in our work in school. Most importantly, we have undertaken creative learning for the present and future by overtly giving permission for creative teaching and creative learning experiences. We have restructured to organize teaching and learning through four major faculties, each led by a Director of Learning. Our tutorial system is based on vertical-age tutor groups organized in houses federated into two mini-schools, each led by a Director of School. The whole way in which we involve students in their school is changing, and, although sometimes a bit scary, it is without doubt making us a better professional learning community described by Louise Stoll as: “An effective professional learning community has the capacity to promote and sustain the learning of all professionals in the school community with the collective purposes of enhancing pupil learning” (Stoll, 2004).

Many classrooms now have language being used by students which reflects a creative learning culture. We are poised to move to a multi-track, age-flexible assessment-ready curriculum, probably without “horns blasting” the way for movements and change, with much more time for “talk” and “reflection,” and in a developing context of student voice. This is undoubtedly the right way to go, if we are to meet the needs of all our learners and the society they live in now and will face as their future.

Some of these changes may have happened anyway—even without Creative Partnerships Kent or the research of the International Enquiry Network and the student research team. However, I suspect it would not have happened or would have been much longer in coming, had it not been for the timely arrival of Anna Cutler and Creative Partnerships Kent. This partnership brought us association with Shirley Brice Heath and her team. The combined effect has been to enhance what we do as we “risk take” and to challenge hard at every stage the very embodiment of the creative processes we are undertaking. Anna Cutler, Shirley Brice Heath, Paul-Boehncke, and their associates are now part of our school. This infusion of creative thinkers, educational impresarios, academics, and researchers has both changed our culture and enriched it.

I cannot imagine the school working in the future without this kind of input or the close association with Creative Partnerships Kent. I believe that such combinations of creative, cultural, social, and intellectual capital provide a paradigm for cultural change that at some level should be available to all schools. Will it raise standards? Yes, of course, it will. Happy, creatively engaged pupils with a high degree of self-esteem, self-awareness, and self-worth will achieve more success whichever way you measure it.

Reference
Q.C.A Website address : www.qca.org.uk
London: Random House

Photography
page 00 © 2005 Creative Partnerships
Image
Creative Partnerships is a programme managed by the Arts Council England, the national development agency for the arts in England. It gives young people in 36 disadvantaged areas across England the opportunity to develop their creativity and their ambition by building partnerships between schools and creative organisations, businesses and individuals. Creative Partnerships aims to demonstrate the pivotal role creativity and creative people can play in transforming education in every curriculum subject for children of all ages and abilities.

Learning for Creative Futures is a series of publications, for general, arts practice, and academic readerships, that portrays how learning environments engage children and adolescents in sustained creative work and play. Assuming roles and relationships that bring close association with professionals who work in creative industries, young learners experience the vital mix of imagination, long-term planning, knowledge accumulation, skill development, and informed critique. The international research team of Learning for Creative Futures includes scholars from the disciplines of anthropology, education, linguistics, psychology, political science, and sociology. This international enquiry network is led by Shirley Brice Heath and Shelby Wolf.

All stories have behind them many other stories. The tale told here is that of one secondary school taking on the challenge of learning for creative futures for students and staff. Project-based learning in the arts and sciences, as well as within several other niches of activity within the school, reveals how an initial creative idea takes learners through collaborative learning to implementation, experimentation, and on-going critique. The theme of this research monograph is that the curiosity and energy that initiate creative projects have to carry forward into the accumulation of skills, information, and self-regulation that enable creative learning to be sustained for the future.

Creative Partnerships Kent is run by a small, highly experienced team that has local, national, and international expertise in facilitating cultural and educational programmes. Team members believe in providing the highest quality and most challenging arts and cultural experiences for young people. To this end, they helped provide for the research of the International Enquiry Network and supported the work of Robert Jarvis, composer-in-residence 2003-2004, at Brockhill Park Secondary School in East Kent. The quality of work that has taken place is the result of an inspired school and exemplary practitioners who have seriously undertaken the challenge of examining what partnering creatively can mean in a secondary school.

The research: From the spring of 2003 through the autumn term of 2004-2005, Shirley Brice Heath and Elke Paul-Boehncke, scholars of the International Enquiry Network, looked closely at how language, attention, inspiration, and collaboration at Brockhill Park Secondary School changed through project-based learning. Shelby Wolf helped review and interpret the findings. This work also brought teachers, artists, and students into the research process as questioners, data interpreters, and readers and respondents assessing the results as set forth in this research monograph. The research upon which Made for each other: Creative sciences and arts in the secondary school is based includes transcripts and fieldnotes recorded and analyzed during the year. Academic publication of
the Learning for creative futures series will report detailed comparative analyses of
language and cognitive development in the context of specific features of creative learning
environments.

Shirley Brice Heath, linguistic anthropology, has studied how different kinds of learning
environments support children’s later language development. She takes as her focus
within-school creative programmes as well as sustained interactions young people have in
their work and play within families, peer relations, and community organizations. She is the
author of the classic Ways with words: language, life, and work in communities and
classrooms (Cambridge University Press, 1983/1996). Heath has taught at universities
throughout the world—most notably Stanford University and Brown University, and
currently as Visiting Professor at Kings College, University of London. Of emphasis in her
research are the long-term effects of learning in environments heavily dependent on the
arts. Within this work, she has given special attention to science and environmental
projects, and those that encompass social justice and social entrepreneurial concerns. Her
resource guide and prize-winning documentary Artshow (2000) feature young leaders in
four community arts organizations in the United States. She is currently completing a DVD
Artshow 2 (2005) which features The Food Project of Boston, Massachusetts, a creative
partner working with Brockhill Park Secondary School in East Kent.

Elke Paul-Boehncke, a German scholar focusing on comparative education, received her
initial degree in Social Work with a focus on Youth Work. She completed a Master’s degree
at Humboldt University in Berlin on Education, with an emphasis on Anthropology and
Cultural Studies. Her Master’s research documented school-wide change in an alternative
high school in New York City. Her Ph.D., granted in 2002 by Humboldt University, was
based on research into the organizational life behind corporate citizenship within a major
German automotive corporation. She specializes in systems analysis of organizations
undergoing change deliberately undertaken by elements within the organization. Her
publications have appeared in Sweden and Germany.

Shelby Wolf, an award-winning teacher and educational scholar, is a professor at the
University of Colorado at Boulder. Her research centres on children’s language and learn-
ing through engagement in literature and collaborative as well as creative modes of
_expression—discussion, writing, the visual arts, and drama. Her most recent book,
Interpreting literature with children (Lawrence Erlbaum, 2004), portrays her close work with
teachers as co-researchers in the study of children’s literary learning. She has worked
within numerous school-change programmes to validate the perspectives of teachers who
undertake enquiry into how learning works in their classrooms. She is a senior author of
Houghton Mifflin English (2004), a textbook series devoted to helping children improve as
writers. With Shirley Brice Heath, she wrote The braid of literature: children’s worlds of
reading (Harvard University Press, 1992) and the series of five booklets Visual learning in
the community school (2004), published by Creative Partnerships.
This publication appears in the series Learning for Creative Futures based on research carried out in creative learning environments by the International Enquiry Network, headed by Shirley Brice Heath and Shelby Wolf. The current monograph details ways in project-based learning within the arts and sciences depends upon similar language uses and patterns of strategic thinking, as well as close observation and sustained collaboration. Here also is an analysis of the structural challenges and possibilities for creative learning and project-based work in the arts and sciences in a secondary school.