How do young people navigate their way through school, home and the Internet? What value systems are they adopting? What strategies are young people using to learn: problem solving, trial and error, risk taking, common-sense learning, intuition or activity based learning? In order to motivate children to learn in classrooms, educational practices need to evolve from the content and range of young people's personal experiences.

In their first book, *The Child's World* (ACER Press 2000), Margaret Robertson and Rod Gerber examined the idea that insight into how children interact with the world around them can be used to improve their ways of learning.

*Children's Ways of Knowing* explores further the experiences of children as they make sense of their environment. This collection of essays draws on contributions from experts in fields as diverse as education, information technology, popular culture, philosophy, geography, architecture and the environment.

The Editors: Dr Margaret Robertson, Senior Lecturer in Education at the University of Tasmania, is recognised internationally for her research in the fields of environmental perceptions and spatial cognition. Professor Rod Gerber, immediate past Chair of the International Geographic Union's Commission on Geographical Education, is widely respected for his work in geographic education.

ISBN 0-86431-349-7

ACER PRESS

9 780864 313492

A927BK

Child Development/Psychology

Children's Ways of Knowing

Margaret Robertson * Rod Gerber

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# Children's Ways of Knowing

*Learning through experience*

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Edited by
Margaret Robertson * Rod Gerber

ACER PRESS

First published 2001
by Australian Council for Educational Research Ltd
19 Prospect Hill Road, Camberwell, Melbourne, Victoria, 3124

1 3 5 7 9 10 8 6 4 2

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Edited by Renée Otmar, Otmar Miller Consultancy Pty Ltd, Melbourne
Cover and text design by Scooter Design
Typeset in 11/17 Legacy Serif Book by Scooter Design
Printed by Ligare Pty Ltd

National Library of Australia Cataloguing-in-Publication data:

Children's ways of knowing: learning through experience.

Bibliography.
Includes index.
ISBN 0 86431 349 7.

1. Reasoning in children - Study and teaching. 2. Experience in children.
3. Cognition in children - Study and teaching. I. Gerber, Rodney, 1945-. II. Robertson, Margaret.

370.152

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# Introduction

## *Margaret Robertson & Rod Gerber*

In our previous book, *The Child's World: Triggers for learning* (ACER Press, Camberwell, Australia, 2000) we reviewed the spatiality of children's worlds. We argued that children live their lives increasingly in a visual world that is dominated by the new technologies and navigation tools, and are reliant upon screen-based imagery, rather than on the traditional print-based technologies. In this book we pursue a similar theme, but extend the boundaries to include new and interesting perspectives on how children come to know and understand their personal worlds.

We maintain that the rapidity of social, economic and technological change increases the imperative for educational decision makers to open their minds to new pedagogies. In order to motivate children to learn in classrooms, educational practices need to evolve from the content and range of young people's personal experiences. Being dogged by distractions from past memory of learning and pedagogical practices, which have little contemporary currency, is the real danger of the times. A willingness to explore new ideas and build partnerships with the youthful users of social and educational space seems to be an essential prerequisite for reaching desired outcomes.

Exploring further the children's worlds through **their** ways of knowing has been the challenge for every the author in this book. As the authors explore the lived experience of the child's world, the spatiality of their interactions is analysed for knowledge that will help decision makers best approach the learning of children and provide the relevant triggers for motivation.

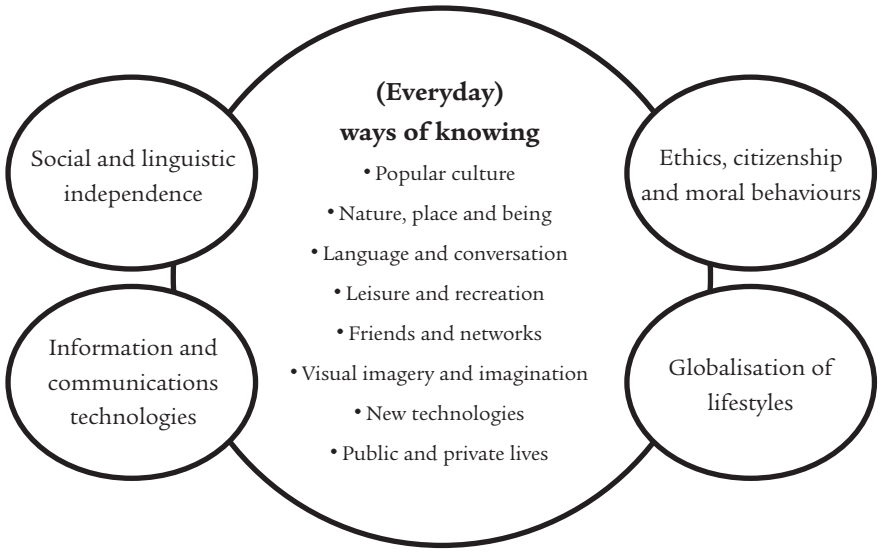
A deliberate focus has been on issues that stem from forces of globalisation through new information and communication technologies, the impact of time–space compression and the associated diverse reference systems that face young people. Questions asked of young people are:

- How do they navigate their ways through school, home and the Internet?
- What value systems are they using?
- What do they do with their networked computers in private spaces?
- What do they talk about when they meet?
- Where do they meet?
- What is important to young people?
- What kinds of citizens will they be?
- What learning strategies do they use?

Figure 1 attempts to summarise the content of the themes covered and to convey a feeling of the breadth of concerns of the authors. The small bubbles summarise the major external influences on our lives. The large bubble lists some of the many ways in which each is expressed in manifestly different dimensions of youthful experience.

Attempting to map the boundaries of young people's personal experiences can provide, simultaneously, insight into the private and public tensions in their lives and direction on appropriate ways for socially agreeable resolution.

*figure 1* ***Conceptualising (everyday) ways of knowing***



The question for educators is 'Which of the known strategies for learning do young people use?' Or do they use new ways of learning to match the new types of experiences?

Our view is that, for innovative practice to emerge, the conversations need to be far ranging and inclusive of diverse opinion. Remaining in the (often) safe domains of disciplinary and professional contexts can be a disadvantage when trying to reconceptualise ideas. Hence, in this book we bring together authors from diverse backgrounds and personal contexts who provide a unique set of perspectives on the important questions raised.

Five themes provide the structure for the presentation of material. These themes encompass major cognate areas: language and literacy, environment and community, information and communication technologies, space cognition and the arts. Each is introduced with an overview, followed by chapter contributions reflecting the international backgrounds of the authors.

- **Popular culture and information and communications technologies.** Chapters include a conversation about change and imagining the future (Margaret Robertson), the language of information and communications technology (Laxmi Ramasubramanian) and popular culture discourses (Victoria Carrington).
- **Place, space and self identities.** Rod Gerber examines how we develop a sense of place, Pamela Wridt analyses a program designed to motivate street children in Brazil, and Richard Blythe provides an architect's view of the child's world.
- **Alternate pedagogies.** Chapters explore innovative ways of constructing curriculum through philosophy for children (Laurance Splitter), deconstructing online learning (Neil Schwartz and Steven McGee) and learning from children's experience with computers (Andrew Fluck).
- **Space, cognition and mapping.** David Stea, Marites Pinon, Nancy Middlebrook, Vanessa Eckert and James M. Blaut explore the mapping skills of very young children. Hannele Rikkinen describes the cognitive maps teachers have of the future, and Tammy Kwan and Jacqueline Anderson report on an international mapping competition showing children's mapped global images.

- **The arts, aesthetics and environment.** Peter Wright and Bjorn Rasmussen consider children's drama, Kristen Rauch examines children's paintings and writings, and Margaret Robertson reports on young people's leisure activities.

We conclude the book with a synthesis of the discussion and recommendations for teachers and users who may also be trying to 'imagine the future'.

We hope that this book on children's ways of knowing will provide a useful companion to *The Child's World: Triggers for learning*.

# part *a*

## *popular culture and information and communications technologies*

# Introduction ~ *Rod Gerber*

Young people in societies around the world are interacting at ever-increasing rates with the new information and communication technologies. Such is the rate of impact of these technologies that there is serious concern for the widening gap between the **haves** and the **have-nots** amongst children in different developed and developing societies. It is becoming increasingly commonplace in developed countries such as Finland for young children to use mobile telephones as their main tool for communicating with each other. This has something to do with reductions in the prices of mobile telephone calls and something to do with the rapid diffusion of the use of mobile phones in the Scandinavian societies. However, it also has something to do with the choices that are available to these children to go beyond the Internet era into the mobile phone era for information transfer and communication. The result is that young children are embracing information technologies so completely that these technologies are moving to rule their lives.

It was only a short while ago in post-industrial societies that extensive use of the Internet was construed as the way by which children would communicate most widely with colleagues and strangers. In fact, the extent of Internet communication is very high amongst children who have easy access to computer technology. Highly publicised, easy access to the Internet increases the seductivity to children of Internet communication for all sorts of personal purposes.

However, this contrasts with societies and groups of people who do not have access to these modern forms of communications technologies. In places such the Ivory Coast in West Africa, where the ownership of computers is still very limited, children have little chance of participating in the world of the Internet and mobile phone revolutions. These children still do not experience the immediacy of knowledge and information. Their popular

culture is much simpler than that of their colleagues in Scandinavia. So far, they have remained largely untouched by the knowledge revolution that has come with the advent of the Internet, mobile phones and computer technologies.

This means that any discussions of information technologies and children's popular culture should be cognisant of the extent to which the children are able to gain access to these technologies and the extent to which their societies support the use of such technologies in daily practices, e.g. in electronic banking, electronic shopping and leisure activities. The three chapters in this section of the book focus on the societies in which access to new technologies is common, and they seek to demonstrate what can be achieved through the use of these technologies in children's popular culture.

The first chapter, by Margaret Robertson, fittingly entitled *Opening Pandora's box*, sets the scene for addressing how these information technologies impact on the lives of young people. It involves a gaze into the future lives of children and the impact that such changes may have on cultures and environments. What will be the discourses used to accommodate these new technologies? Certainly, a strong dose of optimism will be required to address this challenge. The education process that is required to cope with the Information Age will need to be one that is centred on the construction of a socially just society. Margaret Robertson puts the case for the development of a theory that is grounded in the body as the referent object to promote an individualism in a world that is currently dominated by globalisation. In an attempt to consider innovative thinking for the 'new globalised spaces for learning', Margaret draws our attention to the localisation of space for children through their use of computer technology. She concludes with the advice for educators that knowing where children go in real and cyber space and time is an essential starting point for making good use of information technology in an increasingly complex world.

The second chapter, by Laxmi Ramasubramanian, focuses on children's learning with geo-information technologies – a phenomenon of great importance in their life-worlds, where numerous graphic images impact on their experiences. This chapter shows how working collaboratively with children to create information and communication technology applications can provide educators, information scientists and social scientists with better

understandings of how young people can reason, learn about, navigate and communicate their ideas about their world. The central thesis is that the use of technologies coupled with a constructivist instructional paradigm enable young people to assume more responsibility for their education. It is illustrated by discussion of geo-information technologies or Geographical Information Systems (GIS). The practical applications of GIS that children can use and the pedagogical models that teachers can use to introduce information and communications technologies to young people may be combined to produce exciting learning experiences for these children. How this may be achieved is demonstrated in the 'Digital Technology, Young Voices' project, which was implemented with young adolescents in New Zealand in the late 1990s.

The third chapter in this section, by Victoria Carrington, focuses on language and cultures, and draws our attention to the various discourses that link to our sense of identity and frameworks for living. In so doing, she focuses on some of the specific knowledges, spatial understandings and skills that characterise the lives of children in Westernised societies. Popular culture is shown to be a central force in the creation of literate bodies of people. Television, cable, video, movies, clothing styles, shopping malls and amusement parks are key elements in the fabric of popular culture as children experience it. The literacies developed by children from using linear print-based texts are quite different from those developed using multi-modal texts such as those found on computer screens. The interactions with different forms of popular culture help children to develop different skill sets that are used regularly in the various discourses with which they engage at home, at school and in the wider world through the Internet. This is producing a discourse gap as children develop new forms of discourse, as compared with the ones their parents hold and use. Ideas of reading are now associated with single and multidimensional texts. Understanding the literate landscape these days is a much more complex phenomenon than it was a decade ago. This heightens the challenge for educators of young minds in schools.

Collectively, these three chapters open the doorway to understanding the changing but powerful influence that popular culture has in shaping children's ways of thinking and behaving. It is a force that should be harnessed by educators and parents alike.

1

# Opening Pandora's box

*Margaret Robertson*
*University of Tasmania, Australia*

Ever wonder what sense children make of the world in the new millennium? For most people in the developed world, a daily diet of multi-media inputs starts with television before breakfast. The day may include a mixture of foods and products from all over the world, as well as from the local farm. At school they are likely to use the Internet, and increasingly the home computer is being hooked up for online activity. How do children process all of this information? What do they like most? Why? Do they 'see' the world through different eyes than their parents, teachers and older friends? What are their life-worlds really like? How do they see the future?

The various chapters in this book in their own way attempt to examine a series of perspectives that add to, and offer solutions for, the puzzles raised by these questions. They may not offer the answers to all queries, but they do add to the mozaic of overlapping conversations taking place on what might be loosely summarised as questions of youth identity, culture and place. The first half of this chapter attempts to open up a Pandora's box by describing some of the forces that shape the ways in which we think and behave. In the second half, some ideas on rethinking pedagogy and possible directions for curriculum reform are offered.

## Imagining the future

As in times past, we all make our own futures within the possibilities and limitations of our cultural environments. A century ago, educators, parents and other mentors of children would have felt reasonably confident that the advice they provided would help guide the young person to adulthood. Then, the enduring cultural and environmental determinism made the task relatively straightforward. The world of work, family and lifestyle aspirations of the modernist period meant that people could plan their lives and influence the next generation's future. Today, however, the future is illusionary. Global change makes the future difficult to predict in any geographical context. Old values come under question and, it could be argued, create power blocks against meaningful change.

The new 'generationalism' Davis (1997) describes is 'unlike previous outbreaks' of age- and ideologically based eras. Against the tide of economic rationalism, and at the start of the new millennium, the bulging population of baby-boomers, themselves the ebbing power brokers, belong to an era of self-indulgence and plenty. Material wealth and ample opportunities created by their post-World War Two parents provided a legacy they have been able to exploit to the full. Yet, their power can be viewed as 'a kind of cultural gate keeping' contributing to many of the rifts that now see young people 'demonised' and considered 'outsiders' (p. 16). Davis reflects on a radically different world for young people and an era where twentieth-century values connected with work, family, church and knowledge have changed. As he states, 'this is an age of single parent and "blended" families. Younger people have grown up in an era marked by HIV/AIDS ... Even the food people eat is different, with takeaway becoming the norm' (p. 16).

Describing this phenomenon in the Australian cultural context, Wark (1999) uses the term 'Burblers' to distinguish the media gatekeepers, the literary and artistic taste-setters, who reside comfortably in the suburbs with time to protest. The negativism that dominates their commentaries of contemporary events and issues is, in Wark's view, of their own making, and, in fact: 'The problem is that an ageing Burbler ascendancy can't or won't make an effort to understand the contemporary range of experiences and points of view' (1999, p. 227). Viewed in terms of these arguments, Davis

and Wark provide interesting challenges to our own cultural lenses. Our abilities to reflect and seek partnerships with each other are crucial if the generational dialogues are to be blended into a complementary set of future lifestyles.

The generational argument certainly has relevance in the context of educational curriculum. However, for those with the power to write the official documents that guide teachers in schools, the task is a juggling act. Expert 'older' groups speak from multiple perspectives and not just one agenda. Hence, finding a balance between meeting the demands of government funding sources and the various community stakeholders, who themselves can wield influence and persuasion over the processes through their respective organisational power bases, is a major challenge. Furthermore, the job of relevant educational leadership requires the courage to examine all points of view with some degree of 'objectivity' and clear vision of where the social 'shaping' of young people ought to be heading.

Some digression into the advice from philosophers such as Foucault is helpful. The influence of Foucault on educational writers (and critical theorists in general) is widely recognised. Rather than a 'them' and 'other', or dichotomous, view of power and knowledge and/or excessive historicism, Foucault entreats us to think of simultaneous spaces or platforms of knowledge discourses embedded in their own finite power structures. In *The order of things* (1970), he uses the term 'heterotopia' as a way to free the imagination from the finite boundaries of language, to dig beneath to hidden surfaces and nuances of knowledge and power, and to consider possible theories that might explain the 'disorder' of things. As he states: 'All knowledge is rooted in life, a society, and a language that have a history' (p. 373). On the 'outer limits of object and subject' (p. 372) questioning between spaces of difference is possible. Arguably, then, identities are in contested states, 'self' is a social construction and social agency can promote continuity or add to discontinuities of historicism.

Taken in the context of social diversity, global commodification, gender and indigenous discourses, especially in postcolonial settings, the need for some means to 'free up' our thinking from bounded historicism or 'looking back' foci is essential. Foucault's writings certainly provoke such reflection.

However, as Harvey (2000) notes: 'Foucault challenges and helps destabilize (particularly in the realm of discourse) but provides no clue as to how any kind of alternative might be constructed' (p. 185).

In moving thought along a path to comprehending the social complexity of our worlds, Bhaba's (1994) notion of cultural hybridity is instructive. Imagining identities in postcolonial space, he describes a 'new internationalism' with its 'history of postcolonial migration, the narratives of cultural and political diaspora, the major social displacements of peasant and aboriginal communities, the poetics of exile, the grim prose of political and economic refugees' (p. 5). Rather than embedding the argument in the demise of the grand narratives of purely rational modernism as ascribed to much of postmodern discourse, Bhaba chooses to question the politics of identity through critical analysis of alternatives. His rich collections of essays seek to reposition difference in the mainstream of history and history making. The language and signs of identity that exist in the doubling of 'self' and 'other' are interpreted as part of the hybrid transmission of social agency. On the margins of difference, identities exist where authority operates in contested spaces of insider and outsider behaviours that 'demonstrate that forces of social authority and subversion or subalternity may emerge in displaced, even decentred strategies of signification' (p. 145). What occurs then is a time–space historical lag where social agency is progressively absorbed through action from the fringes. As Bhaba states:

> The possibility of inciting cultural translations across minority discourses arises because of the disjunctive present of modernity. It ensures that what seems the 'same' within cultures is negotiated in the time-lag of the 'sign' which constitutes the intersubjective, social realm (1994, p. 247).

Bhaba problematises identities in space now – not in the past and not bound by the norms of the past.

Writing on gender in place and space, Massey (1994) uses Bhaba's argument to highlight the difficulties of bringing in minority voices from the 'cold'. Part of the dilemma is that constructing structures that can accommodate such electicism as the 'here and now' is frightening. Where are the social norms to guide decisions? How do we know that what we do is 'right'? For

educators the questions are fundamental in the preparation of young people to operate as successful citizens in this 'new internationalism'. Imagining the future is perhaps not so tough as imagining the present.

## *The crucial role of optimism*

If one generational indulgence can be forgiven, it is to conclude that change, sadly, is slow, and that the legal and political systems are usually the slowest to respond to calls for social reform. Caution is, of course, part of good planning. Democratising decision-making is the basis of social justice and equity. Realistically, however, unless minorities are able to mobilise great strength, they remain repressed with limited access to the power. The rhetoric that all voices are heard through the democratic process of voting works well for the ruling hegemony. However, minority voices are seldom heard without public sponsors and financial backing. Nevertheless, at great personal cost, 'miracles' do happen. Geographies of resistance can result in political and social change (Pile & Keith 1997). An example: After years of political imprisonment, Nelson Mandela managed to confront the ruling minority in South Africa to give his people freedom. This rare human being is the ultimate role model in offering hope to oppressed peoples. Not that his ascendancy to power was without compromise. History shows that, for authentic change to occur, a crucial element is a willingness to shift position or negotiate towards a shared vision of which all parties, ruling and minority, can claim ownership (Friere 1972). Such was the experience of the Australian population at the 27th Olympic Games in 2000. National pride in the eyes of the world overcame individual prejudice and political divisiveness. Time will tell if that euphoric pride will assist the country to reach lasting agreements on such contested issues as reconciliation with its indigenous peoples. Of one thing I am sure – education can help that process.

## *Collective thinking versus individual freedoms*

Articulating the kind of education that will aid the construction of a socially just society is not only problematic; it remains centre-stage of a likely long and continuing debate. A world full of contradictions is the way in which Harvey (2000) views the present. In *Spaces of hope* (2000), Harvey asks:

> But what kind of world are we embedded in? ...The sheer enormity of that world and its incredible complexity provide abundant opportunities for the exercise of critical judgement and of the limited freedom of the individual and collective will. But the enormity of apparent choice and the divergent terrains upon which struggles can be conducted is perpetually in danger of generating a disempowering confusion (of the sort that globalisation, for example, has strongly promoted) ... How are we to cut through these confusions and build a different sense of possibilities while acknowledging the power of the constraints with which we are surrounded? (Harvey 2000, p. 233).

Faced with the problem of understanding their own responses to changed social contexts, as well as guiding behaviours of young people, the uncertainty of views such as Harvey's provides little solace for educators. Meeting such challenges is a good illustration of the contradictions we face in the here and now. For instance, institutional collectivities having undergone their respective processes of economic rationalism in the late twentieth century now seem locked into a phase of rulebound managerialism. External to the person, these structures control our daily lives while at the same time we have unlimited access to knowledge, products and experiences of other places and global spaces – all with their competing structures and agendas. Not surprisingly, problematising such complexities is extremely difficult; translating these to a coherent view of education is even more complex.

Theorising is useful. We all need some hooks on which to hang our understanding and to guide our behaviours. However, for teachers in schools and for parents there is little time for luxurious pondering. Help is needed now or the social risk of alienating young people from our existing institutional structures through irrelevant and outdated curriculums is real. Already there exists in the developed world a rising cohort of young people marginalised by unemployment. With the risk of joining the downward spiral of economic fortunes towards long-term poverty, they face a future deprived of hope as defined by the ruling class. Youth workers and professionals interacting with young people have plenty of stories to tell of how the class divide between the rich and poor in capitalist societies creates tension and conflict. The marginalised, who become victims of the social norms, are

further and further ostracised from opportunities to 'fit in' or attempts to make changes in their lives.

So why cling relentlessly to patched-up educational formats that are creaking at the seams? Why can't we simply sit down at the round table, discuss the issues and set up a plan for action? LeFebvre advocates talking to the 'users' of space. In his words: 'We look with the eyes of unskilled aesthetes who confuse natural facts from human facts. We are caught in a hybrid compromise between aesthetic spectacle and knowledge' (1991b, p. 132). And the danger is that our own cultural lenses can block radical rethinking. 'Discovering' the knowledge to guide young people's futures is likely to be found in sometimes forgotten spaces – their daily lives – and not in the institutional handbooks on curriculum.

## Searching for a new theory – space and the body referent

Good teachers have always known the importance of getting to know the child as a person. Early in the twentieth century, John Dewey urged teachers to look to the everyday lives of children and seek ways to bring these experiences into the classroom. The revived interest in his writings a century later is of considerable interest. What seems to have happened is a shift in mainstream thinking away from theory grounded in 'known' principles and accumulated ideas to a slight unease about the world and a search for new meanings through fundamentals.

With time and space no longer connected in predictable ways, collective social thought, such as the rigid nationalism that we see in Eastern European power struggles, seems to belong to past cultural identities. In *Justice, nature and the geography of difference*, Harvey (1996) asks: 'Who are we and to what space/place do we belong? Am I a citizen of the world, the nation, the locality?' (p. 246). Perhaps as a response to these puzzles, many writers have returned to grounded thinking that centres on the body as the irreducible object through which space and time are experienced. In the pursuit of knowledge concerning the content of youthful experience, current debate on the body as the basis of social agency and power is interesting and one worth exploring in this opening up of Pandora's box regarding the lived world of

young people. This conceptualisation does not in any way attempt to reinvent Dewey's principles of pedagogy. However, writings such as LeFebvre's *The production of space* (1991a), along with Dewey's constructivist view of knowledge set out in *Democracy and education* (1916), do help educators develop their own pedagogical theories of how child-centred learning for local, national and global citizenship can be promoted. Those theorists who think deeply on these current and continuing dilemmas provide a wisdom from which we can look to developing the practical strategies that reflect best practice, just as Dewey's writings of another era still entreat us to do.

Termed 'body politics', this 'new' referent is guiding disciplines as diverse as architecture (see Blythe, Chapter 6 this book; King 1996), cultural geography and studies (Crouch 1999; Gregory 1994; McDowell 1999; Mitchell 2000; Robertson & Gerber 2000; Skelton and Valentine 1998; Soja 1996), philosophy (Harvey 2000) and sociology (LeFebvre 1991a; Macnaghten & Urry 1998). What is fascinating about this line of enquiry is the heavy emphasis placed on youthful experience – memories of the child wrapped in sensory imprints linked with familiar spaces of home and other recalled places. For instance, Stratford (2000), in her research working with young children aged ten to twelve years old in school classes was able to show that, while there can be agreement on the importance of place to memory recall, shared experiences of place will result in different images for each person. In itself this appears to be common sense, but the fact that the children themselves made this observation regarding difference is a potent reminder of the need to be consultative with young people as individual contributors in society. Theorists may appear to be raising more questions than providing solutions to current realities. However, could it be that the behaviours of self in the context of familiar places, with their associated memories, can help explain the localised impact of globalisation? Arguably then, looking back to a past youth can be an instructive starting point.

But, to return to Bhaba and his concern for the 'now' of being requires us to look to youthful behaviours in the present. In this respect, Davis (1997) notes: 'This complex, multi-layered world might be confusing and disquieting for some, but younger people... are by and large making sense of it. They are familiar, even comfortable with contingency' (p. 264). Rather than

a recalled youth, this observation begs us to open our eyes to what young people today are doing with their time. Assuming they generally do lead healthy, productive lives, despite the vagaries which we adults may perceive, then is it possible to look to young people as holding the secret of success in a time-space compressed world?

Youth being regarded as having such power is not new, either. Theorising on the role of age and power, Bourdieu (1993) observed the trend of intellectuals and artists or the avant-garde of society to 'align themselves with "youth" in their manner of dress and in their whole bodily hexis' (p. 105). Both belong to the emerging bourgeois from which power and money are 'temporarily withheld' but who are likely to emerge unscathed and perhaps powerful through their influence on schools and, as a result, culture, 'because they have canonised, academized and neutralised' (p. 106). Both Bourdieu and Davis affirm the (potential) hegemonic status of youth. In fact, if not explicitly then implicitly, Bourdieu appears to entreat educators to be bold, to challenge mainstream norms and provide the leadership required to 'normalise' or give legitimacy to youthful behaviours. Learning for a future of hope and optimism requires a willingness on the part of the institutional power brokers to listen to the voices of difference, and to value rather than judge diversity. If those who are the knowledge makers, the intellectuals and teachers, do not exert their accepted authority or social agency, the likely outcome could be conceived as further individualism, greater social fragmentation and, ultimately, anarchy.

To summarise so far, a theory grounded in the body as the referent object has appeal in the context of the 'individualism' (sic!) that globalisation appears to be offering. Within the available frameworks of information and communications technologies (ICT) and all the other dimensions of associated living, there is no doubt that personal geographies are being made. There are no time–space limitations on communication, as in the past. It is possible to have inexpensive, regular contact between people via cyberspace who may never meet in real time and space. And, fragmentation of local communities into more subgroups with even more diverse identities is an obvious by-product of the changes.

Amid this turbulence, then, and in the quest to grasp meaning, it is

tempting to be seduced into thinking that we need to shed all that has happened in the past; to shed that historicism and seek some kind of new beginning or renaissance – perhaps through the body referent. But, as Harvey (2000) warns, there is danger in 'the idea that the body is the only fund amental concept we can trust in looking for alternative politics' (p. 119), for in Marxist terms 'human beings are both social and political animals needing intimate relations with others and that such forms of social relating constitute and sustain civil society' (p. 119). Nor can there be comfort in seeking understanding in 'the liberal eighteenth-century ideal of the 'individualism' endowed with 'moral autonomy' (p.119). The truth is that what can be perceived as personal power at a surface level is likely to be influenced by all kinds of subliminal pressures.

So, the body referent argument seems itself in troubled space and unlikely to yield too much help for a confused educator. Where to next? Perhaps better guidance for comprehending social agency in the context of current and continuing change is to be found in the writings of LeFebvre. His theory of a new kind of social space, an abstract space where differences are respected and distinct from periodised historical space and absolute space, provides a more constructive, if not complex, view of how we might construct meaning within our environments. Translated to everyday living through the concrete model of the triad of perceived, conceived and lived spatial interactions, he argues: 'The user's space is **lived**' and that space has its origins in childhood (1991a, p. 362). He also states that 'space of everyday activities of users is a concrete one, which is to say, subjective' (p. 362). If this is the case, then knowing more about the private worlds of young people – meeting places, public and private spaces, will provide insight into where conflicts occur, and that which 'gives space a function, practically speaking' (p. 363). Perhaps then we will get to the truth of what matters to people.

No doubt Dewey would be bemused to read such an obtuse argument regarding everyday experience and how we can utilise such personalised learning in educational contexts. To complicate (or forget) what appeared such obvious educational truths of the past century could be regarded as folly, indeed. So, is it possible to toss some glitter on Pandora's box of troubles with lived experience today? Assuming some agreement on the

content of moral and ethical authority is possible, could we not conclude that the principles of talking, listening, reflecting, planning and acting remain at the heart of good teaching? Children can be cultural architects, and some would argue that in the current context they are the only valid social agency. They are coping! Bringing in their experiences from the margins could legitimise their emerging identities and help resolve social tensions for us all.

## *An action plan for education*

Some will, no doubt, view all the previous theorising as escaping the irreducible reality of providing viable education for young people in the here and now. To some extent this view of the procrastinating 'big picture gazers' encapsulates the continuing dilemma for education. If schools and universities are to be the centres of the production of knowledge, there is an underlying assumption that they know how to create the knowledge required. At the same time, in the daily routine of doing the job of guiding young minds, teachers generally have little time for generating theory. The spark for innovation may and can arise from the dialogues with learners. However, having some input from other perspectives can help in interpreting these, or in getting the best out of the content revealed by young people concerning their private lived experiences. What follows is a brief discussion of some personal thoughts and of the suggestions from writers in the mainstream of innovative thinking for the new globalised spaces of learning.

## *The localisation of space – the stories of youth*

Consider Lisa, a fifteen-year-old girl who attends the local secondary high school in a residential area with high levels of public housing and welfare-dependent families. To pass the time, she, like many of her peers, spends up to three hours per day hooked up to the Internet, using chat rooms and e-mail. At home the computer is located in the living room, where all family members spend time. Lisa's parents have little knowledge of computers and, although the computer is located in a public space within the home, they appear not to monitor her interactions. Could it be that their (parents' view) of the world is that computers are essential for educational advancement and that provision of the tool may be a pathway out of the poverty trap towards a more secure

and productive future for their children? If they monitored their daughter's online behaviour more closely, they would find that the content of her interactions is the same old adolescent story of talking with friends – often living in the same street. The computer for Lisa is the telephone of her parents' generation and the chat over the back fence of her grandparents' day. Nothing has changed – or has it?

Returning briefly to LeFebvre's notion of abstract space, it could be argued that Lisa has created a new space with its own rules and constrictions, but one that is of the here and now. The mystique lies not in the technology itself, but in the blockages those of earlier eras may have towards ICT. For the young, the issues are easy – the experiences are a seamless continuation of the normal social development of generational challenges and the struggle for personal identity.

Another illustration of the translation of globalisation into localised experience is the way in which we view locality. Some hold fears that increasing global capitalism will or could destroy local customs and sense of place. Travellers will be well aware of the global penetration of fast food chains, consumer products including clothing and food, and increasingly Internet cafés into all parts of the Earth's communities. This is a world where the shopping mall becomes the social meeting place of the young; call centres bring globalised business operations to a locality and a new collective of people; mobile telephones are the transportable toy and scooters the way to get around. In fact, to the adult observer, young people living in Seoul, Tokyo, New York, Sydney and London appear to have a unifying, same 'look'. The question is, do they 'belong' to a global place? Do they belong, contribute or make some kind of new spatiality? On the surface yes, but as researchers are finding, beneath the surface remain the social rules and values of the home, neighbourhood and community. As McDowell argues, 'globalising forces reconstruct rather than destroy localities' (1999, p. 3). The configuration of spaces accommodates difference, but within a locally defined set of rules.

## To conclude

Although it may seem trite, the best advice for educators in the here and now would appear to be to 'go with the flow'; to remember the principles of good

teaching and to work collaboratively with young people, who appear to absorb so readily the new global toys into their sense of self. Knowing where they go and how in cyber and real space, and in real and cybertime, is the obvious starting point for relevant guidance. In Dewey's words: 'Thinking that is not connected with increase in efficiency in action, and with learning more about ourselves and the world in which we live, has something the matter with it' (1916, p. 152).

Our children are our primary hope for the future. If our consultations with children are to be useful, some assumptions about the development of the micro world of the self need to be made. Who wants to be categorised as one of Wark's 'aging Burblers' (1999)? We need to be open to difference and seek access to the concrete paths of subjective worlds. The private realms of young people may well hold the key(s) to our futures. Pandora's box is full of hazards, but its secrets are our hope.

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2

# Children's learning through geo-information technologies

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## Introduction

He took out his wand, touched the parchment lightly and said, *'I solemnly swear that I am up to no good.'*

And, at once, thin ink lines began to spread like a spider's web from the point that George's wand had touched. They joined each other, they criss-crossed, they fanned into every corner of the parchment; then words began to blossom across the top, great curly green words, that proclaimed:

*Messrs. Moony, Wormtail, Padfoot and Prongs*
*Purveyors of Aids to Magical Mischief Makers*
*are proud to present*
*THE MARAUDER'S MAP*

It was a map showing every detail of the Hogwarts castle and grounds. But the truly remarkable thing was the tiny ink dots moving around it, each labelled with a name in minuscule writing. Astounded, Harry bent over it. A labelled dot in the top left corner showed that Professor Dumbledore was pacing his study; the caretaker's cat, Mrs Norris, was prowling the second floor...

(Rowling 1999, pp. 143–44)

The preceding excerpt is from the third book in the Harry Potter series. Over the past few years, these books have become popular with children, young teens and adults. For those who are unfamiliar with the stories, Harry Potter is a young wizard attending a wizardry school called 'Hogwarts'. Harry's adventures with his friends Ron and Hermione have captured the imaginations of readers worldwide. However, despite his exalted status, Harry is a typical kid and, as the excerpt indicates, he has just received a device (a map) that provides him with information and directions to get to places – places from which he has been specifically ordered to stay away.

Thinking about the Marauder's Map, one wonders what information systems applications created by young people would look like. Some of us may speculate that such applications are likely to provide self-absorbed, egocentric views of the world transferred onto a digital medium. Others may speculate that most young people are unlikely to have the cognitive and technical capabilities required to be able to conceptualise and create interesting and useful information and communications technology (ICT) applications for their peers.

In this chapter, I argue that by working collaboratively with young people to create ICT applications, we (educators, information scientists and social scientists) have a unique opportunity to understand better and to explain how young people reason, learn about, navigate and communicate their ideas about their world. Although the technologies by themselves are no panacea, I propose that the use of information technologies, when coupled with a constructivist instructional paradigm, enable young people to assume more responsibility for their own education. Instead of remaining passive consumers of information, they now have the opportunities to conduct 'research' to address real-world concerns, work collaboratively and, ultimately, to become producers of knowledge. This argument is elaborated by discussing geo-information technologies, also known as Geographic Information Systems (GIS).

In this chapter I discuss some of the technologies needed to sustain a real-world ICT application like the Marauder's Map, and argue that young people have a unique opportunity to make use of these technologies to develop practical applications. I also discuss issues related to ICT in school

environments, addressing issues of access, the role that teachers play in creating meaningful learning experiences and the pedagogical models that are appropriate for introducing ICT to young people. I use an example to illustrate the powerful role that GIS can play in young people's attempts to develop innovative ICT applications. Some common themes that are essential to the creation of successful learning experiences using GIS/ICT are also highlighted.

## Marauder's Maps for muggles [1]

The Marauder's Map is an interesting device. Let's see what it can offer: it provides pertinent spatial and temporal data, overlays information about different attributes, it is compact and portable, and serves as a user-friendly navigation system. As we learn later in the story, the device also affords Harry privacy because an uninformed user cannot easily activate the map's unique capabilities.

If one visualises navigational systems as used in cars, the similarities between Harry's map and modern ICT applications can be observed readily. For example, a sophisticated vehicle navigation system provides up-to-date directional information, based on user-defined parameters such as trip-time or road quality, in addition to providing information about specific attributes such as addresses of restaurants or accommodation facilities along the route. Despite being a fictional device, the Marauder's Map offers similar sophistication because of its capacity to display spatio-temporal information, tailor-made to serve the needs of young students such as Harry. A perfect device for a modern teenager, one might argue.

Several technologies underly vehicular navigation systems. Satellite-based communication devices known as Global Positioning Systems (GPS) provide extremely accurate latitude, longitude, directional and elevation information to hand-held navigational units. A GIS, an automated system for creating, editing, analysing and displaying spatially referenced data, allows users to integrate data from a variety of sources and to perform simple spatial queries essential to navigation, such as 'Where is the nearest petrol station?' More complex queries such as 'Which route to destination x offers the most

1 In the Harry Potter books, wizards refer to ordinary people (non-wizards) as 'muggles'.

scenic view?' can also be performed to create a user-friendly, interactive map (Huxhold 1991; Ramasubramanian 1995). Most of these systems are likely to have touch-screen functionality, and some may have inbuilt voice-recognition systems, both for convenience and to restrict misuse.

Although vehicular navigation systems are not particularly useful for young children or teenagers who do not have access to private transportation, it is interesting to speculate how they would adapt the application to serve their own needs and interests. Perhaps the 'scenic view' criterion would be replaced by 'most shopping malls'. Perhaps not. The point being made is that with the ICT explosion and the relative affordability of computers, Internet access and other tools, young people have the opportunity to create devices or applications for themselves.

## Youth and information technologies

Although the catch-all term 'information and communications technologies' usually refers to many different types of computer-based systems, these systems are typically identified by their reliance on digital data and their capacity to create and sustain complex electronic networks. Information technologies are in a constant state of change and transformation, and our understanding about specific technologies rapidly becomes outdated. In many instances, information technologies are embedded in other applications and are not easily distinguishable (e.g. CAVE virtual-reality environments integrate a variety of systems including GIS and other add-ons such as real-time audio and video, images, text and graphics). The boundaries between previously familiar technologies such as the telephone, the television and the personal computer have become blurred.

Today's children and teenagers are growing up in a technology-rich environment. Just consider that the teens of today have never known a world without colour television, video games and e-mail. They routinely use technologies that serve functions not dissimilar to the Marauder's Map. For instance, many of today's teenagers have mobile phones or pagers provided to them by their parents or guardians. These devices allow parents and children to co-ordinate complicated schedules, they are useful during emergencies and, for adults, these devices can provide another way to keep track of where

their children or teenagers are at any given time. The Wireless Application Protocol (WAP), the technology underlying mobile phones, also can be used to track mobile phone users – as such, bearers of mobile phones can be seen just as the figures on Harry Potter's Marauder's Map.

At school and at home, many young people use e-mail and have online 'conversations'. They enter chat rooms and are familiar with the Internet and the World Wide Web, which they use to obtain information and advice. The extra-curricular interests of today's children and teenagers have directed them towards sophisticated multi-media applications such as virtual-reality adventure games, heavily reliant on sophisticated technologies. However, their knowledge about technologies and their extra-curricular experiences are seldom integrated into **formal** learning situations.

## ICT in schools

### *Philosophical debates*

Educators and policy makers often weigh the power and potential of information technologies against the potential isolating aspects associated with computers. For too many people, computer-mediated activity still conjures up images of children and young people who have withdrawn from 'normal' social interaction (Stoll 1995). It is also frequently suggested that young people are exposed to undesirable and/or dangerous situations when they spend too much time alone in cyberspace (Tarbox 2000). And perhaps because of these negative connotations, young people's actual use of, and positive experiences with, information technologies tends to be largely ignored.

### *The digital divide*

International research reveals that there is a persistent and growing divide between the information rich and the information poor (National Telecommunications and Information Administration 1999). In particular, the diffusion of ICT in educational environments is uneven; some children and teenagers have more opportunities to develop their technology skills than others (Conte 1994; President's Committee of Advisors on Science and Technology (PCAST) 1997; Valentine & Holloway 1999). In general, Australia's digital revolution follows these trends (Commonwealth of Australia 1999).

Particularly startling is one of the significant findings of an Australian national sample study conducted in 1998 of ICT skills of school students. The 'Computers, Change and Schooling' study found that school was an unlikely first venue for students to acquire advanced ICT skills – most children and young people acquired these skills at home (Australian Bureau of Statistics (ABS) 1999a; Commonwealth of Australia 1999).

In May 1999, only 47 per cent of Australian households (3.2 million) had computers, and only 22 per cent of households (1.5 million) had home Internet access (ABS 1999b). Considering these statistics, it becomes very obvious that access to computers and the Internet in educational environments is essential in order to reduce the inequities in household access to computers. State governments are making considerable progress in placing computers in educational environments. For example, the Computers in Schools Program delivered 90,000 computers to New South Wales (NSW) schools by the end of the first school term in 1999. Computers distributed under this program are leased so that they may be upgraded every three years. Internet access is available to all NSW government schools and TAFE colleges (NSW Department of Education and Training 2000). However, the benefits of information technologies are not yet reaching smaller schools, schools in rural and isolated areas and indigenous communities (ABS 1999a; Foskey 2000).

## *Teachers and technologies*

Several authors including Stoll (1995) and Oppenheimer (1997) have argued that information technologies are not an efficient medium of instruction because they are incompatible with the demands of teaching. Setting aside ideological positions, the primary arguments can be narrowed down to variations of Larry Cuban's (1986) critique. Cuban argued that most teachers find it difficult to integrate computing into their regular instructional practices because of high student-to-computer ratios and heavy workloads. Furthermore, the considerable effort required to inculcate computer use among students is usually disproportionately greater than the outcomes. Finally, computers are foisted upon teachers, who do not ask for them and have no clear plans of how to use them.

Becker (2000), using data from a 1998 national survey of US teachers,

reports that Cuban is correct to the extent that computers have **not** transformed the teaching practices of a majority of teachers. Evidence of innovative computer use for instruction is found only in instances where teachers were comfortable with the technologies and moderately skilled in using them. However, not all teachers have reached this comfort zone or skill level (Commonwealth of Australia 1999; Becker 2000). The professional development of teachers is critical to the success of ICT adoption in educational environments (Conte 1994; PCAST 1997; Commonwealth of Australia 1999).

Much of the focus on the Internet and information technologies has centred on connectivity. However, students' successful experiences using information technologies rely on the quality of content and curricular linkages. Teachers play a crucial role in assisting students to sift through the barrage of information received when they get online and in making the connections with other substantive disciplines. To a great extent, teachers' philosophical positions on teaching practices influence how they use information technologies.

## *Information technologies and constructivist pedagogy*

Constructivist theory posits that children actively construct knowledge by building new information onto pre-existing notions, and that they are capable of modifying their understandings of phenomena in the light of new data. This construction of knowledge happens in a social context. Today's constructivist-oriented research and classroom pedagogy build on such key contributors to education as Jean Piaget and John Dewey. Educators espousing constructivist philosophies emphasise students' ability to solve real-world, practical problems, encouraging them to work in co-operative groups rather than individually. The role of the teacher, the materials and techniques used in the classroom, the quality and volume of content delivered to students are all transformed when a constructivist pedagogy is adopted (Conway 1997, PCAST 1997; Edweek 2000 ).

Adopting a constructivist paradigm requires that:

- Educators place greater emphasis on the acquisition of higher-order thinking and problem-solving skills, rather than on learning many isolated facts.

- Basic skills are learned as students cope with higher-level, 'real-world' tasks that require the acquisition and integration of a number of such skills.
- Information resources are accessed by the student at that point in time when it becomes useful/necessary to perform a particular task.
- The student assumes a central role as the active architect of his or her own knowledge and skills, rather than passively absorbing information (PCAST 1997).

The constructivist learning paradigm is consistent with the goals of critical educators such as Freire, who posit that such 'problem-posing' education is essential to social change (Freire 1989). Shifting the focus from teaching **about** technologies to teaching **with** technologies allows students to use information technologies creatively.

Unfortunately, the most typical uses of information technologies in schools are related to the teaching of students about the technology itself, or to facilitate student learning at a basic level; e.g. drill and practice. Although these methods of using computers to aid learning have allowed students to set their own pace while learning basic reading/writing or mathematical skills, they have not tapped the full potential of information technologies. For example, Becker (2000) reveals that 'most in-class use of computers occurs as part of separate skills-based instruction about computers'. The Australian 'Computers, Change and Schooling' study found that, although many teachers stated that information technologies were a worthwhile addition to teaching all subjects, in-class use of computers was in fact limited to certain subjects like Technology, Enterprise and English. In all subjects, the creative and communicative uses of computers were lower than anticipated (Commonwealth of Australia 1999).

Integrating technologies within a constructive learning paradigm requires computers to be situated in classrooms (creating opportunities for in-class use) rather than in designated computer labs, a low student–computer ratio that provides opportunities for individual and group learning, and skilled teachers who are comfortable and proficient in working across a range of hardware platforms and in using a variety of software. Teachers' own philosophies regarding constructivist methods, as well as their

own philosophies regarding how and why computers should be used in the classroom, are also significant.

Despite these barriers, many educators around the world are making great strides in finding innovative ways to integrate technologies in the creation of learning experiences. Many of these innovations emerge from partnerships between universities, schools and various for-profit and not-for-profit organisations. One such innovation is the Computer Clubhouse (http://www.computerclubhouse.org). A project that began in Boston with the support of the Boston Computer Museum and the Massachusetts Institute of Technology's Media Lab, the Clubhouse was a learning environment that encouraged users to express themselves using a range of new technologies. The project encouraged users to develop their own interests and engaged them in design activities; that is, in the construction of personally meaningful images, stories or games. As participants spent time on these activities, they developed a wide range of skills. In time, some regular Clubhouse users became mentors to other youth, taking responsibility for computer set up and being able to troubleshoot problems. Others developed their own technical skills and began to use the technologies as 'tools for thinking' (Resnick, Rusk & Cooke 1999). The model has been adapted successfully and is now used in various cities and communities across the USA.

Major vendors of software have developed and maintained a variety of programs to promote innovative teaching with technology. For example, the Environmental Systems Research Institute (ESRI), one of the leading vendors of GIS software, maintains a site (http://www.esri.com/industries/k-12/hrproj.html) which provides links to innovative projects around the world that are geared towards 'helping teachers engage their classes in activities that involve critical thinking about spatial information'.

Following, I discuss one such experience that I designed in order to highlight some of the common themes that contribute to the success of such experiences.

## Digital Technologies, Youth Voices

In 1998, with the support of the Geography Department at the University of Auckland, I was able to initiate a participatory action research project called

'Digital Technologies, Youth Voices'. The project had the following objectives:

- to introduce students to a range of information technologies, in particular GIS;
- to establish a participatory framework that would enable students to identify and address real-world urban issues, using computer-based analyses, and
- to develop a replicable ten to twelve-week teaching module that would integrate information technology use within the Social Studies curriculum.

The project was established in a multicultural, inner-city school for girls in Auckland. The Youth Voices project was advertised as a voluntary, after-school activity, and was open to high school students (aged 13–15 years). Students were expected to meet with me in a group situation for an hour, one day a week. No special computer knowledge or background was required. Fourteen students with different curricular backgrounds signed up. At the outset, the students were asked to identify a range of urban issues that concerned them. Rather than come up with a frivolous list, they identified complex urban problems. These included environmental concerns, the poor public transportation infrastructure, and alcohol and drug use among youth. They identified these problems based on stories in print and television media, and through conversations with their parents and peers. The students were then challenged to identify one or two aspects of the larger problematic situation that they wanted to address through the Youth Voices project. At this stage, the students organised themselves into three teams, based on the nature of problems they had identified. The first team decided to tackle the problem of litter in and around their school. The second team decided that the lack of accessible play spaces for young children in one particular neighbourhood was a cause for concern, while the third team decided to deal with the needs of youth. Once the teams had reached a consensus on a 'researchable' problem, they had to determine the action necessary to develop a solution. Their overall task was to solve the problem they had identified, based on some research and analysis. The groups grappled with questions such as, 'who will benefit from your work?' and 'what information do you think you will need in order to develop your solution/solutions?'

The team which sought to address the needs of young people began by talking in general terms about the need for a 'youth place', a safe place where young people could 'hang out'. As they talked with me and with each other about the problems affecting young people, they observed that young people were not always aware of safe entertainment and recreational opportunities open to them in the city. Furthermore, simply 'hanging out' attracted unwanted attention from adults and police. They acknowledged that, as younger teens, they were often unwelcome in places and events where older teens gathered. Eventually, they decided that it would be a good idea to develop a virtual information kiosk – City Search, which could provide information and advice for young people in the central city.

The City Search team began to gather data and information from a variety of sources. In their own time, these students browsed through the Yellow Pages to gather street-address information for places of interest, and contacted the local bus company to find out bus schedules and bus routes to various destinations. Along the way, they learned to assign responsibilities and to keep each other on track. One of the goals of the City Search team was to make its information kiosk interesting and useful to other teenagers. Therefore, the team designed and implemented a survey of peers in order to understand better their recreational interests. Subsequently, the team sorted the survey data and created simple graphs (e.g. Table 1). All the gathered data was mapped on a GIS, using the software MapInfo™ with my assistance.

The team developed the schema for an interactive webpage that provided dynamic links to maps such as those of central Auckland (shown on Figure 1). The maps allowed users to identify possible recreational opportunities within the central city, based on specific criteria, and to estimate how long it would take to reach those recreation destinations by performing simple spatial queries.

Over the course of the twelve weeks, the students learned a range of skills, including the use of several types of software that facilitated word processing (Microsoft Word™), mathematical calculation and graphs (Microsoft Excel™) and presentation (Microsoft PowerPoint™). The students who were already familiar with some of these software programs improved or advanced their skills. As each participant in the City Search team learned new skills and became comfortable with using the software, she shared the knowledge with

*table 1* ***Survey Data of Young People's Interests***

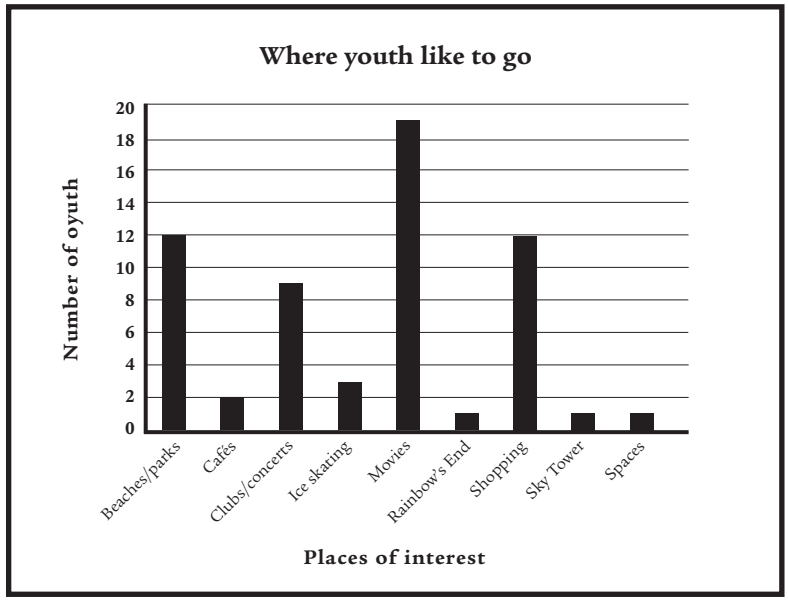


*figure 1* ***Map of links to Central Auckland***

other team members. Students also learned how to use the GIS software MapInfo™ to create, edit, customise, display and print maps, and to perform simple spatial queries. Teaching the students basic concepts of GIS was made easy because the learning occurred in the context of developing the virtual information kiosk. Under supervision, they also 'surfed' the World Wide Web to gather information for their project. Some of the students with access to computers at home communicated with me via e-mail.

At the end of the twelve-week period, the three groups presented their work to a larger audience consisting of university faculty, representatives from the Auckland Regional Council, parents and school staff. As the excerpts from project evaluations reveal, the Youth Voices project created many spin-off effects. In addition to learning about a range of technologies, participants integrated their understandings from a variety of school subjects in order to resolve a specific socio-spatial problem. They also reported:

'We learned that team work and co-operation are very important.'

'Learning in a small group was good because we all got to share our ideas. We started assigning each other different tasks.'

'We got to make friends with others in our group, some we had never met before.'

'We all needed to work together, compromise a lot, be organised and willing to work. Making decisions was hard as we all had different ideas.'

The City Search project was a prototype of a useful information technology application that integrated several technologies, including GIS. It allowed young people to identify a problem and develop a framework to solve it, acquiring a range of skills in the process. The Digital Technologies, Youth Voices project accomplished its objectives by demonstrating that integrating information technologies in developing problem-solving information technology applications facilitated participatory learning and contributed to individual and group empowerment (Ramasubramanian & Logie 1999). The factors that created this experience can be examined in greater detail.

## Creating successful learning experiences

Four issues were critical to the success of the Digital Technologies, Youth Voices project.

### *Trust*

Trust is a vital ingredient in the development of any truly participatory learning experience. However, information technologies are frequently suspect because they often promise far more than they can deliver, making teachers and administrators wary of new technologies. In the case of the Digital Technologies, Youth Voices project, trust operated at two levels. First, the school's principal and its Social Studies teachers were required to trust that the Youth Voices project would be beneficial to their students. Second, the students were required to trust that their commitment of time and energy over an extended period ultimately would prove to be beneficial.

The groundwork for the project was laid well before the project began. Considerable time was invested in explaining the philosophy underlying the project, and the potential implications for student learning were discussed with the principal and the Social Studies teachers. The teachers were invited to a special day-long training seminar about the use of GIS, so that they could become comfortable with the technology. Students were shown examples of university students' work, and a question-and-answer session helped to allay students' fears about any aspect of the project.

### *The role of advocates*

Advocates, or 'champions', are critical in ensuring that information technologies are adopted in learning situations. For the Youth Voices project, the idea was supported and championed by several people including the Head of the Department and key faculty involved in teaching GIS in the Geography Department at the University of Auckland. Access to computer labs, publicly available data sources and technical support proved to be invaluable. In addition, the faculty interacted with the students as they worked in the labs and took an active interest as the project developed. A major software vendor provided GIS software to the school free of charge, while another vendor subsidised training in basic GIS concepts for a group of geography teachers. The Social Studies teachers at the school worked closely with me and helped to establish the school–university partnership. The teachers advertised the project in their classes, negotiated parental permissions and access to computer labs

at the school. One of the teachers regularly attended the weekly meetings with the students, and provided advice and support to one of the teams.

***Credible process***

The design of an appropriate and credible participatory process often has significant bearing on outcomes. All those who participated in the Youth Voices project chose to be involved. Each participant was offered the opportunity to develop her own interests at her own pace. Each student determined the scope of her work/effort within the guidelines established. Students had great freedom to explore and articulate their ideas, but created an environment that constantly challenged them. As students became aware that they were being introduced to the same concepts and ideas as first-year university students, they recognised that high standards and expectations were being placed upon them. Visits to the university energised participants. Many of them were initially over-awed when told that they could use the sophisticated computers and equipment used by regular university students, but soon settled down and enjoyed the experience. Although the students were familiar with group work, this project was different, in that the students themselves determined how and with whom they would collaborate. Teams were self-selected, and collaborative work was not based on pre-assigned roles.

***Technology and data issues***

The lack of access to new technologies within the school environment poses serious limits on the development and implementation of technology-based, participatory learning endeavours such as the Digital Technologies project. Several barriers had to be overcome. For example, since most of the school's computers were set up in large laboratories, the school's ICT administrator was initially reluctant to install the required GIS software on a few machines. Likewise the lab. machines were not configured to facilitate web surfing or e-mail. In the case of the Youth Voices project, the problem was resolved by having students use the Geography Department's computer labs for all complex tasks such as GIS-based mapping, colour printing, and webpage design. As indicated earlier, the unintended positive spin-offs of bringing the

students into the university more than compensated for the hardware/software problems at the school. The benefits of GIS are fully realised only when there is familiar, local data that can be mapped and displayed. In the case of the Youth Voices project, the students' survey provided a useful database.

## Conclusion

This chapter began with a discussion of the Marauder's Map and its relationship to the modern technological world in which our children live. A range of issues relating to ICT in schools was discussed, concluding that the experience and knowledge that young people have about information technologies is seldom integrated into formal learning situations. An exception is the Digital Technologies, Youth Voices project, which provided a framework for introducing ICT/GIS in such situations to create successful learning experiences. The project adopted a constructivist pedagogy and adapted it to include ICT. Furthermore, by focusing on personally meaningful projects and experiences, the Youth Voices project upheld a broader educational philosophy – 'constructionism' (Papert 1993; Resnick, Rusk & Cooke 1999).

Technological infrastructure, sophisticated technological systems and connectivity are by themselves not empowering. Instead, what they offer is a unique opportunity to transform what and how young people learn. I propose that, by constructing real-world concerns as sociospatial problems, we make it possible for young people to discover new activities that integrate knowledge from various subjects such as maths, science, geography and history. They also learn a different way of communicating with others, particularly with adults. As they develop their skills with an ICT application, young people become experts who are not passive consumers of information but active solution seekers. As evidenced by the Youth Voices project, the sense of creating an application for a real audience promotes a sense of ownership and caring about their work.

It is frequently argued that technical skills and technological literacy are barriers to the development of participatory learning experiences. In the case of the Youth Voices project, we found that the absence of technical skills was not a major impediment. The project did not emphasise or focus on the development of technological skills. In many instances, students were more

comfortable and accepting of new technologies than their teachers. They were willing to try new things, make mistakes and learn from their experiences. When one student solved a problem or found an innovative way of doing something, this knowledge was shared with other team members. The students' technological fluency evolved as a result of working on a set of problem-solving activities.

For educators, new information technologies herald sweeping changes. However, in order to take advantage of the opportunities they offer, we must be prepared to relinquish some of our own views and fears about these technologies and concentrate on developing activities, programs and projects that encourage critical thinking and collaborative work.

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3

# Language, discourse and popular culture

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## Introduction

Benjamin Whorf (1956) once argued that the language available to a community shaped its culture. That is, that the discursive resources of a society outlined the parameters of what was possible to think and do and believe. While we no longer accept the linearity of this argument, there is an obvious and mutually reinforcing relationship between culture and language. In a globalising world characterised by increasing homogeneity and heterogeneity, globalisation and localisation (Friedman 1995; Robertson 1992, 1995), we no longer live our lives within single and unitary discourse communities (Durrschmidt 1997). And, as James Gee (1991) noted, the various discourses within which we are embedded attach to our sense of identity and our frameworks for living. Language, culture and identity, then, cannot be unravelled from each other and studied in isolation. The ways in which children interact with and understand the world around them is enmeshed in this multi-layered and intricately connected matrix of language, discourse and culture.

For those of us living and working in modern Western societies, the language we use and the literate practices within which we engage are increasingly multimodal. That is, increasingly, they are simultaneously aural, spatial and visual. As well, expanding information technologies have positioned

most of us within the domain of a generic popular culture. Regardless of where in the Westernised world we are, aspects of individual and group identity and language resources are formed in relation to our immersion in shopping malls, television, video, film, fashion, magazines, newspapers, novels and computers. The mutually reinforcing nature of these relationships means that for our children, the discourses of popular culture form the schema within which they develop literate awareness and the specific skills of being 'literate' in their society. While many researchers (Cook-Gumperz 1986; Freebody & Welch 1993; Graff 1979) have noted the unproblematic link that is made between being 'literate' and being a morally upright and useful citizen, this is not the focus of this chapter. Instead, I wish to focus on some of the specific knowledges, spatial understandings and skills that are increasingly characterising the literacies children are developing in modern Western societies such as Australia. This chapter sets out, then, to overview in very broad strokes the landscape within which children growing up in contemporary Western communities develop their understanding of text and the various specific skills that relate to the kinds of literate practices within which they are engaged.

## Popular culture and language

Where do the skills, competencies, value systems and knowledge that create particular types of literate bodies and citizens come from? The answer is simple. From all around us – from popular culture. As individuals we learn the literate skills most suited to the lifestyles within which we, and our families, are embedded. Television, cable, video, film, print, recordings, clothing styles, celebrations, shopping malls and amusement parks – these are the fabric of popular culture, the mainstream cultural practices and systems of meaning which act to define a society. It is from these sets of global resources and their articulation through our particular and localised lives that we draw and enact the various discourses that shape our identities. Put simply, we cut and paste an identity for ourselves from all the cultural resources at our disposal. This is not an equitable or neutral process – different volumes and types of cultural resource are differentially available according to social, economic and cultural position. In turn, differing accumulations of various cultural discourses offer

differential social returns. That is, some types and volumes of cultural resources are worth more than others (Bourdieu 1984; Carrington & Luke 1997). In contemporary society, the most pervasive and accessible resources are located in the currents of popular culture and information technology, and it is from this pool that our children draw – at least in part.

## Literacy and popular culture

Imagine this scene. A small child, perhaps three or four years of age, sits alone in front of a computer screen in the lounge room of his middle-class Australian home. His parents are in the kitchen/living room preparing dinner for the family, which includes older siblings. The other children in the family are watching a video in another corner of the room. For this child, this may be the first moment of 'aloneness' he experiences for the day. But it is more than that. In a society increasingly characterised by information technologies, mass media and intensified work commitments for all family members, this is where he develops the discourses and literacy skills most appropriate to his life and times.

This child, let's call him 'Sam', is working independently of his other family members as he navigates the computer screen and programs. He has learnt, by trial and error and observation, the uses of various keys. He can load his own favourite CDROM. He clicks rapidly through the opening 'pages'. He scrolls down until he locates the link he wants. He understands the connection between webpages. He does not anticipate or expect that the hypertext 'page' will act in the same way that a printed page does. While it may appear the same briefly, he does not take them to actually be the same. Knowing this, there are choices to be made. He considers them. He talks to himself and to the computer – not aimlessly, but in relation to the various choices and challenges he confronts on each page. He presses keys, he presses 'back', 'forward', 'esc'. He navigates fearlessly through what, to an outsider, is a bewildering series of noises, music, colours, movement and non-linear text. Sam, in fact, is a 'cybernaut' (Healy 2000). He makes his way through links, icons and images. This is a 'reading' which does not follow the traditional linear pathway of printed text. There are multiple pathways to follow in order to access information, different organising principles – many of which are not

obvious on first visit. In order to make sense of this multimodal text, Sam has to call into play a sophisticated series of choices and cueing systems which shift with astonishing speed between visual, aural and written information sources. As Luke (1997, p. 20) notes, these software packages teach the 'user–learner certain cognitive mapping strategies'. Each text becomes, in this sense, a topographical expedition. This is a substantively different literacy experience than the top-to-bottom, left-to-right, linear passageway through printed text. Physical attendance and cognitive strategies are different.

This, then, is a qualitatively different literacy learning experience to that of earlier generations which developed specific skills in relation to static and linear printed text. Sam, however, is not an isolated *Wunderkind*. This same episode goes on every day and every night in classrooms, libraries, homes and workplaces across this country. Our children are becoming literate, but not the kinds of literates of which our teachers would have approved. The monomodal skills of an earlier generation are insufficient to allow Sam and others like him to 'read' the texts that construct many of the sociocultural environments in which they will live their lives.

Imagine, if you will, another scene. A young man in his mid-twenties is sitting at a computer. He is scanning hypertext pages. He is not randomly browsing. He is 'reading' for information. In order to accomplish this, he is using basic linear reading skills, but he is doing much more than this. He is making connections across pages; attending to multiple and changing spatial and aural markers of meaning. However, he denies that he is 'reading'. He claims never to read. And this is true. He rarely 'reads' print-based text. However, his leisure and work time pivot around the use and analysis of multimodal texts. This young man is engaged in literate practices that move beyond a linear reading of text, as is Sam. In fact, the term 'reading' is probably no longer a sufficient descriptor of what it is we do when we interact on multiple dimensions with electronically generated texts.

There are, in fact, fundamental differences in the ways in which multimodal text and linear text are 'read' (see e.g. Luke 1997; Synder 1998). As Moore (1999, p. 54) points out:

> Potentially, Web pages can contain any combination of word, sound, and image, and pages around the Internet are using them in increasing layers of complexity. Because it is a hypertext medium, clicking on any object could lead to other pages or other objects, and so not only is there a loss of the sense of linearity explicit in the print medium, but there is also a distinct possibility of losing one's way. With a book, it is clear where to start and where to finish, and it is easy to understand that page 15 comes before page 73. Reading in Internet text, on the other hand, is like a frog jumping around a three-dimensional lily pond: It can be difficult to stand back from the text to see where you are in relation to its whole.

Young children developing initial literacy knowledges and skills in homes where Internet access and CDROMs are available and used, and where Internet access is available, develop skills relative to these particular conditions and requirements. They learn to 'read' these texts in the most effective ways possible. Current generations of children are immersed in discourses of information technology that pervade much of contemporary popular culture – they see and hear people using computers and multimodal texts, and they live within semiotic webs composed of increasingly visual texts. As Kress (1997) notes, meaning is increasingly transmitted via visual texts. Meaning is also increasingly layered into various textual forms. It is in this environment that children are learning what it is to be literate, and are honing the various skills and competencies necessary to function effectively in our society.

These are, however, not necessarily the same skills and knowledges that accompany linear print-based texts. Consider for a moment the decoding of text. In the same way that static, print-based texts require a particular alignment of eye and print, a particular left-to-right and top-to-bottom pattern, multimodal literate practices require the co-ordination of shifting aural, visual and textual cues, and an interactive relationship. Differing physical attendance is required. An accentuated interaction between the physical body, the act of decoding and interpretation and the text itself, is generated.

## Discourse and text

Returning, for a moment, to Sam. Armed with these multimodal skills, Sam will 'read' the world outside his home in particular ways. However, as with the older youth, his desire and ability to do this cannot be understood outside the currents of popular culture in which he is immersed. He is especially attuned to the highly visual signs of popular culture. In fact, we may do well to recognise that Sam and his generational cohort live in a different semiotic landscape. His sense of identity and discourse community is shaped ever increasingly by the world outside his lounge room and classroom. He lives within a discourse community at once local and global. In what Stuart Hall (1991) influentially described as 'new times' – a post-Fordist economic and social system – older versions of literacy and older moral orders coexist with emerging literacies. New literacies and new value systems are emerging from the cultural resources and social needs of individuals living in a changing economic and technological climate. We find ourselves, then, in contentious times as generations of literacy definitions and discourse communities coexist, often uncomfortably. Luke (1997) argues that 'print literacy is not obsolete but certainly substantially transformed' and further, that 'we need a broader notion of a cultural and technological literacy that includes a study of the intertextuality of imageries, texts, and artifacts of media and popular culture' (pp. 24–25). In 'new times' the global and the local overlap, mutually reinforce and contest, riding the high tide of popular culture. The discourse community within which Sam is growing up, and the sense of identity, values and skills that he develops will reflect, the global and local nature of his world.

We are not, then, facing a 'generational gap', in the traditional sense. We are, in fact, facing a **discourse** gap. And not just one. Popular culture is generating a myriad of distinctive discourse communities between which members shift. Notions of unitary 'self' and a sole identity, linked to earlier economic and social structures, are insufficiently multidimensional, complex and flexible to accommodate these shifts. Discourse, as Gee (1991) notes, is more than a conversational item. Discourse in the sense that Gee suggests relates to the ways in which our language and ways of being in the world mark us socially. They offer us, as Gee puts it, an 'identity kit'. This generation of

children has discourses drawn from a rapidly changing cultural landscape. One of the key characteristics of current times is the rapidity of change. The interconnectedness of our communications systems and the speed at which they operate has increased the dissemination and extinction of cultural systems. Is this a bad thing? No, it's just the way it is. Our task as educators is not to wail and bemoan the lost days of moral certitude, but to address the learning issues of our students.

What makes this process all the more interesting for educators is that each of the iterations of popular culture creates its own distinctive discourses and language communities – specific cultural groupings, if you will. Those of us who grew up on the 1970s and 1980s learned the discourses of affirmative action, of 'Coke is it', of nuclear disarmament and the emerging vocabulary of AIDS. In terms of the specific literate skills developed, we were just discovering the power of the VCR and the home computer. The language we grew into and the literate bodies we became reflect these influences. The majority of our skills remained directed at decoding and comprehending static text. Through the 1990s to the present, the language of ethnic cleansing, hip hop, professional sports, cable television, global warming and neo-liberalism has shaped the world views of a generation. The rapid and unprecedented growth of communications technologies and electronic text, and their slide into the private space of the home, is impacting on the language and literate practices of current generations of children. Their notions of 'reading' are no longer linked to one-dimensional text. What makes the process challenging rather than merely 'interesting' is, as noted earlier, the differential distributions of social value attached to various discourses and identities and practices.

## Implications for educators

The two examples given in this chapter are male. This is intentional and reflects current popular concern regarding males and literacy. I would argue that if we take a broader view of what literacy is becoming in our society, then we should also re-assess the parameters of exclusion, including those surrounding issues of gender which will accompany this shift. Some males (not all) and some females (not all) are disadvantaged by school-based literacy practices. If, as educators, we do not incorporate the changes wrought by

multimodal literacies into our curricula, pedagogy and our ways of understanding how students learn, then we are again building exclusionary barriers.

Children becoming literate in such an environment are attuned to these interactive cueing systems just as earlier generations were to printed text and then to television. In Gee's (1991) terms, they become aspects of the 'primary discourse' and part of the cultural resources that this generation takes to school. Beyond this, particular sets and articulations of skills and behaviours become embodied and act, in the Bourdieuian sense, as the lens through which social reality is refracted and enacted and, further, contribute to social positioning and access. The implications for educators are striking and urgent. I wish to highlight a few here.

Technology and skill co-evolve. This child, sitting alone at a computer – but not alone because he is interacting with it in a way unheard of a generation ago – is learning the skills and knowledges required for his successful participation in **his** society. He is becoming attuned to a number of visual and auditory cueing systems. These are not the same cueing systems within which earlier generations of children developed their literacy skills and knowledge, and which then framed their experience and views. This single child sitting in a lounge room has much to tell us about our society, the changes overtaking us and the literate practices and language landscapes our children are developing. This change challenges our taken-for-granted notions of good mothering, parenting and home literacy value and practices. The shifting literate behaviour of children like Sam and his older companion develop and enhance particular cognitive mappings – what educators tend to refer to as 'lateral thinking' (Luke 1997). As well, the world view of this generation is developing in a polycultural and dynamic environment where identity, time, space and place have meanings substantively different from those understood in the recent past.

While teachers and librarians are trained, culturally and professionally, to value printed text (Duncan 1997), an attempt to redirect these developing literates to a purely print-based format in order to learn traditional 'basics' and relationships with text is pedagogically ill-conceived. This is the literate landscape within which young children are immersed and, as educators, we should recognise and utilise the particular skills and practices that accompany

these literacies into our curriculums and pedagogies. It is no longer appropriate, or even educationally responsible, to privilege print-based linear texts in our classrooms and to focus on campaigns of 'back-to-basics' for 'at-risk' students. Increasingly, they are but one of a range of media within which children, **particularly** those judged to be 'at-risk', need fluency. New technologies do not, of themselves, deliver utopian societies free of injustice and intolerance. Instead, issues of equity and inclusion–exclusion remain pivotal to the work of educators, particularly in 'new times' and the increasing significance of information technologies to work and social access. As William Gibson (1986) noted in *Neuromancer*: 'The future is already here, it's just that it hasn't been evenly distributed'. Kellner (1994) rightly points out that aspects of popular culture serve to mask escalating social inequality and violence; however, it remains clear that it is within this environment that our children are learning the discourses, languages and literate skills that mark them as members of various communities. As educators our responsibility clearly is to address these issues and to ensure that our thinking and practice does not serve to disadvantage individuals and groups within our classrooms.

The shift to multimodal technologies also requires us to rethink how we teach basic skills, and what these basics should be. While it is, of course, true that children need to decode and encode effectively, it is nevertheless becoming evident that many of the literacies of these children revolve around the use of interactive and multimodal technologies and texts and, further, reflect differing skills and cognitive patterns (Carrington forthcoming). The non-linear skills and ways of thinking and learning that Sam is developing will go with him when he moves away from this computer screen, and will assist him to 'read' in culturally and historically appropriate ways the multimodal sign systems emerging in the early twenty-first century.

Finally, the shift in discourses, language resources and literate skills embodied in children like Sam and his older companion present educators with a challenge, both of value systems and of pedagogy. Are we to encourage this change and embrace these skills within our classrooms? Should we recognise that the cognitive and cultural landscapes of children have already shifted fundamentally in the past decade? Should we continue to hold the line – to maintain classrooms and pedagogies that insist on the value

of print-based literacy to the exclusion of all others? These are fundamental questions and I would suggest that some of the answers lie in our understandings of discourse and popular culture, and in the adoption of a more sophisticated take on 'literacy' and 'text'.

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# part *b*

## *place, space and self identities*

# Introduction ~ *Margaret Robertson*

A developed sense of place is so fundamental to our existence as humans that we need constant reminders of the centrality of this state of being to all institutional endeavours. The child's identity is embedded in home, family, neighbourhood and community. To know these environments is to understand the child's perspective on how the world is interpreted and why behaviours occur. A simple correlation perhaps, but one that can be 'mislaid' in social settings governed by centralised decision-making. Educational curriculums can be easily dominated by national priorities, to the exclusion of localised experience and needs. Divisiveness, exclusion, alienation and lost opportunities can be among the many negatives of inadequate attention by bureaucracies to the lived experiences of young people.

We argue through the many themes of this book that effective teaching is built on the interests and motivation of children. Gaining their trust comes slowly – unless there is willingness to act in partnership with their worlds. Writing on classroom teaching a century ago, John Dewey expanded his theory of the importance of the life-world to meaning in education by arguing: 'Thinking which is not connected with increase in efficiency in action, and with learning more about ourselves and the world in which we live, has something the matter with it' (1916, p. 152). Further to this belief he states: 'The best type of teaching bears in mind the desirability of affecting this interconnection. It puts the student in the habitual attitude of finding points of contact with mutual bearings' (p. 163).

In the three chapters connected with this place theme, the authors explore a variety of interconnecting dimensions, including the significance of built and natural environments, cultural memory, personal context, risk, danger and wilderness. Their arguments seek to reassert the importance of a theory of pedagogy firmly embedded in the everyday experiences of the child,

childhood and memories of place. As such, they contribute to the recent revival of support for the wisdom of Dewey and others who adhere to an educational philosophy built on humanism – or a child-centred pedagogy.

In his exploration of children's development of a sense of community and place in different cultural settings and environments, Rod Gerber provides an overview of the diversity of issues that relate place to personal identity. He uses examples from rural and urban contexts as well as references to indigenous communities where connectedness to the natural environment appears to make overt the issue of sustainability. Through these settings responses of young people are interpreted as revelations of their 'rehearsal for departure' or separation from parents and home in spaces they can identify as their own and through which their personal identities are established. Examples illustrate how changed circumstances or different landscape contexts can limit childhood experiences. Freedom to explore alone in the wilderness as in bygone days of childhood comes under threat because of perceived parental fear of safety for their child. The implications being a loss of connectedness with spaces or place experience that can provide balance and harmony in life.

Where extreme stress exists in the lived place the United Nations Convention on the Rights of the Child in part helps to explain chidren's rights and responsibilities. This theme is followed through in Pamela Wridt's chapter on the education program that is assisting the future of street children in Brazil's north east. Funded by UNICEF, Projeto Axé is working with street children to build on their trust and confidence to take control of their own lives and work towards a better future. Forced onto the streets by poverty at home, these children largely are excluded from mainstream education. Survival requires all of their energies. At the same time, their sense of shared place is rich with strategies that can be made to work constructively for their futures if the 'right' climate of trust can be nurtured. Building on Paulo Freire's (1970) notion of mutual obligation, the program seeks to build trust, then gradually to move towards a 'pedagogy of desire' where the partnership with mentors can be developed fully.

In Chapter 6, Richard Blythe offers an enchanting glimpse of life through fantasy with Peter Pan, Kenneth Graham's characters Mole and Badger and

Lewis Carrol's *Alice,* to literary memory through the poets Wordsworth and Coleridge. From his architect's perspective Blythe seeks to evoke the space of our childhood memories and how we turned these into meaning and experience to shape our sense of self, both separate and belonging to others. He equates such adult activities as boating and the creation of gardens with the boundaries we once set around childhood spaces such as the game 'under the table' or playing around the backyard tree. They help us to recover our independence and provide a source of 'regeneration'. His case study of the Tasmanian town of Launceston is a powerful illustration of the way in which this experience has been translated into the design of the city, with its symbolism of power and institutional domination at one extremity balanced by the 'wild' landscape space of Cataract Gorge at the other. The imagery is linked to reflections to emphasise the significance of our surroundings to who we are.

Through their emphasis on cultural memory, each of these chapters is an evocative reminder of what really counts in the life of the child.

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4

# Developing a sense of community and place in different cultural settings and environments

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## Introduction

From the time that they start to move around in their local environment, children become aware of the world they are experiencing. They become conscious of different places and are keenly aware of different people who move around in their environment. If the area in which the child moves is familiar, then he or she can move without fear or concern. However, if it is an unfamiliar environment then he or she is much more cautious and fearful. Children do not know what to expect from the physical or the social environments. By being conscious in these actions, children develop powerful knowledge of their world through actual experiences. This is instrumental in them developing a sense of community and place.

## Culture, environmental experience and awareness

Culture has a substantial influence on children's conscious behaviour in the large-scale local environments in which they live. Jackson (1989, p. 2) stated

that cultures are the 'maps of meaning' through which the world is made intelligible to children and adults alike. How children behave in their local environment reflects the relationship that has developed, or is developing, between environmental activities and the rules or meanings that accompany them (Rapoport 1978). As Matthews (1995, p. 285) adds, this leads to a 'way of seeing' and to common patterns of behaviour which shape how children come into contact with everyday places. Culture does offer the skills, beliefs and attitudes that link people in society. Therefore, children operate in a culturally defined situation when they interact with their local environment.

In moving around in their worlds, children are surrounded by a large range of cultural artefacts. These include the physical and material items such as transport networks, shopping centres and recreational theme parks. Importantly, they also include rituals such as attending church, traditions such as the celebration of Easter and Christmas, and parental expectations such as walking on the footpath as opposed to the road where motor vehicles drive. As we will see later, how children use these cultural artefacts may be influenced by their gender. Put simply, different cultures produce different child–environment relationships (Matthews 1995, p. 286).

Culture, therefore, influences how children operate during spatial problem-solving experiences. Gauvain (1993, pp. 100–01) demonstrates how most of the spatial problem-solving in which children engage consists of either conveying their knowledge of a space to someone else or solving a problem that requires their understanding of large-scale space. These activities require children to be able to use skills that reflect the cultural context within which they are operating. Tools the children may use in these activities, such as maps, are cultural amplifiers (Cole & Griffin 1980); they are techniques or technological features provided by a culture that influence how people solve problems posed by their environments. Gauvain (1993, pp. 100–14) demonstrates that the cultural products which children might consider when engaging in spatial thinking include: communicative conventions for describing space, for example maps, and practices for organising knowledge about using space; material and symbolic tools for providing directions, patterns and scales; cultural practices, for example aerial views of our world; prior experience in an environment; and school-based learning experiences.

Cultural differences are also important in how children remember their everyday worlds. A range of studies demonstrate how this is so. For example, Potter and Wilson (1990), working with adolescents in Barbados, found that these young people often used the terms 'above' and 'below' to give route directions that bore no relation to elevation. They did so because moving around a small island such as Barbados did not require the use of a map. Dart and Pradham (1967) found that Nepalese children who drew a map of their route from home to school generally represented the process of them going from one place to the other, but they did not attempt to demonstrate the spatial relationship between these two key places for them. Matthews (1995), working with children in central Kenya, concluded that they produced differences in their styles for drawing a map of their local area, but that their cognitive ability was similar to that of children from Western societies. Such studies suggest that children from different cultural groups vary in the ways that they do similar geographic tasks in their different everyday worlds, even though they might use similar levels of skill development and cognitive understanding.

## Children's rights

Even with these cultural variations that have been noted above for children working with their environment, we must not lose sight of the fact that children have rights and responsibilities that have been enshrined in global proclamations such as the United Nations Convention on the Rights of the Child (CRC), which was proclaimed in 1989. Amongst other things, the CRC serves as a means for promoting children's participation in their own cultures. Hart (1997, pp. 12–13) selects those rights from the CRC which can be used to promote active participation by children. He clusters them into the following groups: freedom of expression; freedom of thought, conscience and religion; freedom of assembly; access to information; special support for disabled children; education for personal fulfilment; responsible citizenship; and play and participation in cultural and artistic life. While the views of children in the CRC are of people who are less powerful and less competent than adults, they indicate a need to offer different kinds of protection to children and to reduce forms of oppression that are exercised against them.

Such actions are very important for children all over the world. They enable children to engage in local environmental movements that involve making sense of the places in which they live and making good use of their local knowledge to solve local issues.

## Development of children's environmental knowledge and sense of place

While most of the studies referenced so far in this chapter involve children developing their own environmental knowledge largely in their local communities and cultures, they do not emphasise how this knowledge about places, people and their behaviours can be used to explain the development of a sense of place. The concept of a sense of place may be explained in geographical terms as the area within which a person routinely travels or is aware of in a detailed way (e.g. Hay 1986). Affective bonds may develop with the physical environment, and these may be termed a 'social field' containing shared meanings (Stokols & Shumaker 1981). People develop a sense of place when they reside in an environment for a period of years and they feel at home there, secure in the environment and use the environment as an anchor for their identity (Hay 1990). Even for people who are residentially mobile, there develops a sense of place attachment (Low & Altman 1992) which some researchers have adjusted into the concept of place identity. Twigger-Ross and Uzzell (1996) have identified four principles in the development of place identity: the distinctiveness of the place; continuity in a place; self esteem that is developed in one's association with a place; and self-efficacy or the belief in one's ability to carry out chosen activities in one's environment. Hay (1998, p. 9) extended this concept of the development of a sense of place by different forms of residential status in a rural town in New Zealand. He concluded that people experienced five kinds of attachment to their environment. These were: a superficial connection to place (e.g. tourists), partial connection (e.g. children), personal connection (e.g. new residents without roots in the place), ancestoral connection (residents with roots in the place), and cultural connection (indigenous residents with both roots in the place and spiritual ties, as affirmed by their culture). He also declares that a sense of place changes over people's lifetimes. Therefore, we cannot expect children to have a similar sense

of place as adults. However, we may expect that when children and adults participate together in the experience of places, they may develop a shared sense of place through different enduring relationships, e.g. as parent and child.

Another angle on the development of a sense of place is that taken by the ecological educators who believe that there is a tight link between environment and community, and between human and natural systems. They argue that sustainable human systems cannot operate in ways incompatible with natural systems. These environmental philosophers believe that the survival of humanity depends on people's understanding of how ecosystems organise themselves. David Orr (1992, p. 6) reminds us that 'landscape shapes mindscape'. Haas and Nachtigal (1998, p. 4) suggest that children's first question to strangers is often: 'Where are you from?' Adult answers to this question are often geographic ('I'm from the West') or they highlight the natural features ('I live near the coast'). Yet, argue Haas and Nachtigal, most of us are ignorant of the places that we claim so proudly because we have not developed a close understanding of our natural world. This can be overcome, they declare (p. 5), if schools develop a healthy respect for the physical and social communities within which they operate, and if they teach children to be contributing citizens who practice democracy.

## Building a sense of community

Children can have a psychological sense of community in a variety of contexts. These may include a sense about a geographically defined area such as their neighbourhood, or a sense of an aspatial or extended space community such as a church, a job, a recreational group or a certain lifestyle (Lyon 1987). The former sense is a community of place, whereas the latter sense is a community of interest (Cochrun 1994). Nasar and Julian (1995) explored the sense of community in differing neighbourhoods using a Likert Scale. They concluded that people's sense of community can be measured by asking them about the people who live around them in their local area, the services or help that is available there, friends who frequent this area, people who can be trusted and being able to participate in the activities in the neighbourhood. Although they worked with adults, I see no reason this exercise could not be conducted with children to develop their sense of community.

## Place and children's identity

We often talk of children identifying with particular places in their local area. These may be places that they frequent or places that have special meaning to them. These special places are 'found or constructed space that children claim as their own, separate and apart from their parents' home' (Sobel 1998, p. 141). Finding a special place is a rehearsal for departure. Sobel claims that as children move out of the sphere of their parents' influence, they create homes away from home in order to practice independence. Many young children talk about living alone in the woods, finding food to eat in the forest, constructing their own shelter there, and making weapons to protect themselves. These children speak of longing for self-sufficiency and independence as a part of the developmental move out into the wider community.

The development of children's identity is a social process rather than something that occurs within individual children. This requires an understanding of oneself and an understanding of the social world. These are constructed in a reciprocal manner, influencing and constraining each other. Hart (1997, pp. 28–29) states that the critical periods for children's identity development are middle childhood and adolescence. He notes that in their middle childhood years young people are enthusiastic, outward looking and industrious. In these years the children can become frustrated because their community does not offer them sufficient support. In order to become valued, these children need to become involved in authentic community projects, and to do so under adequate supervision. By engaging in meaningful tasks with peers and adults, these children feel valued in their community and they will associate with it.

In adolescence, these children can become more inward looking, philosophical and keen to test the identity constructions that they have made for themselves in their earlier years. They experiment with different identities and attempt to consolidate different social roles. Within their community they focus on different symbols that typify youth cultures, e.g. language, dress, music and different rituals. Adults should not attempt to dictate to adolescents what their identity is in these cultures, but should encourage them to participate and to develop their own identity.

The structure of different social and cultural settings in which the children live plays a vital role in their development of a sense of competence. For example, in places such as school, self restraint, if exaggerated, can lead to a lack of desire to learn. However, at the other extreme, in places based entirely on free play, children can become confused. The challenge is for children to feel as though their participation in social and environmental activities is wanted and warmly encouraged.

The extent to which children's identity and their sense of place is interrelated in different cultural settings is the subject of discussion later in this chapter. However, at this point, it is claimed that in general terms, it is a relationship that can be supported.

## Wild places and gender differences

Children develop understandings about their environment quite different from those developed by their adults. As Nabham and Trimble (1994) declare:

> Whenever we've gone out to play in the rough-and-tumble lands beyond the metropolitan grid, my children have taught me things that I never would have learned if we had hung around the house. It's true, the children might have been able to offer me insights about the world if we had stayed at home, but my guess is that I would have been less likely to notice and embrace them there. That's because too often I've assumed that the kids and I agree on all there is to know about the place where we routinely eat, wash, and sleep, as if they and I occupy and make sense out of the same familiar world (p. 3).

These variations occur because children and adults obtain different perceptions from investigating the same patch of environment. However, something also happens when children are allowed to roam freely in an environment, rather than being taken there by their parents or other adults. They develop a sense for the geography of wild places – the personal interaction with natural environments, as opposed to cultural and human environments. This form of experience of environment by children is certainly an empowering one, for it involves the children doing all sorts of things in these areas, including: noticing different landscape features; observing

wildlife specimens operating in their natural settings; feeling how the wind blows on their faces when standing at the top of a cliff; observing how the light changes at different times in the day; touching the different surfaces of rocks; and feeling the heat of the sandy soil in the middle of the day. Collectively, these experiences promote different attitudes to open spaces, massive sparsely settled barren areas, and feelings of solitude. Such experiences contrast so vividly with those of the sedentary urban lifestyle in which many Western children live in their normal lives. They give balance to the urbanised lives that most of these children live.

Importantly, adults and parents in our postmodern society have become very protective of their children, as our society promotes safety as a key marketing tool for many consumer goods. However, this over-protective approach to interacting with our environment has its down side as well. A direct result of such over protection is that fewer children now walk around their local environments to find out what it contains in terms of social and environmental features. Even fewer children are permitted to wander unsupervised in, say, a national park, and even fewer are permitted to explore sites of risk, i.e. places where people could fall or injure themselves. This is not to say that some of these activities have some danger or risk associated with them. But, it is a different attempt by modern parents to restrict to a great extent the environmental curiosity and outdoor joy of their children. The fact that this occurs in postmodern Western society does not make it right. It might be custom and practice today. However, it should be replaced by a new enthusiasm for wild places. How else will our children come to appreciate that there is much more to our world than cities and highways, and more cities and highways?

What is even more worrying is the trend that a strong gender approach should be applied to the experience of natural environments and wild places. This is a trend that certainly dominates postmodern Western societies. In Nabham and Trimble's (1994) words:

> Genetics and culture interweave as each gender comes to terms with the environment. Boys may start out with a small genetic edge in visual sensitivity. Girls generally acquire language more quickly, but boys are meanwhile practising

> and honing their manual skills, physically manipulating their world far more than girls. Most boys catch up to girls verbally, but once children reach adolescence, American girls typically never catch up to boys in spatial competence ... Remember, though, that we build all our cultural biases into experimental design: in Eskimo culture, both girls and boys accompany their fathers on extensive hunting trips, and both sexes perform equally well on spatial tests (p. 71).

Other evidence, such as that by Saegert and Hart (1978) and Matthews (1992), indicates that the movement of girls in their local and wider environments is constrained by the social mores and values of their parents, teachers and peers. They move around less frequently in their own environments than boys do, and they are actively encouraged to develop behaviours around their homes. What is being encouraged in this chapter is that boys and girls be permitted to explore their local world at a moderate distance from their parents' loving eyes. The values for nature and environment that children develop through these explorations stay with them for their lives, and so for the future of our world we must ensure that values that encourage sustainability are encouraged enthusiastically in children's lives.

## Different settings and cultural contexts

The development of a sense of community and place occurs in different contexts and in different cultures. As evidence of these claims, in this section the development of a sense of place and community will be demonstrated in three contexts: rural areas, urban areas and in wild places. Within these contexts, examples from different cultural groups will be used to demonstrate cultural variations.

In **rural** areas, the sense of place and community has been developing throughout the lives of the children. Rural children bring to school continuing family and community lives, which construct the school experience in a range of ways. Rural citizens have described their communities as 'a place of and for families' (Fitchen 1991), meaning that rural areas are places containing a healthy family atmosphere and a good place to raise children. Beach (1996, p. 8) demonstrated how rural communities as a whole play important roles in

children's development. Using Bronfenbrenner's concept of a mesosystem; that is, the interrelationship between two or more settings, e.g. home, school and community, in which the child participates, educators can demonstrate how these are powerful variables affecting the child's development. As well, the development of a sense of place in rural communities is especially relevant from the perspective of place attachment. Beach (1996, p. 8) declares that rural children may well have a stronger sense of place rooted in direct experience of the natural environment around them. In fact, some researchers maintain that only rural children are able to experience the conditions essential to developing an environmental ethic necessary for the world's well being (e.g. Chawla & Hart 1995).

Theobald and Nachtigal (1995) suggest that the traditional linkage between rural schools and their communities has been destroyed by a national approach to education. This is a means for eroding the quality of life in both rural and urban areas. They propose that rural communities can regain some of their distinctiveness if a local focus is developed in the education of the children and the development of a sense of community is promoted. Cilka Zagar (1990), in the provocative book *Growing up in Walgett*, presented a set of 'simple honest statements' from Aboriginal children about their lives in a remote town in western New South Wales. From these stories by the children, it is possible to obtain a feeling about how they understood the environment and community in which they live and its impact on them.

*Andrew*

> Things I like in Walgett is the recreation for children and the sport for the town. And it's my home where I was born and bred. The things I don't like is all the drunks around the streets ... Alcoholism is a big problem in Walgett. Also, the housing is another problem. People have been living in these houses for at least ten to twenty-one years.

*Muriel*

> Walgett is a boring place. There's nothing to do but drink and steal. If they had somewhere to go or something to do, kids would behave and the Youth and Community Service are supposed to help find jobs. They aren't even trying. To tell you the truth Walgett is a terrible place.

*Karen*

> I find Walgett unpleasant to live in, but when I go away I miss it. I don't know why. I didn't notice it until I was in high school, but there is prejudice.

*Virginia*

> The town isn't much to look at but some of the people here are well-respected for what they have done for the town and some of them like to make the place miserable for other people. People then get the wrong impression of the town.

From these and other statements in the book, it is easy to conclude that the children do not see Walgett as a great place in which to live, but they do have a sense of attachment to it. They have some linkage to the town in either a positive or a negative sense. This is their home, after all.

The final example of children's sense of environment and place is taken from Matthews' (1995) study of Kenyan children's environmental experience. Some of his findings reflect the Kenyan children's experience of their environment. The nature of play for the children demonstrated clear gender differences: boys were more adventurous and exhibited boisterous outdoor pastimes, whereas girls visited a friend's house or went to play on the school field. These children knew their place in their society and their childhood was highly structured, e.g. play is subsumed by domestic responsibilities. Play is a relatively scarce resource being controlled by societally imposed barriers and occurring in private spaces.

How does this situation differ in **urban** areas? Illustrative of this are sample studies from the Middle East and New Zealand. In his study of children's use of the street as a playground, Abu-Ghazzeh (1998) seeks to demonstrate that streets are universals in urban environments, and how children use them is an important part of children's understanding of their urban environment. The argument used here is that the street is so important for a child's development, it should be a place to play. As a result of his investigation of children's use of streets in Jordan as areas for play, Abu-Ghazzeh concludes that streets and public places are critical elements in helping children achieve a sense of importance within the urban society. Streets need to be safe for

children and adults. They must function as part of the symbolic environment, optimising the community's sense of place and expressing collective territoriality (Abu-Ghazzeh 1998, p. 812). In places such as the streets of cities in developing countries, play is here to stay. Children use their streets nearby to their living areas as their important urban environment. Play in these streets is a form of humanising these urban areas, in spite of the risks that exist. The need to establish a balance between children and motor vehicles is important in these streets. Equally important is the need to allow children to develop their understanding of their urban environment through experience, assessment and decision-making. The need to declare for children that they are essential to humanising the streets of urban areas is upon us in different places around the world.

An extension of this thinking about children's experience in urban environments occurs through the work that Hay (1998) has done in New Zealand. Here, the idea of people of different racial groups living in an urban area may be considered in the sense of place that these people develop through living in their towns. This sense of place includes feelings of security, belonging and stability. Hay concluded that the development of generic place dependence might be achieved in different racial groups through the development of their personal sense of place. He also concluded that sequential stages of development of a sense of place were most evident among those who were raised in the area and who spent most of their lives there. Hart (1997) provides many examples of how children in different developing and developed countries work actively to improve their worlds and so develop a more healthy view of their urban area.

Finally, how children develop a sense of wild places becomes an important example of the way in which the natural environment in different cultural groups is understood as a place for people to use. Interesting examples can be developed of indigenous children on different continents and their use of their natural environments to develop a close understanding of how people interact with their environments in a sustainable way. In some cases, this interaction explains how children develop an understanding of how resources should be used in their local environments, and how people should use these resources wisely in their lives. In other cases, it involves direct comparisons

between different cultural or racial groups in their willingness to allow their children to roam in the natural environment and to understand ways to make the most of its resources. As Nabham and Trimble (1994) state:

> Peublo Indian children learn about connections to the earth through virtually every experience in their culture. Beginning at about three years of age, Peublo boys dance in their village plazas as animals, transforming themselves into the spirits of antelope and deer. ... A little later, the girls may dance as parrots or buffalo mothers. The words of the songs, the symbols painted on the costumes, and the choreographed gestures all connect the dancers with the earth: corn, clouds, the sun, rain, lighting, thunder, rainbows, evergreen trees. Life, growth, harvest.
>
> Though I have watched Peublo dances for many years, I can never share completely the Peublo faith, even if it was my hope. I remain an outsider. But I feel reassured and renewed by these acts of ritual attention to the earth – to seasonal cycles and sacred mountains and nourishing rains. Peublo dances remind me to pay attention to my home landscape, to remember its power and the equality of all life (pp. 170–71).

## A pedagogy of place

It is not enough to talk about the development of a sense of place and community by children in different parts of the world. What is vital is to be able to act intentionally to enhance children's understanding of their environment and community, and to promote their active participation in them. Theobald and Nachtigal (1995, p. 9) introduce the idea of a pedagogy of place in the following way:

Focusing on place, using the community as a curricular lens, not only contributes to re-creating community, but it will also help realise true school renewal by making learning more experiential and therefore more powerful, and also by providing youth with an ability to understand who they are and how they might be in the world. The more students understand their community and its environs – its social structure, its economy, its history, its music, its ecology – the more they become invested in that community.

How this pedagogy of place is developed with children will vary across cultural groups. Hart (1997, pp. 161–91) demonstrates a variety of methods that educators may use to promote a sense of place in children. They include drawings and collages; mapping and modelling; interviewing and surveys; media; and communication through performances. Collectively, these teaching methods offer ideas for educators to promote a sense of space and community in children in different social and cultural groups. The extent to which these methods are used around the world depend on a number of factors that include the communications technologies that are available to children in different cultures; the extent to which the children are trained to use different types of media; the number of trained educators who are available to harness the creative energies of the children in environmental and community learning experiences; the development by children of their commitment to their environments and communities; and the capacity of the children to realise that they possess a sense of place and community.

Arenas (1999, p. 1) extends the concept of a pedagogy of place as a means of countering the current thrust to a global focus. He argues that:

> ... a pedagogy of place argues that children cannot comprehend, much less feel a commitment towards issues and problems in distant places until they have a well-grounded knowledge of their own place. The place that one inhabits can teach about the interdependency of the social and natural systems. Understanding the pedagogy of place is understanding the purpose of education: the development of competence, care, and appreciation in political, environmental and aesthetic areas.

Through examples of two public secondary schools in poor locations in Colombia, he demonstrated that these schools could not only prepare their students for the public examinations, but also they could transmit competence, care and appreciation in the direction of political, aesthetic and environmental awareness. These schools were instrumental in the development of a sense of place and community for their students.

## Children's participation

In conclusion then, it is important to stress that children will not develop a sense of place and community unless they are active participants in their local environments. As Hart (1997, p. 3) states: 'the environment becomes the concern for all communities'. Children make conscious use of their environments, and as long as they begin to reflect on this usage then they will begin to develop a sense of place. Through interacting with friends, relatives and other people in their local area, children will come to realise that events happen in their local area in certain ways, some of which are good for the environment and some of which are not. Their affinities for natural or built environments will emerge through their active participation in these environments and communities. Just what this means will differ according to different cultural groups in different environments around the world. No one is making a judgment about which forms of participation are better than others. That would be presumptuous of any observer or researcher or educator. What is important is to have the children participate actively, and to have them think about what their experiences mean to themselves and the people around them. Then, whatever sense of place and community they develop will be useful to the future of their world.

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5

# Educating Brazilian street children

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## Introduction

This chapter examines the everyday lives of street children in Brazil and the educational programs designed to promote their learning, development and citizenship. In particular, it describes the lives of street children in Salvador, and a street education program I had the pleasure of visiting and learning about, Projeto Axé, which has successfully implemented the new international paradigm of children's rights. Projeto Axé is considered among international agencies such as the United Nations International Children's Education Fund (UNICEF) to be one of the most successful educational interventions for street children in Brazil. Projeto Axé's success comes from a deep understanding of the daily lives of street children. This intimate knowledge stems from years of research and work with the children served by the program. Projeto Axé incorporates its knowledge of the daily lives of street children with that of its pedagogy and educational philosophies, creating a rich geographic, cultural and philosophical context for child development.

## Background

Brazil has one of the world's ten largest economies, but only a small fragment of its society benefits from this wealth. The World Bank (1997) states that

Brazil has one of the largest income disparities among more than sixty countries for which data are available. The richest 20 per cent of the population has power over 60 per cent of Brazil's total income, while the poorest 40 per cent of the population have access to 7 per cent of Brazil's total income (Population Reference Bureau, USA 1998). Young people growing up in Brazil are significantly impacted by the country's contrasts in wealth.

Of every 1,000 live births, sixty Brazilian children do not survive to the age of five (Population Reference Bureau, USA 1998). Much of this can be attributed to poverty and the unsanitary conditions in which children live. Only 73 per cent of Brazil's population have access to safe water, and 44 per cent has adequate sanitation (Population Reference Bureau, USA 1998). Some estimates suggest that 40 per cent of children under fourteen years of age survive in households whose total monthly income is around US $65 (Instituto Brasileiro de Geografia e Estatistíca 1997). These figures mask tremendous geographic variations within Brazil. For example, adequate infrastructure and economic opportunities are typically worse in rural areas and in the *favelas*, or squatter settlements, surrounding Brazil's urban centers.

Largely in response to poor economic and living conditions, many children turn to the streets to make a living. Some estimates suggest that, of Brazil's 163 million inhabitants (1998 estimate), 10 million children and youth live and work in the streets (Population Reference Bureau, USA 1998). They include orphans, children separated from their families and others living with their homeless families. Once on the streets, children typically become a part of the informal economy, washing cars, peddling for money and engaging in prostitution and drug trafficking. The street becomes the context within which children learn and develop. Many activities typically associated with private space become part of the public landscape.

The process in which children leave home for the streets is complex – the factors contributing to the phenomenon are multifaceted. Equally daunting is the task of working with and educating street children. Historically, many local, national and international organisations have created programs to provide adequate housing, health care and education for street children. These programs previously have approached street children in a charitable

and correctional manner, by designing social institutions such as orphanages to assist in the rehabilitation of the abandoned minor. However, a new paradigm for working with street children emerged in the 1990s, upon Brazil's ratification of the United Nations Convention on the Rights of the Child. This new paradigm represented a fundamental shift in ideology toward childhood; one in which children were given agency as active subjects in the creation of their knowledge, their desires and their human rights.

## *Defining and counting street children*

Many people who study the phenomenon of street children in Brazil and in other parts of the world are confronted with the problematic issue of how to define and count them. For example, according to a street educator at the time Projeto Axé was founded in 1990, government officials estimated that, of the 22 million people living in Salvador, 1 million were street children. Considering that roughly 30 per cent of Brazil's overall population is made up of children under the age of fifteen, this figure seems highly speculative and grossly erroneous (Population Reference Bureau, USA 2000). Over-estimating the number of street children is a common phenomenon, particularly among corrupt local officials who use conflated figures to warrant more funding from the federal government. In addition, alluding to large numbers of street children enables people to deem the situation as being fatalistic, and leading them to believe that nothing can be done (Hecht 1998). More poignantly, it is extremely difficult to gather accurate data about the population of street children.

Street children are highly mobile, and typically roam from neighbourhood to neighbourhood to earn money, acquire food and to avoid dangerous situations. Street children shift around, sleeping in different places such as abandoned cars or houses, under bank awnings, or near beachside bars, so they can watch television (Hecht 1998). Street children also rely on shop owners, institutions and restaurants to give them food. They temporarily live in different settings around the city – with an aunt, a grandmother, a neighbour or a stranger.

This shifting around the neighbourhood to find food and to sleep makes it difficult to identify street children. Consequently, the use of observation

techniques to count children on the streets is laden with methodological difficulties. As a result, many statistics about the number of street children in a given city are typically estimates, creating many problems for those seeking funding to provide educational and service provisions for street children.

### *Factors contributing to the phenomenon of street children*

There are many reasons children end up on the streets in cities throughout Brazil, stemming from the social and physical realities of living in a third world country. As with any developing country, there are dramatic contrasts in wealth and access to resources. Many children who end up on the streets come from neighbourhoods that have poor infrastructure support for running water, paved streets and adequate housing. These *favelas*, or poorly constructed squatter settlements, are built on government-owned land throughout the city. Once a family has lived on a parcel of land for eight years, it is considered the owner of the property. In some cases, the houses in the *favelas* are not complete in their construction, reflecting a family's capability to purchase or acquire building materials. The houses are often so cramped that one can find a family of six or seven living in a space no larger than a standard Western bedroom (Hecht 1998).

By contrast, there are also neighbourhoods in cities such as Salvador where infrastructure support and housing are excellent, catering to upper-middle class and elite populations. Children see these differences; they live these economic contrasts. As a result, many are lured to environments that offer more aesthetically appealing qualities and amenities, not only to peddle for money, but also to live. As one educator of Projeto Axé described it: 'Children come to these neighbourhoods (referring to the more wealthy districts of Salvador) because they think it's clean; there are beautiful people; the houses are painted…When they have to sleep on the streets, the conditions are better than in their own house'. This suggests that children prefer the streets to the *favelas* because the streets are considered safer.

In addition to the economic and physical qualities of the environment that attract children to the streets, there are also many social factors that contribute to the phenomenon. Of primary consideration is the relationship between the child and caretakers within the family unit. Many of the caretakers

simply cannot afford to feed and care for their children. This is largely due to family composition, which generally includes a large number of children (four or more children) living in the same household (Hecht 1998). It is not atypical for parents to force their children to leave home because they cannot care for them. Often, many street children mention physical abuse as a primary reason for leaving the family home (Hecht 1998). Because of the perceived importance of female domestic labour, street children tend to be males, while females remain in the home, attending to household chores and child rearing.

Although gender roles, caretaker–child relations and family composition play major roles in the process of a child leaving the family home for the streets, it is important to note that the child does make decisions for himself or herself regarding lifestyle. For example, one street educator in Salvador explained the situation of a boy with whom he had worked, stating, 'He left home because his parents wanted him to go to school. He didn't want to go to school so his parents told him that he would have to leave the house'. The degree to which a child makes decisions such as these is a product of both his or her own desires and the societal context.

Street children often are contributors to the family income. According to Hecht (1998, p. 193), some principal ways of earning a living are:

- hawking items that require little capital, such as chewing gum
- being apprenticed to an auto mechanic, furniture maker or working-class adult
- working as a guide for visitors
- doing odd jobs such as washing store windows or carrying goods around at the market
- helping their parents in their work
- begging
- scavenging for items that can be sold, such as glass bottles, cans and cardboard
- petty theft.

By engaging in these activities, the street is viewed by children as a resource for nurturing the home (Hecht 1998).

There are many other factors that contribute to the phenomenon of street children beyond the scope of this chapter. Why and how children end up on the street is a product of both local and global economic realities, interconnected with an individual's social, psychological and environmental context. A child's personal desires and his or her relationship with the family are significant contributors to the phenomenon. More importantly, it is the context within which these relations take place that make the presence of street children in Brazilian society seemingly inevitable. While an individual's desires and family life can be considered **push factors** in a child's decision to leave for the streets, there are significant **pull factors** that can be attributed to this decision as well. Serious economic divisions within Brazilian society and the impoverished conditions of the poor are of primary consideration.

## *Evolving perspectives on interventions for street children*

Government and non-governmental institutions and agencies in Brazil have struggled with the phenomenon of street children for many decades. Since the 1920s, interventions towards street children have evolved, representing different ideologies toward childhood that reflect changes in Brazil's political and social history. This evolution can be characterised by interventions that focused on the correction and control of delinquency, to those programs centred on providing social assistance to needy children and, most recently, to agencies that consider the rights of children as citizens (Table 1). Within this process, definitions for children who live on the street changed as well. These definitions and terms ranged from 'street Arab', 'street urchin', 'runaway', 'scamp', 'scoundrel', to 'abandoned child', 'adolescent', 'minor' (or 'lesser') and, finally, *meniños de rua*, or 'street children' (Hecht 1998).

Klees and Rizzini (2000) provide a detailed account of Brazil's political and social policy toward street children. In their work, Klees and Rizzini (2000) characterise the evolution of interventions for street children in much the same way as those described in Table 1. They suggest that, until the 1970s, many of the assistance programs for street children adopted a repressive, penal approach to abandoned and delinquent children, one in which children were viewed as threats to social order (Klees & Rizzini 2000). Correctional facilities and institutions served as holding tanks for children and youth who

*table 1* ***Social policies and approaches toward impoverished children in Brazil***

| Period/ Approach | Societal perceptions | State policy | Governmental model of intervention | Non-governmental practices |
|---|---|---|---|---|
| – 1920 Charitable and Correctional | Street children were abandoned because they were born out of wedlock. | There were no State welfare institutions. There were some laws regarding child labour and criminal acts by minors. | Correctional mandate – offenders were put into common prisons. | Charity – there were orphanages and reformatories. |
| 1920–1970 Philanthropic | Street children were considered to be abandoned minors. Children were in 'irregular' situations due to parental failure. | The Minors Code was adopted, creating a National Institution for the Welfare of Minors. | Closed institutions and preventive or rehabilitative programs based on medical or legal models. | Philanthropic – assistance and social rehabilitation through manual work. |
| 1970–1985 Alternative and educational | Street children were considered marginalised and impoverished by economic and social factors. | New Minors Code and new National Institutions and Policy for the Welfare of Minors were adopted. | Poor children considered to be minors were placed within a state institution. | Street education – based on the pedagogy of popular education with drop-in centres located throughout cities. |
| 1985–present Citizenship | Street children treated as subjects of their own reality. Street children have been excluded from the benefits of socio-political development. | Child and adolescent state – Councils of Rights of the Children at the federal, state and municipal levels. | Implementation of social politics, welfare policies and special services. | Children's rights movement – based on the mobilisation and organisation of children as social actors and political subjects. |

*Source: Rodrigues dos Santos 1999.*

were 'swept up' in police raids because they were congregating in public places for recreational, informal commercial and criminal activities. Whether they were on the streets to make a living or to commit a crime was irrelevant to policy makers. Instead, policy criminalised the activities of young people on the streets.

Over time, non-government agencies, activists and the public in general became more aware of the corruption and violence associated with these correctional facilities and penal policies. According to Klees and Rizzini (2000), proponents of new, alternative views of street children stressed that it was not the children, but rather the conditions within which they were forced to live that should be viewed as 'irregular'. Social activists mobilised and consolidated their efforts by 1985, when the National Movement for Street Boys and Street Girls was formed. Heightened media coverage of the First National Meeting of Street Boys and Street Girls in Brasilia in 1986 captured the attention of the Brazilian population in a way not witnessed in previous decades (Hecht 1998). In particular, the ability of street children to articulate their concerns and demands set forth a shift in ideology toward children in general. By the late 1980s and early 1990s, the new Brazilian Constitution had adopted articles from the United Nations Convention on the Rights of the Child.

Since the adoption of this Convention, many non-government agencies and community leaders have re-examined the methods for reaching street children in order to provide them with basic social services and education as outlined in the Brazilian Constitution. Following is a portrait of Projeto Axé, an exemplary street education program in Salvador, Bahia, in the north east of Brazil.

## The history of Projeto Axé and its general principles

Projeto Axé is considered among UNICEF officials, educators and activists as a particularly effective intervention in the lives of street children, in part because it exemplifies the new paradigm adopted by the United Nations Convention on the Rights of the Child. Projeto Axé was born in June of 1990 in Salvador, Bahia, with the initial support of *Terra Nuova*, an Italian

non-governmental organisation, and the National Movement for Street Children in Brazil. In the Candomblé region of Bahia, the word *axé* means 'the beginning, strength or energy that allows everything in the world to have a "coming to be" '. The name was specifically chosen to represent Projeto Axé's commitment to an educational project rooted in the children's cultural heritage. According to Cesare de Florio La Rocca, the founder of Axé:

> Projeto Axé is an educational project for young outcasts, the sons and daughters of the streets, with a clear political and pedagogical sphere of action. It is based on professionalism and quality; the best education for the poorest people. Projeto Axé's mission as an institution is based on the principles of human rights, scientific knowledge and the active participation of its beneficiaries. These principles are applied while respecting the values and cultural practice of the target population. By these actions, which are at once political, social and pedagogical, Projeto Axé benefits the most vulnerable group within the poorest sector of the population: the children and adolescents who have been deprived of their rights, their protection, and the development of their human, biological, psychological, social, cultural and spiritual potential. (Projeto Axé Handouts 2000).

Since its inception, Projeto Axé continues to evolve and constantly reflect upon its past experiences and potential opportunities to help street children. This process involves a close integration of theory and practice, enabling the program to be self-critical and thereby avoiding the pitfalls associated with institutionalisation and complacency.

## *Surveying and mapping street children in Salvador*

The most impressive quality of Projeto Axé is the manner in which the organisation has developed a comprehensive portrait of street children in Salvador. For example, before the project began, a team of researchers and street educators conducted in-depth studies regarding the social, economic and geographic push–pull factors that drive children into the streets of Salvador. This research entailed understanding the relationships between the child and his or her social support systems, such as family and school, and the

role of street-child culture in Salvador. In addition, Projeto Axé counted and mapped the presence of street children in Salvador.

Projeto Axé relied upon detailed interviews with children and family members and observation techniques to compile a comprehensive census of street children. In addition, these methods allowed Projeto Axé to create maps for street educators, illustrating the origin and destination points of street children and their geographic mobility. Projeto Axé counted roughly 12,000 children on the streets of Salvador in 1990, and found that a majority of them were boys (85.9 per cent males compared to 14.1 per cent females) (Projeto Axé 1993). Almost 50 per cent of the children were between the ages of ten and fifteen, roughly 30 per cent were between the ages of fifteen and seventeen, 20 per cent were between the ages of five and ten, and almost 4 per cent were under the age of five (Projeto Axé 1993).

Of those 12,000 (recall that the city government in Salvador estimated the population to be 1 million), approximately 1,600 children were classified as **children of the street**; that is children living and working independently of their families. As described earlier in the chapter, street children in Salvador have a tremendous degree of geographic mobility that varies by day and night, by economic and residential segregation, and by a child's individual circumstances.

## *Pedagogical flirting: The street education process*

These initial survey results were then incorporated into the design of Projeto Axé's educational program and helped to articulate the manner in which educators facilitate the learning and development of these unique children. For example, educators work on both the streets and in classroom settings with the street children. In order to gain the trust of the child and pique their interest in attending Projeto Axé programs, educators must work directly with the children on the streets. For a period of 3–4 months, and often up to one year, educators develop rapport with the child, learn what social and physical factors resulted in the child turning to the streets for a living, assess the child's emotional and scholastic needs, and gain access to family members. Axé refers to this initial meeting and information gathering process as **pedagogical flirting**.

Street educators are concentrated in areas where many children were observed during the mapping project. In order to facilitate its work with the children, Projeto Axé acquired an abandoned bus and painted it with bright clowns and artistic cartoons to attract the children. The bus also provides educators with resources such as books, videos and basic health provisions to help work with the children. The bus travels from neighbourhood to neighbourhood, and is now recognised by the children as the Axé bus. During the period of **pedagogical flirting**, street educators spend an enormous time counselling the children, becoming a trusted friend and engaging them in educational activities such as drawing, reading and learning about Projeto Axé.

### *From the streets: The pedagogy of desire*

After children proceed through **pedagogical flirting**, the street education process becomes the pedagogy of desire. The basic premise behind the **pedagogy of desire** is that the child, by means of his or her own leadership and desires, must choose to leave the streets. The child is then given the opportunity to attend Axé under certain conditions. These conditions vary with the circumstance of the child, but in general include his or her agreement to attend public school and Axé on a part-time basis, and his or her willingness to make some agreement with family members to return home.

Once a child agrees to participate in the program and can meet the aforementioned conditions, the child becomes part of the more structured Axé curriculum. Projeto Axé works in conjunction with the public schools to provide children with a comprehensive education. The public school curriculum focuses on the fundamentals such as math, reading, geography, history and natural science. Projeto Axé offers a compatible curriculum that infuses the fundamentals into a more artistic, creative program that draws heavily from cultural studies, art, dance, music, environment and health, ethics and sexuality.

There are educational centres dispersed throughout the city of Salvador, each representing a different theme fundamental to Projeto Axé. For example, there are schools that act as hubs for an art and paper-recycling program in which children learn about the environment and how to produce quality products from recycled resources. Another example is a cultural, music and

*table 2* ***Projeto Axé programs and services***

| | |
|---|---|
| **Educational enterprises**<br>The creation of new habits and behaviour patterns. Valuation of self-esteem. Valuation of the individual and the group. | **OPA – Art Paper-recycling Workshop**<br>Recycling the paper and recycling one's role<br>**STAMPAXÉ**<br>Print forms and colours; creation of the individual and collective creations<br>**LOCKSMITH**<br>Forge the metal and forge your own character<br>**MODAXÉ**<br>Boys and girls parade dreams and desires, in a never-ending parade of models and colours |
| ***Projeto Ere*** **(Culture and Art)**<br>(In partnership with Ilê Aiyê, Myzenza, GCAP, Escola de Circo Picolino, Grupo Apache, and Balé Teatro Castro Alves) | **Afro band**<br>Harmony of sounds and intelligences<br>***Capoeira***<br>Dialogue of bodies<br>***Theatre***<br>Shadows of street life, spotlights and personal victory on stage and in life<br>***Dance***<br>Dance steps and life steps; learning to dance and learning to live<br>***Circus art***<br>From the street into the arena; from the arena into life<br>***Ballet***<br>Classical and modern, nothing is impossible |
| **Defending of rights – street attorney** | Guarantee the physical and psychological integrity of youth, without ever interfering with law enforcement |
| **Family help** | Demolish the myth that street children do not have family. Find a family reference and develop together an educational partnership. |
| **Housing project** | Going back home, finding a room, building a house of one's own |
| **Health education centre** | Educational process based on the principle, 'health is good'. Learn how to have good health and how to maintain it. |
| **Job-finding system** | Public and private companies provide space for Axé teenagers, becoming educational enterprises themselves. |
| **Technical backup and job training** | Learning together, studying and living. Teaching becomes one with learning, a web of solidarity and sharing. Nobody owns knowledge, wisdom is constructed by all. |

*Source: Projeto Axé 1999*

dance centre where children learn, among other things, about *Capoeira*, an Afro-Brazilian dance descending from the social and geographic history of their ancestors. Remaining true to their mission and the pedagogy of desire, the children choose the program in which they wish to participate. Table 2 illustrates an overview of the variety of programs Projeto Axé has instituted. Of noted importance is the project's inclusion of health, legal and other social services for street children and their families, in addition to the educational enterprises they provide.

## *The training and identity of street educators*

Street educators are crucial to the success of Projeto Axé's program. In keeping with the philosophy that the poorest children deserve the best resources possible, Axé employs a cadre of educators and professionals that are highly skilled and competitively screened. Most of the educators have master or doctoral degrees, and Axé does not accept volunteers as part of its workforce. In addition, street educators are expected to attend training sessions on a continuing basis, to reflect upon their work, and to help develop new, innovative methods for working with children. Acclaimed singers, dancers and artists are invited to work with the children on special projects throughout the year. Many famous Brazilian and US artists have contributed to the Projeto Axé program over the years.

## *Changing the image of street children*

The basic premise of Projeto Axé is to integrate the school, family and community into the educational histories of street children. Each year Projeto Axé holds a community festival to counteract negative societal images of street children. This community-wide fashion, ballet and artistic theatrical production represents the culmination of the children's work with Axé. Famous celebrities attend and participate in the production that draws local Salvadorians to the free public event. Salvador's inhabitants are then able to view the accomplishments of the street children in a positive capacity, and overall the program helps to rebuild or transform the relationship between street children and their identity with the larger society.

## A street child's place in the world

In order to explore the manner in which these unique children come to know and understand their place in the world, this chapter examined the daily lives of street children living in Brazil. Because of a myriad of social, geographic and economic factors, the polemic of street children is particularly intense in third world countries such as Brazil. Once children find their place in the street they experience first hand a range of environments and diverse social settings in predominantly public spaces. Through their interactions with store owners, other street children, the police, street educators and institutions, street children are exposed to societal expectations and perceptions about their lives as *meniños de rua*. In the context of public space and scrutiny, their everyday ways of knowing can be characterised by knowledge of how to negotiate finding food, a place to sleep, avoiding police or dangerous situations, and methods for acquiring money. More recently, street children have come to realise their potential as citizens who are entitled to rights, freedoms and privileges.

Historically, Brazil has grappled with how to intervene and improve the livelihood of street children. Projeto Axé's work with street children is one example of how our understanding of this unique population has changed over time. Although many advances have been made and social or political battles fought, there is still much to learn from the children of the streets in Brazil and throughout the world. Recognising the potential of these children has created dramatic changes within the street-child culture. With the help of programs such as Axé, street children now view themselves as citizens, or active subjects, in the creation of their knowledge, their desires and their human rights. With this ideological shift toward childhood comes the possibility for dialogue among children and adults, one that is ripe with potential for social change.

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6

# Architecture, body and wilderness

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*It was Jane's invention to raise the sheet over her mother's head and her own, thus making a tent and in the awful darkness to whisper:*

*'What do you see now?'*

*'I don't think I see anything tonight,' says Wendy...*

*'Yes, you do,' says Jane, 'you see when you were a little girl.' (Barrie 1994, p. 235)*

How is it that the prospect of remembering one's childhood might make the darkness of an imaginary bed-tent 'awful'? James Mathew Barrie's teasingly melancholic account of Peter Pan's refusal to let go of childhood has captured the imagination of a diverse audience for several generations. Peter Pan's fear of losing his childhood stirs within us dual emotions; on the one hand we recognise both the futility of his avoidance of growing up and the tragedy of his lonely plight; on the other we share his fear and we long for our own lost youth. The tension of the story is established around these conflicting emotions born of Wendy's laboured decision to resist Peter Pan's dream of eternal youth, and to return home from Neverland. She recognises how close she came to the edge. To keep from returning is a test of her will, and this battle follows her into adult life and is exemplified in her determination not to see anything in the dark space of the imaginary tent. The youthful eye

of her daughter Jane sees through Wendy's self-imposed blindness, and she recognises in her mother's face a concealed desire to return. It is a desire we have all shared, that moment of childhood regression, the process of aging and remembering in which, as Walter Benjamin explains, time is collapsed in a 'universe of convolution' and the 'past is reflected in the dewy fresh "instant", a painful shock of rejuvenation ...' (Benjamin 1969, p. 211).

For Wendy and Jane, the evocation of memory is achieved through the occupation of the aedicule, or little house. For John Summerson (1963) this childhood thrill provided the impetus for an entire architectural genre. He traces its origin to childhood space-making under the table. The childhood fascination with the occupation of the aedicula is first experienced, he claims, when we discover that we can occupy space, such as the space enclosed under a table, and then proclaim this occupation by naming the space 'my house'. These forms of play represented ceremonial and architectural manifestations from which the formative aesthetic principle of Gothic architecture developed. From a Romanesque desire to 'transform the heavy man-made temple into a multiple, imponderable pile of heavenly mansions' (Summerson 1963, p. 9) grew the airy pergolas that 'make their frequent appearance in the fantasy-architecture of Pompeii' (Summerson 1963, p.15). In Summerson's account of the Gothic:

> Each portal has its own complex of orders, ranging from the grand aedicules which provide the gables for the arches, to the lesser terraced aedicules which canopy the prophets and martyrs ranged along the jambs. The whole cathedral resolves itself into these aedicular orders, sometimes pertaining to and articulating the structure itself, sometimes confusing and even contradicting the structure. And from first to last, all effort strains at one objective – the destruction of mass, the reaction not so much of upward flight, as of suspension in space, the creation of an architecture wholly independent of the exigencies of gravity (Summerson 1963, p. 16).

The sense of power experienced in that moment of occupation, the feeling that one belongs, in an absolute sense, proves to be double-edged. However, at the moment of almost complete reconciliation with the world we recognise

the horror of the possibility of self-annihilation through assimilation with the object world. For Walter Benjamin, the assimilation with the 'other' experienced by the child hiding under the table is complete to the point of jeopardising the autonomous self which, therefore, must be reclaimed with a 'shriek of self liberation' (Nicholsen 1997, p. 59). For Benjamin, that sense of dissolving into the world produced a terror powerful enough to inspire language, or at least a 'shriek', an effort to distinguish and to re-establish independence from the 'other'.

Such recollections also may have inspired more humble pursuits. According to Summerson, both camping and boating are adult forms of regression to an infantile fascination with the 'little house'. They are types of occupation in which our recognition of the precarious separation of life-within from the elements heightens our sense of security in a hostile world (Summerson 1963, p. 2). The thinness of the tent wall increases our sensual exposure, and we feel our natural world with greater keenness. The pleasure of this experience is only possible, however, because we have the choice to pack up the tent and head for home should it become necessary. But even within the secure walls of a stone house, nature, in combination with imagination, can conjure a similarly keen experience:

> 'Listen to tha' wind wutherin' round the house,' she said. 'You could bare stand up on the moor if you was out on it tonight.'
>
> Mary did not know what 'wutherin' meant until she listened, and then she understood. It must mean that hollow shuddering sort of roar which rushed round and round the house as if the giant no one could see were buffeting it and beating at the walls and windows to try to break in. But one knew he could not get in, and somehow it made one feel very safe and warm inside a room with a red coal fire (Burnett 1987, p. 37).

For Baudelaire, the extremity of an exterior environment enhanced the security of an architectural interior: dreamers like a good winter. 'Every year they ask the sky to send down as much snow, hail and frost as it can contain. What they really need are Canadian or Russian winters. Their own nests will be all the warmer, all the downier, all the better beloved ...' (Bachelard 1958, p. 46).

The ultimate knowledge of security is therefore essential to the pleasure of the experience. Without this knowledge the experience degenerates into fear, or even terror. We can claim, then, that architectural space is fundamental to a pleasurable appreciation of wild nature. The fear or terror is a product of the perceived capacity for nature to harm our body. The pleasure is a product of our knowledge of protection and our simultaneous ability to imagine its absence. The experience results from a relationship – perceived, imagined, real – between body and nature. Or, as Merleau-Ponty (1999) puts it: 'The relations between things or aspects of things having always our body as their vehicle, the whole of nature is the setting of our own life, or our interlocutor in a sort of dialogue' ( p. 168); a dialogue mediated by architecture. Gaston Bachelard (1958) uncovers the way in which architecture speaks as our interlocutor, an introjection rather than projection of body. He observes that Malacroise allows the house to furnish the isolated inhabitant with '... strong images, this is, with counsels of resistance ... And so faced with the bestial hostility of the storm and the hurricane, the home's virtues of protection and resistance are transposed into human virtues' (Bachelard 1958, p. 46).

Norberg-Schulz (1980) claimed that dwelling (knowing how you are in the world) was a product of orientation and identification. At first, this appears to be a simple equation, but identification involves a complex mix of physical and psychological space, of environment and memory. Within this concept of dwelling, architecture provides a threshold not just between indoors and outdoors (physical spaces), but it is an extension of our body-space, a kind of prosthetic outer-skin, a sensual mediator that allows for a complex exchange between us and our environment; between our outer, social space and our inner, remembered worlds. Or, as Juhani Pallasmaa (1996) describes it: 'the interface between the opaque interiority of the body and the exteriority of the world' (p. 29). In this sense, even the simple act of making an imaginary tent creates a provocative architectural space.

Experiencing the imaginary bed-sheet tent was for Wendy a sublime moment, one of both terror and delight. Its architecture provided a potential portal to Neverland – the landscape of childhood half longed for, half feared, familiar as all one's dreams and host to all one's fears: 'Strange to say, they all recognised it at once, and until fear fell upon them they hailed it, not as

something long dreamt of and seen at last, but as a familiar friend to whom they were returning home for the holidays' (Barrie 1994, p. 61). Peter Pan chose to live in a garden, first Kensington Gardens where he had lived '…a long long time among the fairies' (pp. 41–42) and then Neverland. The garden in *Peter Pan* forms a typology of loss, and in particular the loss of childhood. The loss was, in part, the loss of an ability to experience the world in the unique way that a child does, a popular subject for the Romantics, including William Wordsworth. He presented children as possessing a powerful perceptual and creative view of the world that was unique to them: 'There was a time when meadow, grove, and stream, / The earth, and every common sight, To me did seem / Apparelled in celestial light, / The glory and the freshness of a dream.' (Wordsworth 1970, I 1–5, p. 279). But Wordsworth tempers his idyllic recollections with a realisation of loss that parallels Benjamin's 'painful shock of rejuvenation' and convolution of time: 'It is not now as it hath been of yore; – / Turn wheresoe'er I may, / By night or day, / The things which I have seen I now can see no more.' (Wordsworth 1970, I 6–9, p. 279)

This idea of a lost place, an unattainable garden, distant and yet familiar, is a powerful theme in Western thought. Literary gardens (such as Neverland), are examples of this typology of loss, as are the Garden of Eden and representations of Arcadia. The boy Peter Pan is an inhabitant not of our world but of this lost garden. His clothing indicates that Peter Pan is more of the garden than of this world: '… clad in skeleton leaves and the juices that ooze out of trees'(Barrie 1994, p. 20). In order to mitigate a profound sense of loss brought on by a sense of separation from the landscapes of youth, William Wordsworth (1970) invokes his boyhood self, whom he re-imagines as a 'happy shepherd boy': 'Thou Child of Joy, / Shout round me, let me hear thy shouts, thou happy shepherd boy!' (III 34–35, p. 280) 'Heaven lies about us in our infancy!' (IV 66, p. 281). This desire to recapture youth through the garden is also graphically captured in Kenneth Grahame's *The golden age* and *Dream days* (1973a, 1973b). In the final story, the children bury their favourite toys at the foot of a tree in the garden, having reclaimed them from a charity parcel. It had been assumed that the children had outgrown the toys and would no longer need them. By reclaiming their favourite toys and burying them at the foot of a tree in the garden, however, the children preserve the

possibility that their childhood might be exhumed. Carpenter (1985, p.120) rightly concludes that these stories might also be seen as a personal exhumation of Grahame's own childhood. The garden imagined as the repository of a recoverable childhood.

However, the inverse of this desire for recovery becomes evident in Wendy's growing recognition of the consequences of transgression which she sees in the tragic character Peter Pan. To stay too long in Neverland is to risk his unenviable fate. Kenneth Grahame chose a wilderness as a site pregnant with the possibility of transgression. The 'Wild Wood' held an irresistible attraction for the young Mole. It was a mixture of curiosity and terrible fear, and at the centre of it lay the protection and security of Badger's burrow.

The 'Wild Wood' is a place of imagination, creativity and fertility. In this respect, *Wind in the willows* demonstrates a common theme of children's literature of the Golden Age. Another example occurs in Frances Burnett's *The secret garden*, in which the overgrown garden is admired by Dickon because of its wild fecundity: '"I wouldn't want to make it look like a gardener's garden, all clipped an' spick an' span, would you?" he said. "It's nicer like this with things runnin' wild, an' swingin' an' catchin' hold of each other"' (Burnett 1987, p. 84). In this garden-turned-wild(erness) it is the regenerative power of nature during the spring season that dominates the lives of the characters.

Solitude, freedom, inspiration and empathy with natural surroundings are important concepts in children's literature of the Golden Age. The third (empathy with the natural environment) is clearly seen in the change in Mary's attitude toward the moor in *The secret garden*. Mary first regards the moor as ugly, but toward the end of the novel, having been transformed by her garden experiences, she recommends its beauties to Colin. The change in the garden from a forgotten winter tangle to a spring garden in full bloom is a projection of the transformation of the children's lives brought about through their contact with the garden.

Frances Burnett's chosen place of transformation, a secret garden, is located within the labyrinthine grounds of an estate which itself is contained within a moor. After crossing the moor, the drive approaching the house is contained within a 'tunnel' of trees (Burnett 1987, pp. 15–19). The containment of an Arcadian world within a world is a significant structural

device of Golden Age children's literature. Lewis Carrol's *Alice* stories, for instance, present a series of bewildering thresholds between worlds, some of which involve significant changes in scale. The first threshold – a rabbit's burrow by which Alice enters 'Wonderland' – is one example. These secret gardens are therefore wrapped, womb-like and nurturing spaces. Badger's house in the *Wind in the willows* is also a womb-like space approached through a tunnel and located at the centre of the 'Wild Wood'. 'The Wild Wood' is presented as a site of imagination from which either good or evil may come and so Carpenter concludes that the '... deepest level of the imagination dwells, as Badger does, in the middle of spiritual or psychological danger' (Carpenter 1985, p. 57).

But a study by Rachel Sebba (1991) suggests that our adult recollections of childhood landscape are as much a product of adult psychology as a true reflection of actual childhood experience. She draws on Freud to support this argument: '"The recollected scenes from the past are not productions of real occurrences" but rather "products of the imagination, which find their instigation in mature life"' (Sebba 1991, p. 403).

Sebba's study indicates that a significant majority of adults recall that outdoor experiences, their first explorations and discovery of the world, were fundamental to their childhood. This privileging of the outdoors above architectural space, however, shows no correlation with actual childhood experience. There is a gap, it would seem, between adult recollection and childhood experience that privileges nature over architecture and, in so doing, establishes a sense of loss: loss of an imagined paradise and a loss of innocence, or rather, the passing of the opportunity to experience the world with the sensual freshness of childhood. Sebba claims that this privileging can be explained in part by the importance of perceptual connection with our environment in early childhood prior to the development of cognition. The information children learn and glean from this perceptual connection provides a selective advantage that is as important as gathering food. As the child matures, perceptual knowledge is gradually replaced by other forms of knowing; by cognitive reasoning, which can prove a more reliable way of knowing the world. This develops to the point that by adult life it becomes difficult to actually see what is right in front of their eyes. Therefore, Simon

Schama (1995) claims: 'Before it can ever be a repose for the senses, landscape is the work of the mind. Its scenery is built up as much from strata of memory as from layers of rock' (p. 6).

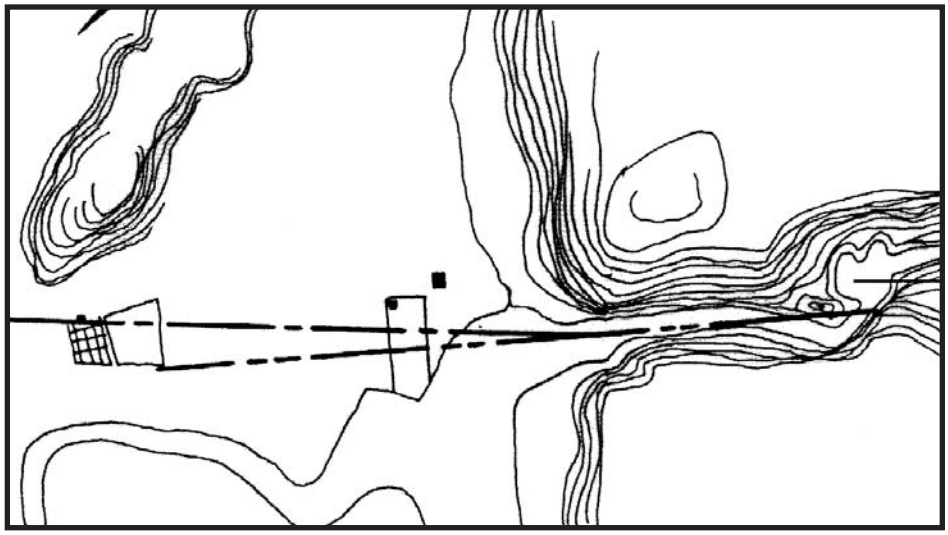
> It seems, therefore, that in the course of the development of perception, its relative importance begins to decline during childhood itself. It is reasonable, then, to expect a person to relate to childhood as the climax in all matters regarding sensory perception (Sebba 1991, p. 415).

Sebba argues that, since perception is measured by criteria of pleasure, it makes the loss of the ability to experience the world as a child does a kind of expulsion from Eden. 'This expulsion is not a punishment for stealing from the tree of knowledge, but is rather a direct result thereof' (Sebba 1991, p. 415). Adult memory of childhood experience of the outdoors might be understood then, as an ecstatic moment romanticised from the distance of adulthood and longed for again. The question then arises as to how this sensual pre-language connection between subject and world remains – beyond its childhood inception – an important and influential way of shaping and also knowing our world. To illustrate this we could look at a landscape space – the Cataract Gorge Park in Launceston, Tasmania – and a contemporary landscape concept – wilderness – to see how the literary and philosophical concepts discussed so far are relevant to contemporary making and knowing.

The city of Launceston was established in 1804 as an essentially military settlement located at the entrance to the Cataract Gorge, a peculiar landscape formation admired by its earliest Western observers (William Collins and William Patterson) for its sublime beauty. Collins and Patterson arrived (on separate occasions) at this place in 1804, shortly after Coleridge and Wordsworth had embarked on their Romantic literary careers on the other side of the globe. These explorers came to determine the utilitarian advantages of the place, and their descriptions of the landscape generally reflect this imperative. But when it came to the gorge itself, they relied upon an aesthetic language, the terms and concepts of which were a reflection of works such as Edmund Burke's (1971) *A philosophical enquiry into the origin of our ideas of the sublime and the beautiful*. This landscape then held certain characteristics that

captured the Romantic eye; indeed the physical and historical facts of the gorge in many ways parallel Coleridge's use of an architecture/body/landscape metaphor in *Kubla Khan* (Blythe 2000). Despite its origins as a military establishment, Launceston developed without the aid of a city plan. Its form is therefore determined by other influences and reveals much about how the landscape was 'conceived'; that is, how the landscape was given birth to as an 'idea' (rather than simply seen) by these early Western settlers. The two oldest cross streets of the city, Cameron and Cimitiere, set up axes that converged at the entrance to the Cataract Gorge so admired by Collins and Patterson (see Diagram 1). The sublime landscape of the gorge is therefore pulled into the spatial personae of the city from its earliest conception, and adds a new layer to the conceptual framework of the city. The cross-axis of the city therefore extends from government (symbolic order), through the commercial zone, through the instruments of authority and correction, and then terminates in the sublime landscape, or wilderness, represented by the Cataract Gorge. In this model, the concept of wilderness becomes a fundamental ordering principle of the city, a conceptual counterpoint to the grid-like garden of the Governor's Cottage (Blythe 2000).

*diagram 1*



The two main cross streets of the early settlement were both on axis with the entrance to the Cataract Gorge, which was visible from both streets.

Recalling his childhood experiences of the gorge in the 1830s, Henry Button (1909) tells of places such as 'The Giants Grave', a large rocky mound that, at one point in its geological history, divided the cataract. The south run weathered less quickly, and now appears as a waterless large depression known as 'Lobs Hole', as though the Giant's Grave had been created from the missing material of this void. In Lobs Hole was a cave occupied by a notorious local hermit, 'the cranky man', who chased boys when provoked. The physical characteristics of this unique landscape draw to themselves other associations mixed with both fear and delight. It is indeed a sublime landscape that works as a kind of wilderness at the heart of the city. Other place names, such as 'The Fairy Dell', indicate the way in which this landscape was perceived as a fanciful landscape of 'imaginations'.

The site of *Kubla Khan's* pleasure dome was a walled garden, a separated space, a world within a world: 'So twice five miles of fertile ground/ With walls and towers were girdled round ... (with) ... gardens bright ... ancient forests ... (and) ... Enfolding sunny spots' (Coleridge 1954, lines 6–11, p. 297). The same idea of containment of an Arcadian world within a world is fundamental to the formation of the Cataract Gorge spaces, particularly the first basin that has developed as one of the City's key sites of identity. It was also a key spatial concept in English children's literature of the same period. An article published in *The Tasmanian* in 1891, the same year that the Cataract Gorge Park opened its gates, illustrates how the space of the First Basin was imagined as a place of transformation and regeneration. 'When we pass the gates we enter a veritable fairy land [sic] and one enchanting scene after another unfolds itself to our view. Yielding to the influences around and about him he [the visitor] forgets the troubles ... of everyday life, and wanders away into that vision land' before re-emerging, re-born as it were 'from that fairy land [sic] carrying its influences with us'. The association of this transformative garden with the landscapes of childhood is not lost on the writer: '... as if to complete the fairy vision, he most probably hears the merry echo of children at play somewhere close at hand' (*The Tasmanian* 1891).

This concept of contained landscapes of transformation was also a key structural device of children's literature of the Golden Age, of which *The secret garden*, *The wind in the willows* and *Peter Pan* are key examples. The concept of

wild nature as a source of regeneration found its way into popular circulation through the myth of the 'wild man'. The invention of the sublime and deism resulted in a turn-around of values – wilderness, previously detested, could now be seen as inspiring and divine, and is evident in the December 1891 article: '... the thoughts of the visitor are led by his surroundings "from nature up to nature's God"' (*The Tasmanian* 1891). By the late Middle Ages, the myth of the wild man had found its place in Western popular mythology. The wild man was presented as having superior erotic and physical strength that derived from his simple lifestyle and wild habitat. 'The wild-man-as-superman tradition led to the idea of a beneficial retreat to the wilderness' (Nash 1973, pp. 47–48). This restorative power of nature is an important aspect of the wilderness concept and was evident in the formation of England's Hampstead Heath Act of 1871, which stipulated the preservation of the heath's wild, unkempt qualities and set aside 200 acres of protected land for this purpose. The Act was created as a result of a conflict over the right to develop the heath. What was extraordinary about this dispute was the accepted argument that the city, despite its abundance of parks, needed a wilderness for its own civic health (Schama 1995, p. 523). In the case of Launceston, the aesthetic principles of the sublime, conceived in the literary drawing rooms of England, and an appreciation for wild nature, played an influential role in the location of the city within the wider landscape and also in the disposition of its parks and streets. The relationship of town and wilderness is a potent idea that underpins the formal layout of that city.

There are other similarities between these literary landscapes and contemporary wilderness values, suggesting that such values are as much a product of cultural memory as they are a product of actual places labelled 'wilderness'. Jay Hansford C. Vest (1987) proposes that, rather than aloneness, it is sensory emersion or communion with nature that is a defining property of wilderness solitude. This communion or emersion works as a reconciliation of self and world, a simultaneous projection and introjection of self and landscape in which the subject is returned to the state of the child sitting under a table and risking the annihilation of self through complete assimilation with the 'other'. Wilderness in this sense is a fiction that enables

us to re-write for ourselves a profound connectedness with the greater scheme of things, one that is dependent on the knowledge of security provided by architecture. This defining quality of wilderness is related to an adult sense of loss associated with childhood, and is evident in Wordsworth's poetry and the literature of the Golden Age. In this sense, the concept of wilderness represents a kind of primal scene or childhood landscape associated with both humanity and the individual – it is a place from which one's origins might, eventually, be exhumed. Architecture, body and nature are, then, intrinsically interlinked conditions by which we know our world. They are, in this sense, inseparable. Even extreme landscape concepts such as wilderness cannot be understood in isolation. It is mutually dependent upon the conditions of both architecture and body in our ways of knowing.

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# part *c*

## *alternate pedagogies*

# Introduction ~ *Margaret Robertson*

The social reality of time–space compression predictably focuses dialogue on the subject of appropriate pedagogies for authentic teacher–learner interactions on best ways to use information and communications technologies (ICT). The arguments to do so are compelling, with data continually being released from government agencies showing a progressive creep towards universal home ownership and/or access to online computers. Concerns have shifted from worrying about the digital divide and social inequity (an argument not confined to wealthier nations, notably China and other South East Asian countries) to thinking about the social consequences of the processes that occur between learner and the online community with whom he or she interacts. The Internet conveys messages laden with the values and cultures of the webpage designers and the biases of search-engine technicians. Although likely to be challenged with the current wave of Internet advancements in China, the current predominant usage of English and Western free-market values are viewed by some analysts as threatening to traditional cultural values of smaller nations. Common among related concerns are issues related to the impact on young people of access to a largely uncensored, limitless source of information that is more often than not unbounded by ethical standards, public processes or review.

Mass education in the twenty-first century cannot be controlled by educational providers using strategies previously known and understood. Now more than ever there is a need to work in ways that are always at the heart of successful teaching – that is, partnerships. We need to collaborate with young people to find techniques that will enable them to process information, make viable decisions and construct appropriate actions that will lead to successful fulfilment of their goals and the local, national and global responsibilities that are part of effective life-long citizenship.

In this section of the book we present three different scenarios for the conversation about appropriate pedagogy. Deliberately, they do not all focus on ICT. One of the dangers of the current cultural transition from a print- (and television) bound society to an interactive multi-media world is that we can allow the seductive power of the medium to rule our heads and allow us to misplace central virtues of enriched social interaction based on mutual acceptance and respect for the voices of others.

A reminder of the power of developing children's questioning skills at an early age is at the heart of Laurance Splitter's chapter (Chapter 7). In the title he uses the phrase 'listen to them think'. He implores us to focus on the 'how' more than the 'what' questions; to make the curriculum problem-focused rather than information-focused, and to keep the learning enquiry open for continuing engagement, modification and meaning – all connected with how children think, how they engage with new material and how they construct meaning. Harking back to earlier educational philosophers such as John Dewey, the message is clear: We need to put the 'society' back into education.

Postmodern individualism and assertiveness training are survival mechanisms for society, but their associated behaviours do little to encourage connectedness with our own community – in real or cyberspace. Building a community of enquiry through the strategies associated with the philosophy-for-children techniques is a constructive path to a better future.

In Chapter 8, Neil Schwartz and Steven McGee grapple more directly with the nexus between ICT and learning pedagogy. Their analysis contextualises student-centred learning strategies within the computerised environment. Adopting problem-solving approaches is a way of activating children's imagination and visualisation skills to allow them to construct meaning and understanding. Through an analysis of the human working memory we learn some useful information concerning how learners learn. However, such analyses are restricted if not connected with individual learners' experiences and constructions of meaning. Reference to Vygotsky's theory of learning (and Dewey again) highlights the importance of scaffolding or mediation between learner and learning environment. In the past, the teacher assumed this role. Now computers have the capacity to achieve the same prerequisites for quality learning and instruction. These authors

challenge us to take the known tenets of quality learning environments into the world of online learning.

The rhetoric of constructivist approaches to uses of computers in classrooms mirrors Splitter's call for classrooms of enquiry. Schwartz and McGee warn, however, of the time lag that exists in many US schools, where a culture of change to match the demands of the new technologies is simply not occurring fast enough.

To complete the trilogy in this section on alternate pedagogies, Andrew Fluck provides an historical overview of the growth of computer education in schools and homes over the past two decades. The flood of computers into school education has brought a corresponding need for ICT curriculum custodians to develop appropriate policy frameworks. One of the key questions throughout this expanding base of computer-based education is how to balance the need for skills with social behaviours that meet the community's needs. This theme of values and guided learning that underpins the two earlier chapters continues. What this author considers is a step further along the journey towards fully online learning education.

Imagine a future in which all children are enrolled in online learning programs with Internet-linked computers at home or at nearby community access points. Why build new schools? Why not use existing infrastructure in new and innovative ways that link the community? The buildings can become community access points for culturally diverse activity with associated online courses to build mathematics, literacy and other curriculum competencies taking place in cybertime – or times chosen by the learner. Too much to imagine? It raises interesting challenges for those wedded to traditional notions of time management, schools as buildings and teachers as instructors.

Our trilogy presents a similar argument, along a continuum from students learning together in communities in real time and shared real spaces, to a future where all interactions may be in displaced time and in cyberspace. The authors' central concern is for a continuing focus on the socialisation process of the child and the responsibility which lies in the community to embrace the changes in culturally acceptable ways. The challenge is to be active designers of an authentic curriculum, rather than passive complainants of social disharmony.

7

# Listen to them think: Reflections on inquiry, philosophy and dialogue

*Laurance Splitter*
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Our children grow up in a world which, in crucial respects, seems to have lost its way. Caught between the selfish individualism of the freemarket and the vague notion that they are still members of one society who should care for and respect one another, they face an impoverished set of options for making judgments and decisions, particularly of an ethical nature. The **traditionalist** appeals to what has always been done; the **authoritarian** simply lays it on the line; religious **extremists** (who are both authoritarian and traditionalist) allow faith and crude interpretation of ancient texts to supplant reason, common sense and compassion; **subjectivism** and **emotivism** – in their unreflective forms – appeal solely to the beliefs and feelings of a privileged group (perhaps just oneself!), while **anarchists** and (some) **postmodernists** believe that there is no such thing as morality anyway, so who cares?

All of these positions violate or betray the notion of what it means to be a person in the world; that is, a being who has both rational/cognitive and emotive/affective faculties, who, while being interdependent with others in a myriad of ways, has his or her own goals, ideals, perspectives and thoughts. It is against this stressful background that the community of inquiry is

proposed as a model environment in which each person sees himself or herself as **one among others**. The sense of community – **of belonging to something larger than oneself but not at the expense of one's sense of self** – is mirrored in the inquiry process. Inquiry is a construction, in which individual subjective contributions are woven together to produce a mutually satisfying outcome (if not a consensus) which respects and builds on each and every contribution but is something larger than any one of them.

Both philosophy and the community of inquiry represent a paradigm shift in the way we think about education in terms of its goals and methods. When we understand how philosophy can refocus attention onto the search for greater meaning and understanding, rather than onto the transmission and accumulation ('learning') of pieces of information ('knowledge'), we can begin to **reconstruct** the curriculum 'from the inside'.

Notwithstanding a lack of consensus on educational means and ends, a considerable degree of convergence exists around several key points[1] :

- Students, from the moment they start learning until the day they stop, need to be active, not passive, in the learning process; in particular, they need to be aware of themselves as thinkers and to **think for themselves**.
- Good teaching incorporates what students already believe and value – that is, starts from where they are (if only to challenge it).
- Learning environments are democratic, collaborative, nurturing and respectful of all involved.
- **How** students learn, and **how** teachers teach, may be more significant than **what** is learned or taught.
- Rigor, structure and quality are characteristics of **good pedagogy** and **good thinking**, rather than something called 'good content'.
- (Nevertheless) there can be no **how** without a **what**: no process without content, but the content is not predetermined by teachers, curricula or society.
- (Therefore) appropriate content must, **at all times**, remain connected to what students value as important and meaningful.

1 These points are generally held by, and reflected in, state and national education policies. The Department of Education in Queensland, Australia, has incorporated the concept of 'productive pedagogies' into its New Basics Project, currently being trialled in that State's school. This concept, along with its US relative, 'authentic pedagogies', draws strongly on constructivist theories of teaching and learning. See Gore 2001, Newmann & Associates 1996, Gunn & King 1996, Hayes et al. 2000, Roelofs & Terwel 1999. Splitter & Sharp 1995 also provides some analysis of these issues.

- Content/subject matter suited to rigorous pedagogy and appropriate learning environments should be **problem-focused** and open, rather than information-focused and closed.
- Assessment should be used appropriately, to measure the effectiveness of teaching and learning; it should **not** be 'the tail that wags the dog'.
- What things mean and why they matter is as important as what things are known to be true.

## Philosophy: A framework for thinking and inquiry

Taken together, these factors constitute a framework or schema for the teaching of thinking, of which philosophy for children is a paradigm. Similar to one developed in recent work on **authentic pedagogies** and **productive pedagogies**[2], this framework consists of three **dimensions of thinking** and three **indicators of thinking** (more precisely, indicators of each of the three dimensions), which help us to determine whether the personal growth, good thinking and the exploration of concepts and ideas are occurring. These indicators also can be seen as **enablers**, in the sense that they play a role in enhancing or improving each of the dimensions (see Figure 1):

The core idea behind philosophy for children is that with the assistance of the teacher as model, guide, mentor, provoker and stimulator (IE2 in matrix), students embark upon a collaborative, reflective exploration – an inquiry (D2) – of philosophical questions and ideas, using dialogue as their chief tool (IE1). In keeping with the nature of philosophy itself, the chief reward for this enterprise is the acquisition of **meaning** (D3) – through the making of connections of many different kinds – although the impetus for inquiry comes, also, from the desire to find (correct) answers to our questions.

We are familiar with the predicament of children who learn how to find 'right' answers, but who do not **understand** what they have learned. In this context, 'understand' can be taken to mean 'sees how things are connected or related'. Philosophy, with its focus on conceptual exploration and the acquisition of tools for thinking (= connecting), is driven by the need to understand the core concepts and ideas that structure our experience. As such it serves as a paradigm or exemplar of the kind of inquiry that young people yearn for.

2 See references at note 1 on page 113.

*figure 1* ***Dimensions of thinking***

| **INDICATORS/ENABLERS** → **DIMENSIONS** ↓ | (IE1) Student behaviour and interaction – including dialogue | (IE2) Teacher behaviour | (IE3) Classroom activities – including narrative |
|---|---|---|---|
| (D1) Classroom environment, personal and interpersonal growth **[affective/social/ ethical]** Students perceive themselves and their peers and teachers as persons. | e.g. Treating one another with care and respect | e.g. Treating students with care and respect | e.g. Modelling a sense of community through narrative |
| (D2) Thinking and inquiry processes **[cognitive/ reflective]** Students think, and 'think about thinking'; they see themselves and their peers as thinkers. | e.g. Dialogue as collaborative thinking; using criteria to judge the quality of our thinking and develop tools of good thinking | e.g. Helping students develop tools of good thinking, via direct intervention and modeling | e.g. Stories and teacher manuals model good thinking and reinforce tools of thinking; they also motivate children to become involved. |
| (D3) Challenging problematic content **[problematic/conceptual]** Students think about philosophical concepts and questions, and make connections that lead to meaning. | e.g. Dialogue creates and tracks movement between concrete and abstract levels of experience | e.g. The teacher urges students to connect with their own experience but also to think more deeply. | e.g. The narrative provides links to the philosophical tradition, in a context that is accessible for children. |

Now and again we hear a community or corporate leader calling for graduates or trainees who can **think** critically (solve problems), creatively and flexibly, who are imaginative and are proficient communicators, and who display good interpersonal skills, irrespective of whether or not they are trained in this or that particular area[3]. If these calls are to be taken seriously, then we need to construct pedagogic, curricular and professional development

3 There is a certain irony here, for it was industry and the business community that insisted upon redefining education along corporate lines, in terms of specific content outcomes and industry-related key competencies.

frameworks which realise the qualities associated with good thinking. It is hard to see how such a construction could fail to include the discipline of philosophy which, historically, has been more closely connected with the norms of good thinking (including **thinking about thinking**) than any other discipline.

Philosophy and good thinking are inseparable. **Digging deep** is a process which children themselves associate with philosophy, for they are obliged to think **conceptually** which, necessarily, takes them beyond – albeit still connected to – the surface level of anecdotal reporting and concrete experience. One form of conceptual thinking is reflective, or 'complex', thinking, which involves moving back and forth between thinking, as familiarly understood, and thinking as a process of mentally 'standing back' and examining our thinking (whether our own or someone else's). Also known as 'higher-order thinking' because the object of one's thinking is another thought (idea, concept ...), this process of mentally standing back is a crucial part of our self-awareness **as thinkers**. It is part and parcel of philosophy and can be observed in children's own reflections as well as in their dialogue with one another: when one person asks another to give a reason for his or her view, or says that he or she disagrees or wants to provide an analogy, example or counter-example etc. These are classic 'moves' in philosophy; they are among the tools we use in order to gain a deeper understanding of what we are thinking about.

Typically, when one person offers such a cognitive (or meta-cognitive) response, she is not merely **describing** another's thinking, but offering a **prescriptive** or **normative** interpretation; that is, an evaluation or judgment of some kind. Such normative responses are key moves in philosophy; they typically involve giving reasons or applying **criteria** as grounds or justification and are, of course, open to further inquiry, elaboration and challenge.

Good thinking is **transforming**, as well as critical. Notwithstanding a tendency to construe philosophy as a largely analytical and critical discipline, the experience of doing philosophy with children (reinforced by the many philosophical stories, long and short, which incorporate creative leaps and fantasies), reminds us of the role that imaginative, analogical, empathic thinking plays in children's ways of thinking about the world and their place in it. Furthermore, crucial areas of philosophy such as ethics and aesthetics

call for thinking which is transformative; that is, which **breaks through** prevailing boundaries, frameworks and conventions. When it comes to imagining unrealised scenarios and alternative 'possible worlds', we could do worse than follow the lead of children.

If thinking processes are one side of the coin, then **what we think about** (content) is the other. Philosophy invites us to think about age-old questions relating to **who** we are, **why** we are here, **what** really matters, and so on. The cultivation of good judgment and decision-making in business and civic life calls for a range of competencies and sensitivities, including – and centrally – tools for responding to ethical issues, an understanding of the logical structures that make reasoning and argumentation possible and an appreciation of the key concepts which structure our relationships with others (good, fair, justice, truth, respect, privacy, rights ...). These competencies and sensitivities are sub-disciplines of philosophy.

Concepts, however they actually may be formed or developed, function as **bridges** or **connectors** for thinking. I propose three characteristics – the 3 Cs – which pick out qualities of concepts that children, especially, find appealing.

## *Philosophical concepts are 'common'*

Philosophical concepts are common, in two senses. First, they are, by and large, familiar and in common usage. Children who inquire into the meaning of 'true', 'right', 'fair', 'mind', 'time', and so on, are hardly ever using these terms for the first time. The second sense in which these concepts are common is that there has to be a shared, if superficial, consensus as to what they mean. Without such a common base of understanding, the inquiry cannot even begin. One implication of this dual commonality is that children bring to their inquiry an implicit, 'child-like' understanding of what they are inquiring into. The method of inquiry enables each child to link his or her own understanding with those of others: his or her friends, teachers and the broader traditions or disciplines of which the inquiry itself is a part. The goal is to enable him or her to arrive at a clearer and deeper understanding.

## *Philosophical concepts are 'central'*

Philosophical concepts are central, in that their meanings matter.

Such concepts as those mentioned above are right at the centre of our experiential frameworks. It is hard to imagine how we could interpret, or evaluate, anything without them. Children need to know what they, and their friends, mean when they use words like 'right' and 'fair'.

### *Philosophical concepts are 'contestable'*

Philosophical concepts are contestable, in that there is no consensus (in the broad philosophical community, at least) as to what they mean. Children find the 'fuzziness' and boundary problems associated with such concepts to be particularly fascinating, and within the philosophy for children corpus of resources there are many which invite children to explore the similarities and dissimilarities among pairs of concepts such as discovery/invention, fair/right, privilege/obligation, pretty/beautiful ...

Contestable concepts give rise to contestable criteria, in the sense that any attempt to draw boundaries around such a concept is, itself, open to challenge and revision. Contestable concepts also give rise to contestable questions; that is, questions whose answers are, perhaps endlessly, contestable. Hence, the easily misunderstood maxim that philosophical questions have no right or wrong answers, a feature appropriately relished by some children, but inappropriately taken as a sign of relativism by others.

Implicit in these qualities is an understanding of persons as **one among others**, that is, as operating in both a subjective and an 'objective' (intersubjective, beyond-the-subjective) realm. The person who sticks rigidly to his own sense of what **truth** or **fairness** means has failed to grasp that one's conceptual understandings are publicly accountable; while the person who simply accepts the meanings that are given to or thrust upon him, has failed to internalise those meanings and so cannot be said to have any real understanding of the concepts or ideas in question.

In these few paragraphs I have been exploring dimensions 2 and 3 in Figure 1. But what of the first dimension (D1): the idea of creating an environment (in the classroom or elsewhere) in which personal and interpersonal growth are maximised – an environment in which **becoming a person** is seen as the key focus, not instead of, or over and above, a focus on teaching and

learning activities; **woven into** the enterprise of teaching and learning, so that these activities become ultimately inseparable? How we see ourselves as persons in this environment becomes intertwined with how we see ourselves as thinkers across a broad range of contexts. In philosophy for children, the concept which best describes the environment in which philosophy is undertaken is that of the **community of inquiry**. Table 1 conveys the key ingredients of a community of inquiry.

*table 1* ***Community of inquiry***

| **Community ... of ... Inquiry**[4] | |
|---|---|
| Sharing a sense of common purpose | Confronting situations that are problematic |
| Building and growing together | (Reflective) thinking and reasoning |
| Working co-operatively | Talking (dialogue) and questioning |
| Mutual trust, respect, empathy | Acknowledging and building on alternative points of view |
| Taking risks: a 'safe' place | Thinking that is self-correcting |

Taking responsibility, individually and collectively, for our views and actions

Caring for the subject-matter, how well we think about it and one another (maximising **intrinsic** motivation)

Encouraging students to see themselves as thinkers

Facilitating personal development ('one among others') by modelling an ethical environment (i.e. where actions complement thoughts and words)

We need a conception of thinking that matches the idea of persons as having both an inner (mental) life and an outer (physical) life. The conception in question – very much at the heart of philosophy for children and the community of inquiry – is one which links thinking (construed as mental and private) with thinking (construed as physical and public). What is thinking in its physical and public guise? The answer is dialogue[5]. In philosophy for children, dialogue is acknowledged as collaborative thinking, just as inquiry can be defined as **internalised** dialogue.

4 See Splitter & Sharp 1995 for further elaboration of this concept.
5 In philosophy for children, while no one philosopher's view or style is treated as sacred, the 'hero' or model for children's philosophical behaviour – specifically, dialogue – is Socrates (by whom I mean the character represented in Plato's *Dialogues*).

Like the thinking that takes place 'inside' a person's 'mind', dialogue is a relational activity, one that brings together two or more thinkers/persons in a conversation that is structured according to certain norms. When people engage in dialogue, they:

- focus on one or more **problems** or problematic scenarios
- take responsibility for ensuring that the conversation proceeds (moves forward) according to some kind of structure or direction (albeit not one which is predetermined by a commitment to specific content outcomes)
- utilise a broad range of tools and strategies, including critical/analytic and creative/synthetic
- show a willingness to reflect on and correct their own thinking (this includes becoming aware of **how** they think and – through the dialogue – how **others** think, and being prepared to evaluate critically the quality of that thinking)
- respect others involved in the dialogue, and to treat them as **equals** with respect to the dialogue itself (that is, no one person's views count as privileged on account of **who** that person is)
- work to establish some kind of consensus – if only a tentative one – and reach new levels of understanding and insight.

## Beyond philosophy

I cannot provide here an exhaustive description or evaluation of the community of inquiry environment across all subject areas. I shall, instead, offer a general overview of the requirements that, in some form or other, need to be met, with reference to the thinking and inquiry matrix proposed above.

### *Dimension 1: Classroom environment*

The notion that schools should be caring and nurturing environments; that is, places where everyone treats everyone else as a **person**, is hardly novel. However, building a community **of inquiry** involves **intellectual** and not just affective empowerment. One term which captures this dual notion of empowerment is **authenticity**: the community of inquiry is an authentic, rather than a second-hand, environment, in which students perceive that they

really are engaged as thinkers and practitioners of their subjects, and not merely as vessels for receiving and regurgitating the accumulated wisdom of others. One key question, then, is how to reconstruct teaching, learning and knowledge construction in ways that support, rather than undermine, the sense of authentic community which should prevail in **all** subjects and classrooms.

### *Dimension 2: Thinking moves*

To what extent do disciplines other than philosophy call for and cultivate complex or reflective thinking, and the construction of (normative) criteria? Answering this question may have more to do with the practice of teaching and learning than with anything intrinsic to the disciplines themselves. Classrooms where students are called upon to be reflective (in response to such questions as 'What do you think about his solution or idea?', 'Do you think those two are really offering the same solution to, or explanation of, the problem?'), and to think more conceptually using criteria or reasons as grounds ('So what do you think that really means?', 'Does that suggestion/example help us to understand the problem better?'), will encourage deeper thinking than classrooms where arriving at 'the answer' and moving on, are seen as all-important. To put it somewhat simplistically, we need to balance **breadth** of curriculum content with **depth** of curriculum understanding.

In doing philosophy there is no tension between 'digging deep' and 'covering the curriculum', for as soon as the curriculum is taken to include content and outcomes that are detached from the ways in which we think about things, we are no longer doing philosophy but something else (history of ideas, for example). One then has to ask about the moves and procedures needed and applied in such situations. For example, where memorisation of large amounts of content is required (that is, required for assessment purposes), the level and quality of thinking called for are relatively low. Conversely, the more that students are urged to be reflective and to 'think about their thinking', the better their chances of actually **understanding** what they are learning – even if the 'what' has to be cut back by curriculum designers, teachers and examiners.

### *Dimension 3: Challenging content*

We need to look for networks of relationships which expand our understanding in science, mathematics, literature, history etc. Notwithstanding a greater degree of commitment to specific, often predetermined, outcomes, such networks should incorporate **both** the conceptual push to generalise and classify, look for reasons and explanations, and build a growing sense of connectedness between the accepted traditions of the discipline and the emerging views of students, **and** the sense of connection, grounding or resonance with the concrete world of each child's everyday experience.

What I am calling for here is a **conceptual reconstruction** of the curriculum, that allows students to identify and grapple with the core concepts, questions and ideas that lie at the heart of each discipline and subject area, while finding ways to ground what they are learning in (that is, relate it to) their own experience. For example, if we are really convinced that algebra is an important part of the core curriculum, we need to construct teaching and learning activities around such concepts as number, function, equation, variable, graph etc., and associated questions about what these concepts mean, how they may be applied or exemplified and why they are important. We need to guide students to a deeper understanding while maintaining a sense of connectedness to their own experience. We need to help them to understand why problem-solving in algebra is important, not (merely) by gesturing weakly at impending examinations or the credentials gained by achieving a good result, but by using these key concepts to build bridges from what they know, understand and value, to what we sincerely believe they should know, understand and value. If we cannot help students to build these bridges, then it would be far better to spend time in areas where we can.

I envisage that as part of the curriculum restructuring imagined here, the commitment to (predetermined) content-laden outcomes (in the name of 'knowledge', 'values', or whatever) – note: **not** the content itself! – will be replaced by a commitment to reflective and deliberative inquiry; in other words, to the procedures of good thinking. This shift of emphasis is crucial, for it amounts to an invitation to students to use their own and others' ideas, beliefs and concerns as **starting points** in the inquiry process and, thereby, to follow the inquiry where it leads, along paths structured by the norms and

standards of good thinking. While the outcomes of such a process cannot always be predetermined (which is a feature of any genuine inquiry), this loss of certainty is more than compensated by gains in understanding, appreciation and motivation.

## Beyond schooling: Living a worthwhile life

The goal of thinking well in **all** aspects of life, both public and private, takes us beyond the contexts of school and work. What is the point of teaching someone to think well in one domain if that person stumbles through life, unable or unwilling to ask questions? These questions might be about what makes life worthwhile, how to make the world a better (more tolerant, more caring, more livable) place, how to guide himself or herself and others in making balanced decisions concerning work and recreation, living and dying, sexuality, the environment, emotional well-being – questions and issues which are **philosophical** in the sense that they require us to think carefully about key concepts which are deeply contestable, and to make judgments about what is right or wrong, appropriate or inappropriate, worthwhile or pointless…

Think about some of the indicators of social disharmony which confront us: drugs (legal and illegal) and substance abuse; youth depression and suicide; alienation and truancy; bullying; private versus public/state (schools, health facilities, banks, transport infrastructure, housing, broadcasting, prisons); the corporatisation and market subjugation of education; immigration and refugees; treatment of prisoners; the growing gap between rich and poor (within and between nations); unemployment and welfare issues; the alleged inevitability of globalisation; the dehumanising influence of information technology in the home and workplace; conflicts over abortion, access to fertilisation technology, cloning, euthanasia and other issues of life and death; gambling. I would not for a moment suggest that these problems are either easy to understand or easy to resolve, but they do have some important common features. In particular, they all reflect an apparent inability, on the part of our so-called enlightened and democratic society, to find an appropriate balance or compromise between the extremes of **individualism** on the one hand, and **collectivism** on the other. Associated with the former are such

concepts as **private**, **individual rights and responsibilities**, and **the self as active and powerful**; while with the latter: **public**, **collective** (**social, cultural**) **obligations and responsibilities**, **the self as subservient to the larger whole** (**the 'other'**) **of which it is one small part**.

It is both naïve and mischievous to pretend that these problems would vanish if only we understood more about the relationship between self and other, or individual and collective, or private and public. However, I sincerely believe that the failure to grasp, or even acknowledge, the force of these dualisms helps to explain why the level of public and political debate surrounding these problems is so impoverished. It is this impoverishment, in a society whose history is hardly conducive to contemplation and celebration of 'the inner life', which stands in the way of our progressing as a truly civilised democracy.

In all these situations, an essential first step toward a more considered and mutually satisfying solution is to lay the foundations for a proper social dialogue which takes, as its starting point, the challenge of working through the notion of the self as one among others. Following, once again, the framework set out in the matrix above, here are some thoughts as to how this process might develop.

## *Rediscovering a sense of community*

Australians are struggling to find a point of balance between the extremes of self and other. Along the path that includes the individual, the family, the corporation, the nation state and the global economy, we need to find room for a sense of *Gemeinschaft*, or community[6].

Suppose, however, that irrespective of their situations vis-à-vis family, employment, status etc., people were encouraged to form and belong to communities of various kinds. These communities would be just large and diverse enough to expose their members to a range of perspectives and viewpoints, but not so large or powerful as to stifle or disempower any of its members. Suppose, further, that these communities developed along the lines of the classroom community of inquiry, as represented above, with its dual commitment to

6 Religious fundamentalism plays its part here, coming down now on the side of Western capitalism, now on the side of the state, and always on the side of the 'family'. What are harmful here are not the allegiances themselves, but the authoritarian and dogmatic spirit in which they are presented.

mutual respect, trust, care, empathy and safety, on the one hand, and tackling problems through reflective thinking and engagement (dialogue), on the other.

I fantasise about the creation of a network of inquiring communities throughout all levels of society. Over and above meeting the crucial need for a sense of **belonging** – a need left unmet for many – such communities could hold the key to advancing the involvement and interests of all citizens – which, after all, is what living in a democracy is supposed to be about.

## *Engagement: Collaborative thinking and dialogue*

There are many opportunities for people to express their views. However, a few exceptions notwithstanding, such forums as talk-back radio are little more than sounding boards for the personal opinions of radio presenters and a vocal minority of listeners. As useful a social function as they play, they do not constitute the kind of dialogical-based inquiry that I have in mind. The same can be said of formal debating clubs, Internet chat rooms and, lamentably, our political leaders. Dialogue, if it is both to reflect and give rise to inquiry-based thinking, must be more than a competitive, adversarial, self-serving, point-scoring exercise.

How do we bring about a shift toward a reflective, dialogical approach to social issues, in a socio-cultural environment that venerates sports heroes over intellectual activity and careful deliberation? I propose the establishment of a number of informal communities of inquiry, each involving a diverse mix of citizens, working together under the guidance of an experienced facilitator who must continually steer a path between the **Scylla** of authoritarianism and the **Charybdis** of mindless relativism. It would be his or her task to explain, model and encourage the tools and 'moves' that make inquiry possible, and to assist those involved to become more active and interactive intellectually (hence, empowered). With the establishment of a safe environment, participants will be prepared to take risks (try out new ideas, speak out in public, perhaps for the first time, rethink an issue because of what someone else has said), delve more deeply in an effort at greater understanding of an issue, and acknowledge the benefits of working and thinking together.

### *Working out what really matters: The substance of inquiry*

As I have already observed, there is no shortage of issues and questions upon which these proposed communities of inquiry might deliberate. First, the issues and concepts involved are **common** or familiar, in that most of us are aware of them and of how they impact upon society. Second, they are **central** to the core questions of what kind of society we want to have and what constitutes a worthwhile life. Third, these matters are **contestable**. What gives them a philosophical flavour is that, while they can be informed by science and other areas of 'fact', they are not resolvable by scientific methods alone. We may be quite well-informed about the effect of illegal drugs on individuals and society, or about the latest statistics on the impact of immigration on the environment, but still disagree on what courses of action are most appropriate (this is an example of the philosophical precept that disputes of a **prescriptive** kind – where we talk about what **ought** to be the case – cannot be resolved by appealing to **descriptive** accounts of how things actually **are**). The challenge of collaborative inquiry lies in searching for common ground and a way forward **in the face of disagreement and conflict**. We are entitled to express and argue for our own views, but we are obliged to listen to what others have to say, and to examine the impact of their views upon our own.

Such public dialogues are not merely 'talk-fests', for they aim to make real progress on significant, often divisive issues. But as with inquiry generally, we measure success not by the attainment of a quick-fix that will work in all circumstances and for all time, but by such factors as personal fulfillment at being actively involved in an authentic process of deliberation and inquiry, the shedding of old prejudices and dogmas, and the gaining of new insights into, and understandings about, the issues in question **and also** the ideas, feelings and values of others who may disagree with us.

## Concluding comment

The community of inquiry is too powerful an instrument to be restricted to the classroom – although that is not a bad place to start. We can do more than give lip-service to such concepts as **citizenship** and **democracy**, particularly in these times when so many are feeling excluded, alienated and powerless.

I acknowledge that in our society, and in our time, money talks more loudly than ever before. But I also share the view that the endless pursuit of material wealth and power is, ultimately, soul-destroying, both for those who find them and those who do not. I am proposing that we embark on a different kind of pursuit, with a view to gaining a different kind of wealth and power (without for one moment minimising the pain and suffering wrought on those who have nowhere to sleep and not enough to eat). What, we may ask, is true happiness? Personally speaking, I do not know, but one thing is clear to me, as it was to Aristotle: the pursuit of happiness, if it is to nourish the mind and the soul, not just the body, requires us to become more reflective, more considerate of one another, and more involved in each other's thoughts, hopes and dreams.

Nowadays, we are called upon to become cleverer, more knowledgeable, more marketable. My call is for us to find ways to become more thoughtful.

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8

# Theoretical context and issues of instructional design: Learning and problem solving in web environments

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*A blinking cursor, a flashing icon,*
*a face in the reflection of a screen.*
*A computer...*
*A learner...*
*a mind and a machine.*

Learning will take place at the nexus of the mind and the machine more than any other place, in the next twenty years. Indeed, the Rand Corporation's Institute for Education and Training predicted that the Internet and the open information systems available on it will dramatically transform the processes and products of learning and teaching worldwide (McArthur & Lewis 1996). This chapter explores that connection – the user and the computer, the

learner and the learning device. We examine thinking, problem-solving and the way learning environments have been, and can be, built to understand the ways in which children learn. We show how imagination, intention, goal orientation and visualisation combine to allow children to make meaning through the computer's window on the world.

## Fundamental concepts of learning and instruction

Children interact with computers in ways that reflect the ways in which they think. Indeed, thinking is at the heart of both the design of the machine and the way people use it. Thus, in the sections that follow, we discuss thinking in terms of the way children learn, the way instruction should be designed for learning to take place, and the way computer-based learning environments have been built to facilitate the learning process.

### *Theoretical conceptions of learning*

Psychologists use metaphors to help them think about learning. Mayer (1996), citing work by Kuhn (1970), Ortony (1993) and others, made the point that metaphors guide both the variables psychologists choose to study in their work and the theories they build to explain the behaviour they observe. Metaphors are helpful because they give structure to invisible or anomalous things, and allow predictions and expectations to be made from them. In short, metaphors map onto unfamiliar things those things that are well understood.

One of the most robust metaphors in psychology is the metaphor of the computer – the very machine upon which we focus here to explore the ways in which children learn and solve problems when interacting with it. Work with computers during the 1950s led to theories of the ways people think and learn because scientists relied on human learning and performance to build their computers. Ironically, the mind was used to build the machine, and now the machine is used as a metaphor to explain the mind. Indeed, Mayer (1996) pointed out that:

> ...both computers and humans engage in cognitive processes such as learning (or acquiring knowledge), remembering (or retrieving knowledge), making decisions, answering questions and so on. Computers perform cognitive tasks

by processing information – taking symbols as input, applying operators to the input, and producing output. (p.157)

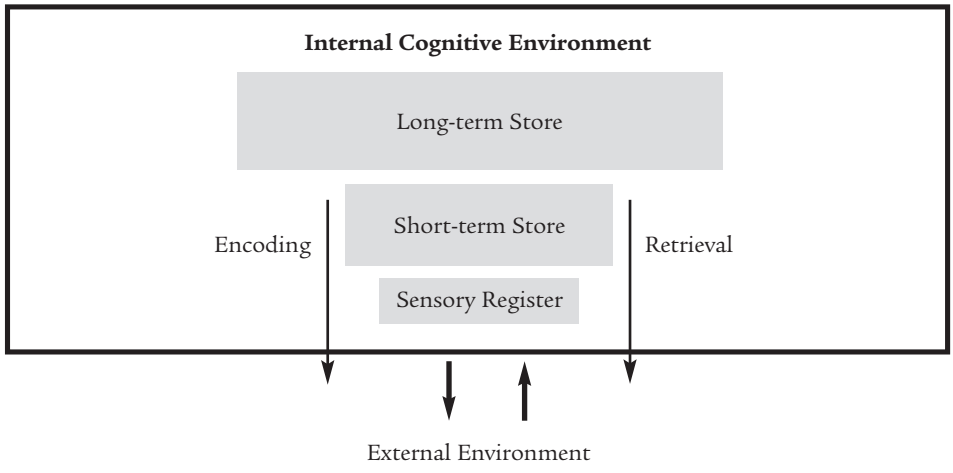
Thus, human thinking can be thought of as information processing because humans input and output information and apply operations to information in the same ways that a computer does. The computer is the metaphor for thinking, and learning is the activity of the thinking process. In short, the information-processing metaphor allows psychologists to think about the ways by which people learn.

## *Architecture of a human information processing system*

### The structure and function of memory components

The information-processing system is important for our purposes because it highlights important aspects of thinking that are relevant to an explanation of the ways in which children learn and solve problems in a computer-based environment. Briefly described, information is perceived through a sensory buffer, transferred into a short-term, limited-capacity store, and then placed into a long term store – a process known as encoding (Atkinson & Shiffrin 1968). When the process is reversed, information is remembered by retrieving it from the long term store (See Figure 1).

*figure 1* ***Cognitive information-processing model***



The sensory register is responsible for perceiving relevant information from the environment; the short-term store is responsible for allocating attention and applying operators or strategies to make meaning out of, and to manipulate, the information in some way. The long-term store codes the information for use later on – either as to whether the information is about things, how to do things, or when and under what conditions things can and should be done. The system is regulated by the user via meta-operators that serve to control and monitor the effectiveness and success of the system. Thus, operating on information is what humans do when they work to solve problems and learn. In short, operating is the use of the information-processing system.

When children operate on information, either to encode or retrieve it, their activity is either controlled or automatic. If controlled, attention is allocated and meta-operators are engaged. If automatic, little or no attention is used and meta-operators are not required. In the latter case, system use consumes little to no cognitive resources, freeing up the short-term store for other memory functions. In the former case, the system is heavily taxed. The point is that cognitive operations, when they do take place, occur within the limitations of the short-term store. Indeed, the store is such a workhorse of the system, that Baddeley (1992) dubbed it 'working memory' – a name that has stuck with it for the past thirty years.

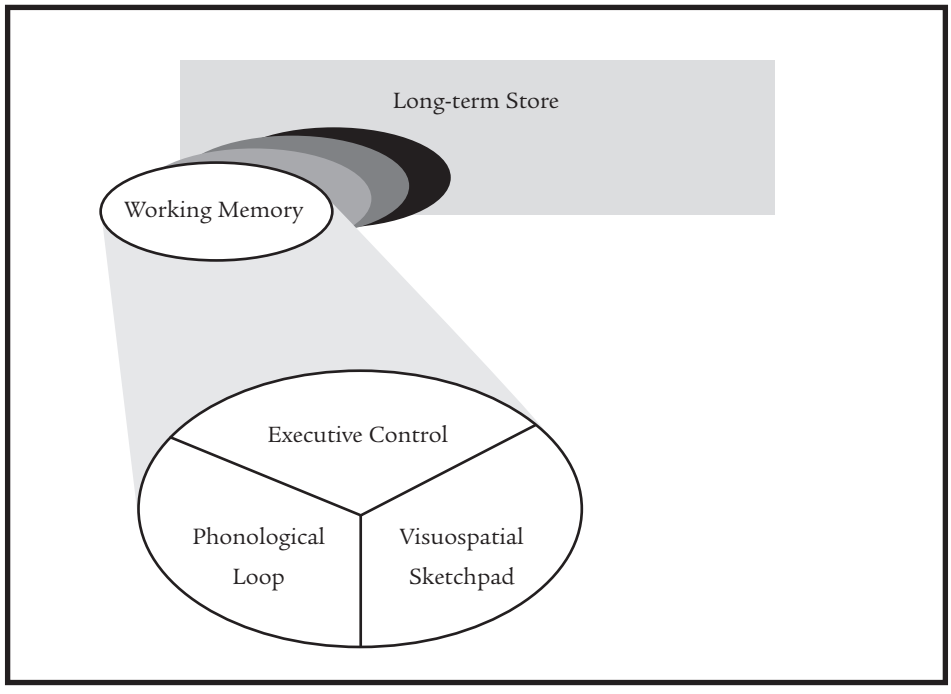
**The importance and limitations of working memory**

Working memory is important to discuss because it sets limits on the degree to which a child can operate on information to learn and solve problems in a computer environment. That is, working memory is the component of the system where thinking takes place. Children actively retrieve into working memory information they already have in their long-term store to make meaning out of new information they are actively encoding. Thus, working memory is the dynamic section of the system's three stores, where new and old information mix and interact.

According to Baddeley and Della Salla (1996), working memory contains a phonological loop for processing verbal information, a visuo-spatial sketch-pad for dealing with non-verbal, spatially-based displays and an executive

process for managing the working memory function. (See Figure 2). The phonological loop processes information in a serial sequential fashion, with linguistic-based propositions functioning as the cognitive code. The visuo-spatial sketchpad processes information simultaneously as one data chunk (Larkin & Simon, 1989), and codes it as an image (Paivio 1983). The executive process controls the strategies children put in place to regulate the system's use, as well as the monitoring procedures used to ensure the system is operating successfully. Since working memory can keep only seven (+/-2) bits of information active at any one time (Miller 1956), working memory is limited in the amount and type of information it can handle. Text presented on a computer screen, for example, takes much more space in working memory to process than a computer-based graphic display (c.f. Mayer & Heiser 2000). Thus, verbal information is processed significantly less efficiently than information that is spatial. In addition, the better and more automated the executive strategies learners have available to use, the more room in working memory they have available for processing.

*figure 2* ***Baddeley's conception of working memory***



Three factors affect the degree to which children can use their working memory to think. One is the amount of experience they have in using their executive meta-operators strategically. This is a type of procedural and conditional knowledge that builds upon the basis of opportunities for use. The second is the amount of factual knowledge children have readily accessible in memory about subject matter (e.g. the concept of molarity in chemistry or the influence of Monét's love of light, his failing eyesight and the love of his Giverny garden on his art). The third is the actual developmental capacity of children to be able to use their information-processing system efficiently. Young children have less working memory space, show slower processing speed and are significantly more inefficient in using this space even if given strategies by older learners (Bjorklund et al. 1997; Case 1998).

So, working memory is where the action is, but it is the ways in which children use this 'action' space that is of interest to educators and instructional designers. Understanding cognitive use enables computer engineers to design computers as tools to help users learn, find what they need and solve problems that are of concern to them. Indeed, when computers are designed as tools, children become better and more enabled thinkers (Becker 2000).

Unfortunately, while the computer as a metaphor has gone a long way in helping psychologists and educators think about how the mind might work as a machine, the computer has fallen short in helping scientists understand how children actually use the mind (and the machine, for that matter) to learn. That has led researchers such as Mayer (1996) to point out that the computer metaphor needs to evolve to a new metaphor that better reflects peoples' use of their cognitive system – not so much in information processing per se, but in the process of making meaning. That is, it has become essential to understand the use of the cognitive system in more realistic contexts – the contexts in which people actually solve problems, learn and seek information to learn. Constructivism is the theory that offers this new metaphor.

**Constructivism: The learner as builder**

Philosophically, constructivism has its roots in Giambattista Vico's eighteenth century ideas that people, as agents in the evolution of knowledge, really know nothing more than the cognitive structures they actually build

themselves (Von Glaserfeld 1989). That is, constructivism is a metaphor of the learner as a 'knowledge builder'. As Von Glaserfeld put it: 'to know' means 'to know how to make' (p. 123). Thus, constructivism is the idea that humans construct their own knowledge – their own reality – from their interactions with the environment and each other. Memory representations become 'knowledge' in a constructivistic framework – not just 'information' as in an information-processing point of view – knowledge that is conceived, born and developed via the active volitional use by the thinker through his or her everyday transactions with the external environment and his or her negotiated sense of reality with other thinkers. Thus, knowledge, constructivistically speaking, is general, schematic, mediated and coherent, not atomistic, concrete, objective and arbitrary as it is for the information-processing model of the mind. In short, constructivism views learners as active players in the use of their information-processing system for making meaning of the world – a meaning-making process that is dynamic, idiosyncratic and experientially based. Add to that what is known from research on the information-processing system, and we discover that meaning-making is constrained by the limitations of working memory and the strategies available to the learner for using the system to think.

We have journeyed through a discussion of the information-processing model and have added to it a description of constructivism because we believe that constructivistic ideas, in conjunction with the current theory of working memory and metacognitive executive processes, offer a conceptual framework for the ways in which computer environments need to be designed and the ways by which children need to be taught to interact with them. That is, the crux is to design, offer and integrate computer-based instructional systems within educational environments in such a way as to afford constructivistic ways of processing to be maximised. Jonassen, Myers and McKillop (1996) summed up the point nicely when they wrote: 'learners (who) actively construct knowledge from multimedia, acquire cognitive, metacognitive, and motivational advantage over learners who attempt to (simply) absorb knowledge' (p. 97).

## *Theoretical conceptions of instruction*

To think of children as builders of their own knowledge implies, as Duffy and Cunningham (1996) pointed out, that '(1) learning is an active process of constructing rather than acquiring knowledge, and (2) instruction is a process of supporting that construction rather than communicating knowledge' (p. 171). Thus, children need goals, plans, models and tools with which to build knowledge structures when using a computer to solve problems and learn. That means computer-based instructional systems need to be built so that children can interact with them in instructionally viable ways. We focus on three theories of instruction that offer guiding principles for that interaction: Vygotsky's theory of sociocultural mediation, John Dewey's emphasis on situated learning, learning by doing and inquiry in the learning process, and Jerome Bruner's theory of discovery learning. All three theorists were constructivists in their philosophy of learning and instruction, and their ideas provide the infrastructure for current views of effective instructional practice.

Vygotsky's theory of mediated activity is the idea that individuals derive meaning by being exposed to and engaging in the use of tools – tools that are material and psychological, but tools nevertheless that are given by and influenced (mediated) by the culture (Karpov & Haywood 1998). Material tools refer to objects in the environment that people create, fashion or simply use, and psychological tools are the strategies, concepts, images and propositions people use to think. Tools and mediation are important for Vygotsky because they 'presuppose collective use, interpersonal communication and symbolic representation' (Kozulin & Presseisen 1995, p. 68). Thus, for Vygotsky, while children are born with elementary mental functions such as attention, sensations, perception and memory, they develop higher mental functions from the tools they use – tools like computer software that help them think. These tools reflect and are given by the culture.

The idea of material and psychological tools was important to Vygotsky. Indeed, it is equally important to us. That is, the tool of the computer offers children not only a means of learning about the culture in which they live, but also how to think in that culture. Thus the computer, and the programs built to make the computer an interactive tool, help children to think – think in

terms of learning and solving the problem of operating the machine, getting information from the machine, seeking knowledge and understanding offered by the machine and making the machine perform work. That thinking is dynamic, reciprocal and problem-based, such that the computer and the mind interact in a way that the mind reads the cues afforded by the machine to seek, solve problems, find out, make happen, enjoy, relax, listen, create, watch etc. Thus, a sort of relationship begins to emerge where the machine scaffolds or sets parameters within which a user can interact with it to learn how to use it to reach some personal or instructional goal. Indeed, MacGregor (1999) made a strong case for the point that the way in which a computer is designed for use interacts quite dramatically with characteristics the user brings to the transaction. That is, a learner's prior knowledge, need for cognition, and sense of efficacy, influences the way the learner will navigate through a computer environment in order to learn. Schwartz *et al.* (forthcoming) added that the navigational platform substantively influences the quantity and the quality of the learning outcomes the learner takes away from that transaction. Thus, the interaction is a feedback loop whereby the learner builds concepts of how to make the tool work, at the same time revealing what the tool can do. The transaction with the material tool enhances the development of the psychological tools the learner derives, while also contributing inevitably at a societal level to the derivation of tools the culture needs in order to design yet more sophisticated, richer and more complex learning devices.

Vygotsky's ideas are not the only ones to influence the instructional development and use of the computer. John Dewey's ideas have been equally influential. Dewey (1938) was a proponent of situated learning – that is, learning in the context of a situation in which the products of learning will be used. For Dewey, if a learner is to develop methods for learning science, math, or literature, then science, math and literature should be anchored within the learning situations ('vocations', as Dewey put it) in which the learner has to use the knowledge, skills and strategies unique to these subject-matter domains (Kleibard 1986). Thus, instruction that is anchored in situations is of a higher utilitarian value because it yields knowledge that is alive rather than inert, growing from the nurturance of an ecological exchange of

vocational and social contextual elements, with elements of the mind (cf. Cognition and Technology Group at Vanderbilt 1992). That is, instruction delivered in the context of real-life applications, yields knowledge, skills and values that are borne, developed and sustained within that context. In short, the transaction allows the environment to evolve from the mind, and the mind to evolve from the environment.

Personal computers have afforded a close responsive connection for this transaction to occur. Indeed, computers have been able to create environments that are amazingly close to real life, simulating almost anything the mind of an instructional designer can conceive. Computers can mediate video, graphics and sound – and in particularly sophisticated virtual environments, tactual and vestibular stimulation – enabling students to learn in otherwise logistically impossible real environments. Thus, Dewey's plea some sixty years ago for contextual learning has never been more feasible than it is today with the educational viability of the personal computer.

And, yet, Dewey had other ideas that were well ahead of his time– ideas that are made possible by the personal computer. Dewey saw the importance of inquiry-based approaches to learning where students learn the procedural and conditional knowledge necessary to help them reach their instructional goals. Science is a good example of learning by inquiry, such that scientists and students learn much about the way the world works by the feedback the environment gives them when they pursue the solution to a scientific problem. Thus, students who construct knowledge within an inquiry-based learning context not only learn the various types of knowledge that may be a part of their instructional goal, they also learn the methods, strategies and procedures of thinking and problem solving which enable them to reach those goals. If inquiry-based contexts are built within the cyber environment of a computer, the feedback mechanisms become uniquely more responsive for learners to be able to modify their cognitive, metacognitive and self-regulatory learning strategies – often significantly more responsive than are teachers and learning environments in real life. Thus, inquiry-based methods of instruction can be particularly well-controlled in a computer environment, rendering the constructive acquisition of knowledge by the learner appropriately guided by the computer. Tergan (1997) made the point that computer

environments are most effective in guiding the problem-solving behaviour of students – especially when students are working under clear instructional goals.

Finally, Bruner's (1966) ideas of discovery learning add greatly to the constructivistic philosophy that guides the development of instructional systems designed for computer use. That is, the instructional environments built on computers are, for the most part, non-linearly based. Thus, they are navigable by various choice points of direction afforded by multiple links and nodes. This variety renders computer environments searchable by learners in very idiosyncratic ways – ways that are driven by the learner, for the learner, in terms of what the learner already knows and needs to understand. Thus, computer-based learning environments offer learners the opportunity to discover knowledge – the very notion Bruner espoused over thirty years ago. Learning in computer environments is discovery because the environment requires an active search for information and meaning whereby the learner directs his or her search by making choices at the juncture of more than one path. In the constructivistic tradition, learning becomes a process of discovering knowledge, (and the issues and relationships related to that knowledge) over the unfamiliar territory of a new knowledge domain. Indeed, for Bruner, knowledge is not in the subject matter per se, but in the activity of the learner in deriving meaning in that subject-matter domain.

## Use of technology

### *Overview of constructivist technology use*

The constructivist philosophy has graduated from academic circles into the centre of policy debates about the use of technology in the classroom. In its report to the President of the United States, the Committee of Advisors on Science and Technology extolled the benefits of constructivism for education (Shaw et al. 1997). However, the committee cautioned that much research work still needed to be done to better understand not only the theoretical benefit of the approach, but also the practical feasibility of implementing constructivism in the classroom. The research, cited earlier in this chapter, provides a solid framework for continued research into the theoretical foundations of constructivism. This section highlights the factors that influence the feasibility of implementing constructivism in the classroom.

In recent years, advocates have argued that technology can serve the role of catalyst for teacher change. However, few people would argue that technology alone will improve learning. Rather, the use of technology, coupled with an increased constructivist teaching orientation, can optimise student learning. Research has shown that the more teachers become comfortable with the use of technology, the more willing they are to orient their practices to approaches that harness the power of the technology. That is, teachers become more willing to be taught by their students. They show increasing skill at handling multiple simultaneous activities; they tend to make use of longer projects, giving students more choice of tasks, and they increasingly use activities that involve interdisciplinary content (Becker 2000, p. 26). All of these teaching behaviours are consistent with the constructivist philosophy.

One might conclude from Becker's research that schools simply need to purchase more technology and provide training in order to see increased use of constructivistic teaching approaches to incur increased learning outcomes. However, it turns out that the extent to which teachers adopt a constructivist teaching philosophy is significantly dependent upon the culture of the schools in which they work. So, not only do teachers need to change their philosophy to maximise the use of technology, but school administrators also need to change the school culture to support the transformation of individual teachers into a constructivist community. Becker and Riel (1999) reported that the extent to which administrators create a professional work culture, as opposed to a bureaucratic work culture, has a significant impact on the extent to which teachers adopt a constructivist approach (p. 32). 'A professional culture is indicated by teachers playing important roles in defining staff development activities, teachers pressing their peers to improve their performance, teachers encouraging one another to try new ideas, and discussion of school goals being a central and salient activity at meetings' (pp. 15–16).

When there is a professional school culture that supports constructivist teaching practices and teachers are provided with adequate computer resources and training, there is a great deal of evidence that constructivist uses of technology lead towards effective learning outcomes (Sivin-Kachala, Bialo & Langford 1999). Constructivist teachers tend to make greater and

more varied use of computer technology and various programs (Becker 2000) – the most popular of which is the use of word-processing programs, although a variety of other software programs are used as well. Yet, **frequent** use of technology alone is not as important as **constructivistic** uses of technology. In fact, Wenglinsky (1998) cautioned that in some cases use of technology with a traditional mindset can actually be detrimental. For example, students who made frequent use of drill-and-practice math software performed worse on the United States' National Assessment of Educational Progress (NAEP) mathematics test than did students who used no technology at all. On the other hand, students who made frequent use of constructivistically designed math software performed significantly higher on the NAEP mathematics test than did students who used no technology. Of course, this is not surprising in light of our discussion above, since learners will develop dynamically the knowledge they have when they are allowed to guide their transaction actively with a flexible and responsive computer program.

Even with all of the evidence that constructivist uses of technology are effective, schools that engender constructivist philosophies and provide adequate technology are still in the minority (Becker 2000). While this is a disappointing fact, it is not surprising, given the limited availability of constructivist-oriented software (Kamp et al. 2000). Within the US commercial market alone, the most popular content-specific software programs are the drill-and-practice and instructional management programs (Quality Education Data Incorporated 1994). Ironically, most teachers who use the software for instructional purposes are not happy with their selection, or the variety from which they have to choose (White 1997). This dissatisfaction is particularly true for teachers who teach science, English and math.

So, what happens is that constructivist teachers tend to invent technology-based activities using general productivity tools such as word-processing and presentation software. The problem is that patching together flexible software into various educational areas places an enormous burden on the teacher to reinvent his or her curriculum (Polman 2000). Thus, technology can serve only as a catalyst if there is software that facilitates the use of constructivist teaching practices.

## Concluding remarks

Never before in the history of education in the USA has there been such a convergence of forces around educational reform. The general public is supportive of the need to engender higher levels of problem solving for all students. Computers with access to the Internet have become commonplace in US K–12 schools (Kamp et. al. 2000). The field of cognitive science has made significant gains over the past twenty-five years in understanding how the mind learns and how to facilitate learning in effective ways. There is a wealth of evidence that when students engage in constructivist uses of technology they achieve significant learning outcomes. If constructivist-oriented software is to play an important role in supporting educational reform efforts, it is essential to take into consideration how students construct the knowledge they use to learn. In this chapter we have explored some of the ways in which to do so. We have examined the relevant theory on the ways in which learners think; we have explored the most utilitarian ideas of the ways by which students should be taught; we have considered the most effective ways computer technology can and should be used. If computers are going to find their way into effective use in the schools, the technology, the teachers, the learners and the learning environments need to be understood at the juncture of the mind and the machine.

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9

# The rise and rise of computers in education

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## Prologue

I can remember that day clearly. When the mysterious black box arrived at the school. Only Terry, the assistant principal, was allowed to touch it, and it disappeared for a time into the depths of his glass-walled office. We could see him, in the subdued light within, fiddling with knobs, connecting wires and staring at a tiny black and white screen.

During the ensuing three months, Terry was reported to be undertaking some research. He used this new computer to analyse the results of seemingly innocuous interviews. Not surprisingly, he was able to get a new and more important job with much more pay about a year later.

And so the black box came to me, the fledgling computing teacher, along with a promise: I could buy another! This was a question that I pondered, discussed with colleagues, and researched. It seemed to me that if this computer thing were to become part of everyday schooling, then two black boxes would probably be no better than the one we had. Powerful they may have been by the standards of the day, but school teaching is about classes, and classes are about kids – usually thirty of them in a batch. So I was very happy that our black box could serve as storage for some new units which were on the market. These were connected to TV screens, with colour!

I bought six, on the presumption that five students to a machine was an acceptable way of running an introductory computer course.

## And today...

How things change! This introduction to computers in education back in 1980, two decades ago, was perhaps typical of what occurred in many schools around the world. Teaching staff gradually exhibited a degree of polarisation. There were those who claimed that computers were no more than teaching machines revisited, whilst others saw the potential for radical transformation of the education system.

Twenty years on, there seems to be some justification for both points of view. Experiments to show that independent learning systems can produce better results than classroom teachers have not been conclusive. Initial studies in Britain were encouraging, but a third round of comparisons failed to detect any improvement in public examination scores (Wood 1998). However, studies in West Virginia, USA have shown that computers in the classroom can be of greater educational value than additional teachers in the school. Dale Mann et al. (1999) investigated the West Virginia Basic Skills/Computer Education program that was run across the state for more than ten years. They found there were significant gains in reading, writing and mathematics, especially in schools which made intense use of technology. The program also had good results on both sides of the 'digital divide'. Thus, low-income, rural and female students all benefited from the program.

These economic rationalist analyses have been contested territory since the introduction of computers into schools. On the one hand, proponents argue that the nature and content of learning when computers are present are different to that of the conventional curriculum. They talk about 'IT-literacy', and the change from left–right, top–down scanning to a new way of looking, with field-dependent focusing on the significant elements of a screen. In contrast, opponents require that the effectiveness of this innovation should be measured by an improvement in children's learning outcomes, as determined at policy level, and independent of the presence of technology in the classroom.

In between both of these views has been general development and discussion of the most productive ways of using computers in education.

My own experience has been in the maintenance of an information technology curriculum. It remains a moving target, since whatever we introduce into the high school as general computer literacy is rapidly adopted by our feeder primary schools. We therefore have to increase the stakes in each successive year. And this is a good scenario to describe, since it illustrates the way in which technology teachers (and more particularly, students) are picking up innovations equally rapidly in all sectors of education.

It has gradually become accepted that teaching children how computers work is not valid for the entirety of their school years. The technology itself changes so rapidly that this specific kind of knowledge can be acquired only in the three years prior to leaving school, if it is not to be obsolete in the world of work. And there are more powerful things that can be done with a computer system to engage, motivate and extend learning in all curriculum areas.

## ICT Frameworks

Around the world, there are various frameworks for cross-curriculum support through the use of information and communications technologies (ICT). Table 1 shows how a variety of states have adopted a set of generic strategies for using computers in all subject areas. What I have done is to set strand organisers with similar meanings into the same column. Using this technique, a high degree of uniformity can be seen between the initially disparate approaches (Table 1).

It becomes clear that many countries have policy frameworks for the integration of ICT into school education which include the following ideas:

**Operations and computer components:** learning how to operate the computer, to identify the working parts and subsystems, generic skills to transfer data from one application to another, filing systems and how to save/load/locate specific data; keyboarding and touch-typing.

**Publishing:** using word processors and similar programs for manipulating graphics; revising work and applying a variety of tools to evaluate and improve it, such as spelling checkers.

**Social issues:** learning about the ethical implications of computers in society; the importance and value of privacy, data security, encryption and public interest.

*table 1* ***Strand organisers for regional ICT integration frameworks***

| LOCALE | STRAND ORGANISERS | | | | | | |
|---|---|---|---|---|---|---|---|
| Utah, USA | Use each component of a computer (technology system) correctly: Demonstrate proper keyboarding techniques | Use application software to accomplish a variety of tasks | Understand major social and ethical issues in the field of information technology | | Use technology to develop problem-solving skills | | |
| United States of America | Basic operations and concepts | Technology productivity tools | Social, ethical and human issues | Technology communication tools | Technology problem-solving and decision-making tools | | |
| Alberta, Canada | Foundational operations, knowledge and concepts | Processes for productivity | | Communicating | Decision-making and problem solving | Inquiring | |
| Australia | Operations and computer components | Publishing | | Communicating | Problem solving | Researching | Independent learning |
| England, UK | Knowledge | Skills | Attitudes | | | | |
| | | Reviewing, modifying and evaluating work as it progresses | | Exchanging and sharing information | Developing ideas and making things happen | Finding things out | |

**Communication:** ways of exchanging information and participating in the global community; e-mail, voice mail and various forms of video-conferencing.

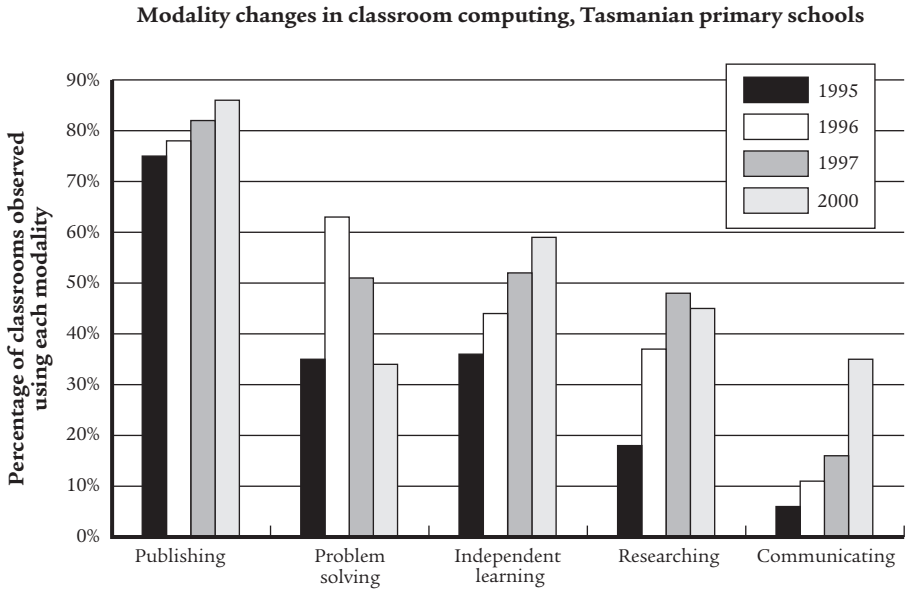
**Problem solving:** analysing problems in terms of the information required to solve them, making decisions based upon what is known about a situation; numerical and expert systems allow for the solution of complex and interacting problems.

**Researching:** using and making databases; searching for information on the Internet and on local CD-ROMs and servers, extracting and summarising information, and making judgments about its veracity.

There are two areas that stand outside this common umbrella. In the UK curriculum framework, ICT started as an element within the subject area of Design and Technology. In the first revision (1995), it emerged as a subject in its own right, but was tied to evaluation in all the other subject areas. Through all this change, the concentration on micro-electronics remained a strong thread, with the idea that all children should know how micro-electronic devices work, and therefore the implications on society. So, in British schools, control technology was intended to be common, with students actively using devices to sense the real world, and systems that could control aspects of it. For example, they might have a sensor linked via a computer program to a heater, maintaining a constant temperature for hatching eggs.

The other area that has not so far been explicitly included in most national frameworks has been an understanding of those computer applications that set out to **teach**. However, this does not match the expectations and attitudes of new teachers. New teachers with little experience were the most likely to use computers or the Internet to prepare lessons in the USA (US Department of Education 2000, p. ii). I tried an experiment with the students in a Bachelor of Education course, and asked each of them to nominate a software package for classroom use. The majority chose software that they classified for the independent learning mode, rather than any of the other five modes. This reflects changes observed by these pre-service teachers over several years, summarised in the chart (Figure 1).

*figure 1* ***Modes of computer use in primary-school classrooms***




This analysis compares with the 1999 Fast Response Survey System results from the USA that showed a similar preponderance of productivity tools such as word processing and spreadsheets, but this restricted sample showed a more even spread of applications (US Department of Education 2000, Fig. 2.6; see Table 2).

*table 2* ***Proportion of computer-using teachers in US public schools who assigned classwork using computers, by modality***

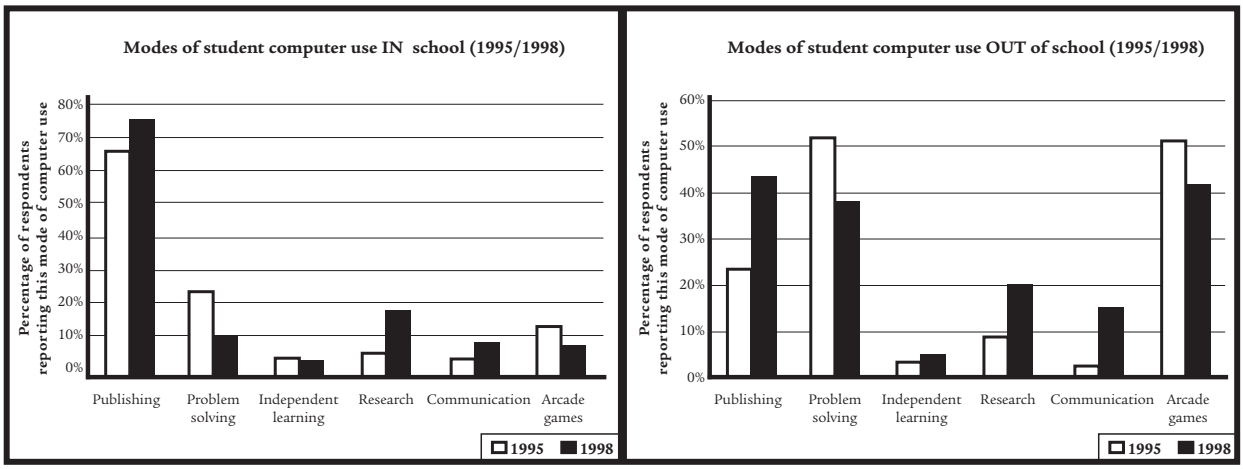
| Publishing | Problem solving | Drills (independent learning) | Research |
|---|---|---|---|
| 61% | 50% | 50% | 51% |

What do these figures tell us? To begin with, this analysis of computer-use modalities is being picked up as a valid topic for national monitoring.

We might then like to discuss which modalities are possible, and what kinds of uses children ought to be making of computers in their studies. From the table of ICT curriculum frameworks we can see that there appears to be a concentration on office productivity software and generic applications such as browsers. These can be described as **content-free**. That is, they contain no specific content related to any school subject. They might support learning by helping with the process, such as a word processor assisting with writing. Or they otherwise require targeted content to be located, such as a science web site.

Whilst publishing consistently has remained the most commonly observed mode of computer use in these primary-school classrooms, communication (e-mail etc.) has the fastest rate of increase. The independent learning mode has shown signs of general increase as well, at a steady linear rate. Some other data from high schools show the differences between computer use at school and at home. Generally, the amount of use at home is far higher than in school for all students, a result that has been confirmed on the national scale (Meredyth 1999) and in the USA. Whereas girls in some schools used computers more than boys, this was completely reversed in the home situation (Fluck 2000). Students revealed a much broader spectrum of activities on the home computer than in the publishing-dominated school environment (Figure 2).

*figure 2* ***Modes of computer use in high-school classrooms and students' homes***



## *Out of the classroom*

We therefore have evidence that students are using computers extensively and well at home. There is also a surge in the understanding and production of computer software designed actively to aid the learning process. The Australian Bureau of Statistics points to the fact that households with children are twice as likely to have computers and Internet connections as those without them. This indicates that parents obtain computers for the benefit of their children. One missing element appears to be a coherent strategy for linking home and school computer systems in a mutually beneficial way to support education.

There are additional factors to consider. There is a surge of interest in online and computer-based education for the schools sector. In the USA, a lobby group has produced a major report on the power of the Internet for learning (Web-based Education Commission 2000), and in the UK the government has started building a National Grid for Learning. Most states of Australia are converting their schools of distance education to systems that rely upon electronic and computer-based systems for the dissemination of material, as well as for teacher follow-up and communication. In the case of Australia's island state of Tasmania, some of these courses are being made available to students enrolled in the regular state schools. The consequence is that some of these students no longer have a full time-table, because their participation in open classes using flexible delivery methods means that they are trusted to work independently, sometimes at home. Tom Layton (1999) describes the way in which CyberSchool provides similar extension courses in the US context.

In the tertiary system, independent learning is fostered and praised. Some academics are moving teaching materials online, to supplement or complement regular face-to-face lectures and tutorials. Research by Joan Abbott-Chapman (1999), has shown that first-year undergraduate students now lead highly diverse and complex lives, requiring the intersection and collaboration of work, study and family commitments. These students appreciate the time displacement that online delivery permits. With the announcement of a state-wide centre for the development of online learning materials (Bacon 2000) it seems likely that students will arrive in the university system with prior experience of this mode of delivery.

But what are the consequences on the social development of the students? Can we now speculate about a new form of schooling for the future that may address some of the problems of the past? Like an historian, I feel that we should be able to look at the story of other innovations and predict likely scenarios for change. Yet, perhaps none have been comparable, in terms of socially sanctioned and organised education systems. Take public and compulsory schooling, and the invention of the printing press; these are perhaps comparable innovations, and neither has spread so far and fast as information technology in the classroom. If the consequences are going to be similar, we might foretell significant change in social dynamics, growth in prosperity, a decrease in reliance upon authorities, more individualism and an emphasis on the 'here and now'. Over the past five years, I have found that 50 per cent of world-wide-web links become invalid within twelve months. There's a lot of great information out there, but it doesn't hang around for long.

Consideration of the current curriculum reveals its inappropriateness for many children, especially boys, in high school. It could be inferred that the curriculum offered now is inadequate and in need of replacement. One could also argue that the accompanying teaching methodology fails to motivate such students. For those experiencing puberty, social interaction is a highly desirable and important part of the maturation process. Education in groups displaces these children to a large degree from their primary need to interact. Therefore, since many of the students are already learning most of their computer skills at home, it makes good sense to transfer an element of their academic studies to the home environment. Given a supportive parental background, it may be that study without the distractions of peers will be a lot more effective than that offered in the classroom context.

If 20 per cent of student learning were to be transferred from the school classroom into the home using this kind of opportunity, there arise questions about the capital investment in plant (for the government), and childcare arrangements/responsibility for students if they are to be released from class attendance. Butler (1999) discusses important questions raised by online learning. 'How do we develop online learning while maximising positive social impacts and minimising negative ones?' she asks.

One solution may be to retain the students in class, and to provide alternative social activities, without any attempt at a covert academic curriculum for students who qualify for this learning model. There may be considerable opportunity for much more student-centred projects, with teachers acting as facilitators and enablers in an environment in which the students determine the activity and evaluate their own progress. Examples might include the idea of a group deciding to build a boat during the winter months, with the intention of sailing it during their spare time in the summer. Online learning in their individual homes in the evening would make up the maths lessons they devoted to the recreation project.

A more radical solution would be to sell or lease a proportion of the school buildings to outside contractors for business purposes. This would eliminate the possibility of students continuing to attend school for the same hours as conventionally expected. There may be a variety of strategies employed to encourage students to participate in activities around the community to compensate for this. Volunteering is often considered a valuable community service that also benefits the volunteer, and processes may be put in place to encourage and facilitate this. Alternatively, there may be licensed employment possibilities that once again give access to a wider range of experience than could possibly be provided in school. If just 20 per cent of schooling were transferred to the independent mode, students would have a day per week spare. This spare time would not be coming at the expense of a reduced academic curriculum. Rather, it would be drawn from a more intensive learning process that students undertake outside the school, using computer-based or online learning materials. Teachers using such materials already have excellent monitoring tools, and one would expect them to ensure students maintained a satisfactory rate of progress.

## An historical view

Taking a retrospective look at the role of computers in education, we can perhaps see a clear delineation between three distinct phases. These phase changes are particular to the field of education, and follow general phases of innovation and invention in science, technology and society. The first phase change within a school, we can now see, started with the acquisition of the

first computer. Provided it remained operational for a reasonable period, and the learning community had members who understood its potential, there was virtually no turning back. This has happened in many schools, and undoubtedly will happen in many more.

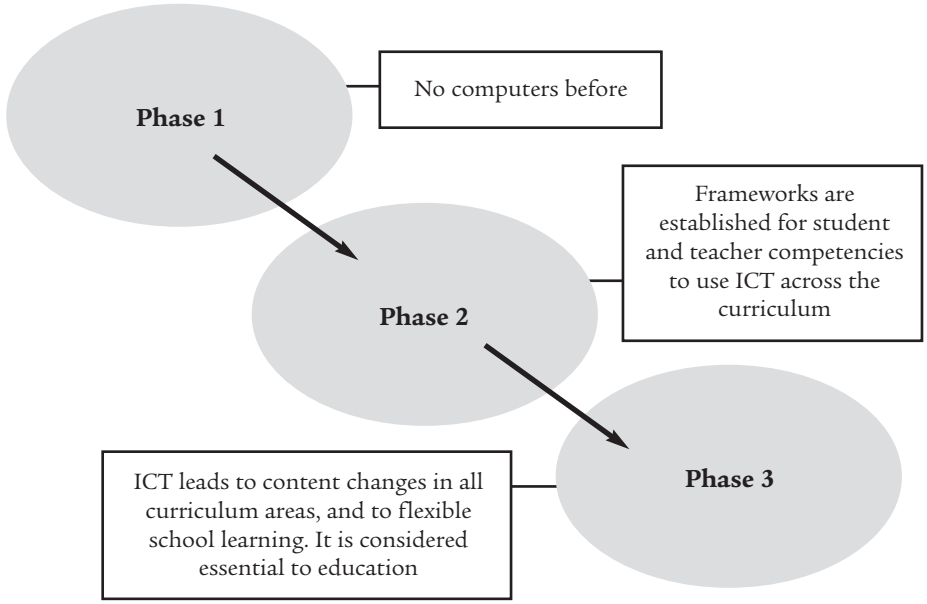
From one computer springs a host, as I described in the prologue. The effect is like that of the introduction of electricity. Once you understand it, and have the capacity to install it, the question of whether or not to do so is a 'no-brainer'. That the adoption of a technology has implicit cultural, societal and potential deleterious effects is scarcely worth a mention in the face of the apparent obvious benefits.

So really, the next clear delineation comes when there are determined, and successful, attempts to absorb and tame the innovation. This point might only come when computers are reasonably ubiquitous, and are the subject of specific policies within each educational context. A suitable mid-point might be when computers are used in all areas of the curriculum, and where both student and teacher standards of knowledge, skills and behaviour have been determined. This is a current goal of many national and international projects, and relatively few countries can honestly say they implemented them universally by 1999.

I suggest that the third and last phase is where computers have had significant impact upon the curriculum. Quite early on in the adoption process, new subjects arise which are specific to the innovation or the new technology. So, computer studies, information systems, computer-aided drafting and design all make their appearance on the examination lists. But then new topics emerge **within** the pre-Phase 1 curriculum. So real-time weather satellite pictures become part of the Geography syllabus, algebraic software part of Mathematics, digital media a branch of Art, and video-conferencing a tool to improve conversational skills in foreign languages. These changes of content affect all the areas of the curriculum, affecting not only **what** is taught, but also **how** it is learned. This change reflects the emergence of new areas of knowledge outside schools. For instance, the 1998 Nobel Prize in Chemistry was awarded to Professor John Pople, for the design of computer programs based in classical quantum theory as well as density-functional theory (The Nobel Foundation 1998). Online and interactive multimedia are just some of

the methodologies which exemplify these changes in learning style. Starting with peripheral subjects, these techniques extend to core learning areas, providing a personalised and individual education in tandem with the group instruction orchestrated by the class teacher. As these trends culminate, there is a realisation that a society's view of education has become inextricably linked with computer use, much as it has come to encompass schools as separate buildings within the community, and teachers as paid professionals. Computer skills are seen as important for work aspirations, and an essential learning tool. The three phases are summarised in Figure 3.

*figure 3* ***Three phases of computers in schools***




## Conclusion

The role of computers in education has gone through several phase transitions. Many countries are focused upon the second phase, and this represents a considerable effort. Some schools have adopted a 'laptop policy', whereby all students are required to have a computer. There are considerable impediments, such as the huge inertia of an existing teaching force that has never been trained in computer use, let alone deployed it as a teaching aid in

the classroom. And quite possibly we are beginning to see an entry into the third phase, where the computer itself changes the way in which education is conducted. If this third phase turns out to be a real transition, then actions taken to attain Phase 2 may need to encompass and anticipate it.

As I gaze over the River Tamar in northern Tasmania, dictating this chapter through my computer, I can see that the future of literacy and our understanding of language could be considered threatened. When to speak is to write, and to write is to hear, then our current mis-association of reading, writing, listening and literacy becomes an impediment to understanding our own language, rather than an analytical tool to support it. If my six-year-old can write in his own language and print a book at home, then we may have to shift the emphasis for acquiring fine motor skills to more artistic pursuits than the manipulation of a pencil to make text. That's the third phase for you.

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# part *d*

## *space, cognition and mapping*

# Introduction ~ *Rod Gerber*

Children experience and understand their worlds in various ways. They make full use of their environments through careful exploration and instinctive curiosity. While evidence presented in this section indicates that these experiences and consequent reflection do vary by age, gender and cultural grouping, there is little doubt that children are active learners when it comes to understanding the world around them and the worlds that they imagine. Considerable emphasis in this book is placed on children knowing that they know about their world; that is, they are consciously interacting with their world and making meaning of it. Direct experience of differing environments does certainly offer a tangible way in which children can express their understanding of these environments. They can talk about their experiences, collect items that act as souvenirs of the experience and take photographs during the experience. These latter two aspects introduce the idea that children's experiences of their worlds can be represented in some differing forms. The focus in this section of the book is to indicate that such deliberate representation of children's experiences of environment is a cognitive form of experience that involves the children in the construction of meaningful representations of their environmental experiences. The meaning injected into such representations may be expressed by the children, or it may be interpreted by social researchers. Either way, the meaning that is generated from these representations does highlight that children can and do make sense of their spatial experiences in a meaningful way. It is the challenge for educators to maximise these representations in the learning that they promote in their curricula.

There are three chapters in this section. The first, by David Stea and colleagues, is an important overview of children's spatial and environmental learning and education interculturally. It extends a wide range of earlier work by Blaut and Stea on the changing perspective of developmental psychology

and related fields of spatial cognition with young children, to focus on two key questions: What is the role of play in shaping children's cognitive development in the macrospatial domain? What are the contributions of one's biological sex and gender identity in shaping this growth? In answering these questions, the authors remind us that considerable research is emerging which shows that pre-school children do demonstrate cognitive understandings about spaces and environments they experience in meaningful ways that question previous developmental theories. These young minds are able to express spatial understandings that were previously thought not possible. They highlight that young children are not able to demonstrate consistent, comprehensive spatial abilities. However, they do give indication of some cognitive understanding of environments children inhabit.

Importantly, these authors demonstrate that, through the investigation of children at play in different environmental settings, one can appreciate the development of their geographical learning. Their development of the 'whereness' of places is demonstrated in playground games. Additionally, the different structures of play environments offer children opportunity to demonstrate how they learn about places and environments through toy play, especially those toys that incorporate landscape features. The concepts of mapping become apparent in landscape models that are introduced to young children through computer/Internet activities.

Gender and sex-related differences in spatial cognition amongst children are becoming increasingly important as it emerges that boys are usually given more opportunity to experience their local environments than girls. It appears as though sex differences in spatial abilities are correlated with socially expected behaviours by young boys and girls.

Taken collectively, the conclusions by Stea et al. do urge us all to be sensitive to the spatial abilities of young children, and to consider them carefully in regard to age, gender, environmental experience and cultural difference.

The second chapter in this section, by Hannele Rikkinen, adopts a different approach to understanding how young people understand their life-worlds. Her approach is to focus on children's views of the future as a basis for understanding their thinking about their environment. It is important for young people to construct positive images of the future because there is a strong

connection between the tone of their images and young people's ideas of their own possibilities of affecting the future. Using a study of young Finnish students, Rikkinen demonstrates how children's views of the future that are created in free form do provide interesting images that can be analysed and used as reflecting the children's attitudes to their environments and as guides for their teachers. The real benefit from obtaining such views from young minds is to know what they hope for and to work to make it happen.

The third chapter in this section, by Tammy Kwan and Jacqueline Anderson, takes the actual spatial representations in the forms of maps drawn by children in an international cartographic competition as a basis for understanding how young minds understand their world. The Barbara Petchenik Children's Map Award aims to promote 'children's creative representation of the world'. From the thirty-six winning entries, the authors have been able to develop a comprehensive understanding of how young minds view the world. Using content and the elements of maps as their bases, the authors were able to discern the variations in the children's interpretations of their world and the different cartographic emphases that they have used in their maps. Four themes were identified by the children: culture, peace and conflict, the environment, and salient landmarks or features. For example, cultural aspects were portrayed in different national costumes, national faces and national symbols; and environmental themes were included through flora, fauna, protecting the natural environment and negative impacts on the environment. Cartographic impacts were analysed based on symbolisation, proportion and arrangement, area presentation and projection, and symbols on their maps to represent distinctive features and landmarks. The authors demonstrate that children express a willingness to represent relevant geographical information on their maps, but they sometimes struggle to present this information in an accurate manner. Maps certainly are excellent forms of spatial, environmental representation.

Collectively, these three chapters reflect the breadth of contemporary ways in which to consider children's intentional representation of spatial information. They also imply that we should not take for granted the current research in the area; children are special in the ways in which they inform us that they can understand the world around them.

10

# Place and space learning: The 'play pen' of young children

*David Stea, Marites Piñon, Nancy Middlebrook, Vanessa Eckert & James M. Blaut*

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*This chapter is dedicated to the memory of James M. Blaut, who died before seeing it published.*

## Introduction

> The town looked like an aerial photo of itself, which is to say that it was squat, spread out, and contained a preponderance of right angles... It is located about an inch and a quarter west of the exact heart of the continent on the customary atlas-size map. (Maddux 1957, p. 22)

There was a time, not so very long ago, when the problems of school-entering children were viewed as those of unlearning the disruptive activities of play, irrelevant to life in a material world, and of learning conformity, discipline, the deferral of gratification and the suppression of creativity. That childhood was at best irrelevant was expressed in no uncertain terms by one of the USA's foremost psychologists of learning three-quarters of a century ago: 'there is a sensible way to raise children: treat them as small adults' (Watson 1928,

p. 81). The most progressive posture of the time was one of neutrality: children's pre-school experiences and behaviour were seen by a few to have some largely undetermined positive value; rather irrelevant, however, to the really important tasks of formal education. As far as contemporary educational philosophy and the school were concerned, apart from rudimentary language and motor-skill control, the school-entering child's mind was conceived as almost a *tabula raza*. Developmental theories of a half-century past, valuable as they may have been in non-educational contexts, and persistent as they have tended to be since then, stressed what children could not do, rather than what they could, and were taken as ammunition for the foregoing positions.

Other theories stressed social and biological contexts of education. In many nineteenth-century US schools, the sexes were rigidly segregated, often being taught in separate buildings or even separate schools. Girls studied subjects appropriate to sedentary, compliant, non-exploratory adult existences as homemakers, while boys were subjected to a different set of constraints and expectations. Entering the twenty-first century, schooling is no longer so gender-segregated, but sex-role expectations continue.

A couple of decades ago, these perspectives on education began to be challenged by such notables as Ivan Illich (1971). More recently, critics started to take aim at early childhood education as well, examining the possibility that the child actually brought to the school setting not just more cognitive skills in general than previously supposed, but skills specifically relevant to early formal education.

In previous publications (Stea, Blaut & Stephens 1996; Stea 1997; Stea, LeFebvre, Piñon & Blaut 2000), three of this chapter's authors began to explore spatial and environmental learning and education interculturally. Here, we first revisit a question addressed in a chapter of *The child's world* (Stea et al. 2000): What is the changing perspective of developmental psychology and related fields on the spatial cognition of the preschool child? Second, we attempt preliminary answers to another, related question: What is the role of play in shaping children's cognitive development in the macrospatial domain? We propose that the growth and development to which we refer take place in such a way that developing children cannot only understand (cognise) and depict spatially extensive environments (behaviour), but can act

in such a way as to display the genesis of participatory planning. If the latter is true, this implies the extension of experimental research with children to action research in 'natural' settings (Hart 1979; 1997).

## Early childhood development, cognitive mapping and spatial cognition in young children

Using the real world as the way learning has happened for 99.9 percent of human existence. Only in the past hundred years have we put it in a little box called a classroom (Nixon 1997, p. 34).

Spatial knowledge is thought to develop though active involvement and exploration in the environment (Piaget & Inhelder 1967). According to Piaget, children younger than seven develop topological representations of space in which landmarks play a key role in the locations of objects. Older children, on the other hand, may rely more on Euclidean concepts in which spatio-temporal relationships, rather than proximities, between objects are represented. Indeed, preschoolers benefit from active exploration, in that it allows them to attend to salient topological cues in the environment (Feldman & Acredolo 1979). The advantage older children have in applying Euclidean concepts is that they are not bound by landmark cues; thus active exploration is not as crucial in their developing a cognitive map of a geographic location. Older children can therefore acquire geographic knowledge without the necessity of actively 'walking through' the environment.

In recent years, some developmental theorists have joined forces with certain cognitive scientists in attempting to understand very young children's spatial cognition. Influenced to some extent by this cross-disciplinary fertilisation, various camps of developmental theory now seem to agree, in general, that children begin to construct cognitive models of reality from a very early age, and that some form of stagewise development occurs in the formation and elaboration of these cognitive models. They differ in the extent to which different forms of cognitive development are 'ganged' together, whether transitions between developmental stages are discreet or continuous (Blades et al. 1998), 'break points' between discrete stages (DeLoache 1989), the relative immutability or reversibility of stages (Gardner 1991; Stea & Blaut 1999), roles played by different forms of social facilitation

at various stages (Azmitia & Perlmutter 1989; Mead 1934; Vygotsky 1962) and effects of learning or instruction upon the transition from one developmental stage to another (DeLoache 1989; Stea 1997).

Some of the differences involve research methodology (Newcombe 1985), such as the possible dependence of conclusions concerning developmental progressions in spatial cognition upon the nature of specific tasks posed to the child (Dow & Pick 1992; Huttenlocher, Newcombe & Vasilyeva 1999), or upon the physical scale of the stimulus material presented (Blaut & Stea 1995; Stea & Blaut 1999). More will be said about this later. Perhaps most strongly in the area of verbal responses, results obtained in spatial cognition studies with very young children can be extremely sensitive to the specific nature of the instructions given. In addition, differences between young children's and older children's reported levels of spatial cognition may also be due to limitations in the kinds of space young children are allowed to explore. Young children have greater geographic knowledge of environments with which they are most familiar, so that responses to studies conducted in the children's home can be expected to be different from those obtained in a laboratory setting.

The foregoing not withstanding, it is the development of spatial cognition itself, or the capacity to form cognitive maps, that has been particularly contentious (e.g. Liben & Downs 1992; Blaut 1999). Some of this controversy was reviewed in Stea and Blaut (1999). Part of the difficulty stems from the painfully obvious fact that we can observe directly neither cognitive maps nor their development: we have no neurophysiological means of entering the child's brain unobtrusively, of 'observing maps in the head', nor is it likely that we would recognise evidence of emerging cognitive mapping abilities if we could. In short, we cannot read their minds. We have, in general, only verbal and non-verbal overt behaviour to go upon, much of it examined in contrived, experimental settings.

Perhaps the difficulty of accessing (and assessing) cognitive mapping is related:

> ... to the meagre knowledge that exists about the development of imagery. Although the construct of mental imagery has played a central role in

> psychological theory and especially in theories of cognitive development... we still know remarkably little about the developmental course of mental imagery abilities. (Estes, Wellman & Wooley 1989, p. 85)

We are now quite certain that spatial cognition begins to appear very early in the developmental sequence (e.g. Acredolo 1977), and there is some theoretical basis to consider this as fundamental to appropriate development of all organisms and as evolutionarily adaptive (Ardila 1993; Blaut 1991; Stea et al. 1997). The spatial cognition of children has been measured using several indices, one of which is the ability to read and, at least in some basic aspects, to understand aerial photos. A second index involves perhaps the most ubiquitous of all children's behaviours: play.

## The role of play in geographic learning

> Young children are natural map makers. We adults call their creations 'pictures' and put them on the refrigerator, but they are maps to the extent that they show important physical and emotional landmarks, and in one way or another show a particular perspective of that child's world. (Garrett 1996, p. 5)

Play is an important part of childhood learning about the multiple environments children inhabit and with which they participate. It is representative of those universal actions described by Lowenfeld, in the plural, as 'activities in children that are spontaneous and self-generated; that are ends in themselves; and that are unrelated to "lesson" or to the normal physiological needs of the child's own day' (Lowenfeld 1991, p. 23). Play as a field of research has grown and matured significantly in the past eighty years, as evidenced by the increase in play literature citations from six in the 1900s to 200 in the 1970s. Psychology has been the primary research umbrella, with anthropology and sociology making important contributions toward understanding the role of play in the social, physical and psychological development of children (Sutton-Smith 1985). While geographers have been extensively involved in understanding how children understand and operate within their (interpreted) individual spatial environments (Golledge et al. 1985), geographic education,

as a field and as a perspective, has been largely – and notably – absent from the arena of play research.

Play has a profound impact on intellectual and cognitive development, contributing to more complex cognitive behaviours which in turn contribute to the increasing complexity of the content of play. This, in turn, nurtures continued intellectual development (Athey 1984; Wyver & Spence 1999). The realm of play is enriching, serving as a 'pool of experience' where children store a wealth of information gleaned from the physical and cultural world in which, in participatory fashion, they manoeuvre. From this 'pool', a child extracts bits and pieces to use in play activity, re-enacting an experience or rearranging the information and reordering the experience.

Play, as part of cognitive development, serves four functions: it (1) provides access to increased venues of information; (2) aids in consolidation of skill and concept mastery; (3) promotes creativity through skill and concept use; and (4) enhances development of cognitive operations (Athey 1984). According to Athey, play also contributes to language, social and emotional development. It provides a safe environment in and through which children can share their feelings and ideas, develop and rehearse social skills and form peer associations. Pretend play enables development of **divergent** problem solving, 'the cognitive ability to solve problems which have multiple possible solutions'; constructive play seems to facilitate the development of convergent problem solving, 'where information must be processed in a particular way to reach a single, correct solution' (Wyver & Spence 1999, p. 422).

Olds (1987) subdivides the play of toddlers and infants into five types: gross motor play; structured play involving manipulative toys; quiet play; discovery play; and dramatic play. These categories can be extended into the play of childhood, adolescence and adulthood, with the type and focus of play (and discovery objects) changing from an infant's fingers and toes to the Lego, building blocks, toy houses and cars of the child; from the freedom-giving bicycle of early adolescence to (in the USA) the automobile of later adolescence; and in adulthood, from pencil-and-paper cognitive mapping to computerised GPS systems. The scale and focus of play changes, the process of learning about new 'environments' does not.

Children's play is dictated and modified by the physical geography of

the play area and by the human geographic context in which play occurs, the cultural, social and economic factors that directly impact the child's environment and define its content and context (Ariel & Sever 1980; Westland & Knight 1982). Outdoor exploratory play provides the experience and framework for children to develop a sense of place, an understanding of the spatial organisation of their physical environment and a knowledge of place (Hart 1979). The understanding of environmental spatial organisation is related to the free roaming range a child is allowed to experience, which is age, sex and caretaker dependent. In most cultures, older male children are allowed more latitude in exploration and range-extension, enriching geographic experience (Hart 1979; Westland & Knight 1982; Aitken 1994).

Toy play can open up the world of exploration for younger children, who are confined to the closer quarters of home and whose roaming range is limited. Toys are both symbols and tools. Toys as symbols communicate definite meanings of representation to children. Toys as tools enable children to express individually their imagination and emotion (Kline 1995). Playing with landscape-feature toys and models is a mechanism by which to understand the surrounding environment(s) and a method of communication of a naïve geography. Information accumulated and cataloged by the child as he or she travels with older children and adults can be expressed, filtered and re-arranged in toy play.

## Play as index and play as enhancer of cognitive development

Landscape-feature toys (model vehicles, structures, trees, shrubs, lightposts, traffic signals etc.) have been used to translate and measure children's geographic understanding, in order to circumvent the sensorimotor and linguistic limitations of children younger than five years of age (Blaut & Stea 1974). Landscape-toy play can be considered a primitive expression of knowledge of geographic site and situation: children place groups of houses to create neigbourhoods or towns and then obliterate them to make way for a modelled shopping mall, or generally redesign their miniature landscapes. If formal maps can be considered spatial essays, then children's toy landscapes are imprecise spatial précis.

While much research on geographic and environmental 'modelling' has been reported elsewhere, some major findings bear repeating in the present context. Blaut and Stea (1974), for example, demonstrated that at least some children as young as three are capable of making the perspective transition from a very limited ground-level observation position to an all-encompassing overhead observation point, an orthogonal transformation. They also are capable of scale reductions, of representing a much, much larger environment within the 2′ x 3′ area allowed for construction. Both of these carto-syntatic transformations and translations require a cognitive template, prior knowledge and organisation of spatial information. Piñon et al. (1999) found that four- and five-year-old children experience little difficulty in rotating perspective. In that process, children created both map-like objects of macro-environments and symbolic representations from their 'cognitive atlas'. They have little difficulty navigating through the model, 'driving' a car from point A to point B on a landscape model roadway/house maze. However, while in a research setting these children could create, quite reliably, maps in the form of 'toy landscape', the younger ones (threes and early fours) did not possess the verbal skills to explain their creations in words. The younger children who had difficulty in verbally defining their creations, however, improved with age in skills of labelling and definition.

It was once believed that aerial photos and landscape models were more-or-less substitutable indices of spatial cognitive development. However, the assumption that the latter, directly related to toy play, is universally more useful than the former at early ages (when verbal probes could be hampered by children's very limited vocabularies), has been called into question. Not only are the abilities of very young children (below age three) to respond to these two indices not co-equal: some studies suggest that at such young ages, the temporal order of their utility may be the reverse of that previously supposed. A superordinate issue seems to be: when does the child at play begin to conceive the model landscape he or she is building as a representation of the real world? In other words, when can the child understand that an object can be a thing in itself and at the same time represent something else? Dow and Pick (1992) suggest that it is more difficult for 2.5-year-olds to use a model than an overhead photograph of either a room or its model, in order to solve

a room-scale spatial search problem: the model is too 'real' for the child to treat it, for problem-solving purposes, as a representation of the room. DeLoache (1989) reported similar findings, but emphasised the (possibly) culture-bound nature of the study setting:

> The ability to think of one thing in two ways is an important aspect of early symbolic development. In Western cultures, where so much of a child's learning occurs via various representational media, this is a crucial step. (DeLoache 1989, p. 36)

Another issue concerns one more product of children's play: acquisition of scaling abilities (distance coding). Here, too, while it seems that skills relevant to later, more advanced forms of spatial learning emerge at surprisingly early ages, the results again appear to be sensitive to the nature of the task. Basing their research on previous work of Bushnell et al. (1995) on one-year-old infants, Huttenlocher, Newcombe and Vasilyeva (1999) found that four-year-olds and even most three-year-olds could locate an object in a considerably larger space using a simple map, concluding:

> It is often argued that scaling requires proportional reasoning... Piaget and Inhelder (1967) argued that proportional reasoning does not arise until 10 to 12 years of age ...We propose that scaling does not require proportional reasoning in the same sense... (Huttenlocher, Newcombe & Vasilyeva 1999).

Huttenlocher et al. argue that that the key difference is the nature of the spatial setting: proportional reasoning is not necessary for infants and toddlers to be able to engage in distance coding in tasks involving enclosed spaces. However, it should be noted that scale may once again be critical here. The results obtained by DeLoache, Huttenlocher, Pick and their associates were derived from studies done with meso-scale spaces, at the scale of a room or smaller; the use of models versus aerial photographs to assess spatial cognition (e.g. Blaut & Stea 1974) has been subject to much less-detailed scrutiny.

How does spatial cognition continue to develop at school-entering age? Past research was done with children at a slightly later stage of development

using aerial photograph recognition tasks. The results suggested that at least one kind of spatial ability, that of aerial photo recognition, had already reached a high level of development at school-entering age and began to plateau at the age that educators believed it was ready to begin (Stea & Blaut 1973). There has even been a suggestion of actual *decrement* in map-reading ability in the later primary school years, a suppression of spatial abilities as children move through the primary school curriculum (Carswell 1971). Such a decrement, if it exists, is presumably due to an overwhelming emphasis upon verbal communication of almost all information to the child, particularly in school. Recent research by Huttenlocher (1999) suggests that differences in findings may be an artefact of the time of the school year during which testing occurs.

## Directions for future research

Toy-play research in the industrialised world has focused on setting objects that are considered to promote constructive behaviours and culturally acceptable behaviours against those toys that would seem to promote aggressive play or hostile behaviour (Goldstein 1995; Kline 1995; Bagley & Chaillé 1996). The function of toy and leisure play (from children's landscape-feature toys to adults' low-end GPS units) in spatial cognition and geographic learning has been studied but little. It is important to understand an issue previously raised in this chapter: when does the child at play begin to conceive the model landscape he or she is building as a representation of the real world? We need to understand the acquisition and sequencing of children's scaling abilities.

More research is needed to clarify the impact of culture and physical geography on landscape-feature toy play and landscape modelling of children and their interpretation of their landscape model. While Stea, Blaut and Stephens (1996) maintain, and provide evidence, that mapping is an ability present in all cultures and through collaborative research have demonstrated that 'reading' an aerial photograph is a cross-cultural skill, some questions remain. How, for example, do children cognitively 'jump' in describing or labelling a geographical-scale environment never experienced or seen except through representational media? In today's high-tech realm, what is the

impact of early computer/Internet use on children's spatial cognition and their carto-syntactic transformation skills? It is a demonstration of a wondrous human skill that children are able to make sense of and organise the maze of the larger world beyond their doorsteps at a stage when their noses barely reach the level of a kitchen countertop.

Other needed research involves differential effects of environmental differences, in particular differential impacts of environmental experience of urban and rural children, of flatlanders and 'mountaineers', of childhoods spent in coastal and inland places. Another major area, by no means neglected but certainly in need of further attention, involves differences among children themselves in capacity for spatial cognition and propensity for geographic learning. Here, we are addressing not the psychologist's much-vaunted 'individual differences', but rather differences among intact, 'natural' groups. A particularly thorny question concerns the contributions of one's biological sex and gender identity in shaping this growth. This continues to be a subject of research, and of dispute. For example, are gender roles inborn, leading, inevitably, to gendered modes of learning? Those who view gender roles as genetically or congenitally formed see no influence of pre-school experience upon engendered learning. Their critics have challenged the supposed irrelevance of pre-school experience, suggesting, in this context, that gender roles are socially and culturally, rather than biologically, conditioned. This has provided a new basis for the study of spatial and environmental learning.

## Concluding remarks

The suggestion that the ability we refer to as spatial cognition is an important way of representing and using certain kinds of information has not by any means been lost on educators. In a popular mid-1960s article, Balchin and Coleman (1973) added to the essential primary-school skills of reading, writing and 'rithmetic, *graphicacy* ...

> concerned ... with spatial relationships, as in maps. (Graphicacy) also uses spatial relationships ... to portray other kinds of relationships ... Just as geography plays a role as a bridge subject between the arts and the sciences, so graphicacy spills

over into literacy on the one hand and numeracy on the other without being more than marginally absorbed in either. It is interdisciplinary without losing its own identity as a distinct medium of communication.

It is hoped that ... graphicacy and ingraphicacy will be taken up and developed by educationists ... Perhaps the most graphicate group of educationists, the geographers, will regard this as their particular challenge. (pp. 83–85)

Over the past third of a century, at least some geographers, geographic educators and environmental psychologists have indeed taken up the challenge. Forsyth's (1995) bibliography lists more than 250 research studies in spatial and map learning published since 1970, and more publications have appeared since. While behavioural scientists debate between and among developmental theories, children themselves, as indicated in this review – boys and girls engaged in play as well as in formal classroom learning – continue to demonstrate the importance of spatial learning and the way in which it applies to various aspects of their expanding lives.

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**Acknowledgment**

The preparation of this chapter was supported in part by Research Grant No. 9906418 from the United States National Science Foundation.

11

# On class-teacher students' views of the future

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## Introduction

*The globe has two options, and two only: it will either be destroyed or saved. I have been wondering what I would see if I returned to the globe, let's say, in the year 2200. Would I see ruins battered by nuclear war? A black country where nothing could live any longer and would never live again. Where the creation of the world would go from the end to the beginning, the last seven days would have begun, and humans would have mercy-killed the planet Earth which they had, for so long, been torturing.*

*What would I like to see? That people have returned to somewhere in past decades and centuries, and that they live as a part of nature, not as its master. Not even electricity would be needed. It would not be aesceticism, nor a way of living supposedly respectable because of its difficulty. I believe that living that way would make us much happier. We would not need to search for meanings by destroying ourselves with chemicals, and by looking for dangers, but life would be real.*

Thus one Finnish student-teacher described his image, fears and hopes for the future at the turn of the millennium. I have followed the writings of researchers on futures studies for some years, and that made me wonder about the kinds of images of the future those students have who have recently completed their school career, and who will shortly be returning to schools as teachers. Presumably, it is their own images that will determine how they will

deal with the topic in their work, and thus also the ways in which their students will be directed to the future.

It has been argued that at the turn of the millennium we, at least in the Western world, are in middle of a period of social, cultural, technological and economic transition. The Finnish society has been evaluated as being at a late-industrial and late-modern transition stage (Rubin 1998). On an individual level this transitional period means that people have been freed from many institutional ties, and life now more than ever has to be built as a personal 'self-project' (Castells 1996–1998; Giddens 1991). In fact, because the development in the world is occuring at such a rapid rate, some scientists speak about 'the speeding of history' (Haubrich 2000).

In order to grow into independent personalities, the members of each young generation must, however, solve the paradoxes between the values adopted from their parents, and the changing conditions in which they live. The tone of the image of the future affects personal behaviour and decision-making in the present. These images are largely formed and affected by the media, but on the other hand, people can be taught to build positive images of the future and to exercise their imaginative capacity in this respect (Remes & Rubin 1996; Rubin 1998). In order to master the unexpected situations, future generations need a general and geographical education which stresses key skills more than in the past (Haubrich 2000). That is not an easy task, because many research outcomes (see Kirchberg 2000) tell us that students are becoming more selfish and egocentric, more results-oriented and change their interests often; they are less idealistic and less concentrated. But, on the other hand, they are more independent and open-minded, as well as more keenly interested and well informed.

Anyhow, it is important for young people to construct as positive an image of the future as possible. Previous research findings in Finland have indicated that there is a clear connection between the tone of the images, and young people's ideas of their own possibilities of affecting the future (Kasurinen 1999; Rubin 2000). So, this connection is strongly linked to school education. In the spatial dimension, teaching can help students to understand the world from the personal and local levels to the global level, all of which are closely connected, to the goals of geography teaching. In the temporal dimension, on

the other hand, teaching adds to an understanding of the world by exploring the world in the past, present and future. By becoming familiar with all these dimensions, a person can understand the continuity of life and the way in which phenomena of the past can influence future realities.

## The study

This chapter presents the results of an analysis of the content of young Finnish students' (N=50) images of the future. The subjects were students of primary-school education in the Department of Teacher Education at the University of Helsinki. The data were collected by the researcher during the first lesson of a geography course. The instruction was as follows: 'You are my last student group in this millennium, and I am very interested to know how you see the future or the next millennium. Please outline your ideas by writing or drawing on the papers I have given you. You have 15 minutes in which to do this.' After that, the students also answered the questionnaire.

How is this kind of research useful for classroom teaching?

Education is inevitably a futures-oriented action, and teachers are already in the 'future business', whether they realise it or not. Thus, the crucial questions are: How can we effect the realisation of a future we desire, and how aware are we, as teachers, of this possibility? 'If you want to change the world, then tell the kids first,' cite Beare and Slaughter (1993, p. 18) to their teacher friend. Therefore, it is important to get student-teachers to think independently about the kind of image of the future they have.

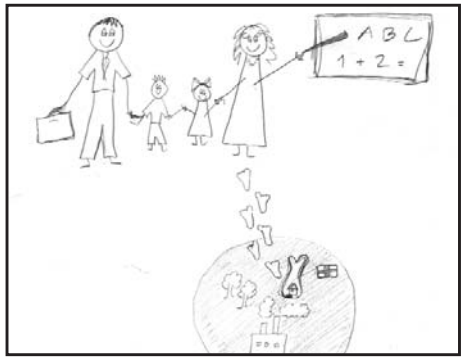
## The views of the future as research material

The views of the future created in free form – either written or drawn – can be categorised in several different ways. The content can, for example, illustrate the possible, the probable, or the preferable futures, the last of which contains both desired and undesired futures. Alternatively, or by simplifying, the content can also be categorised according to its definer's point of view: what kind of vision would be the most agreeable, what would be sufficient, and what would be the worst possible alternative (Hicks & Holden 1995; Mannermaa 1991)?

As the writing of the student quoted at the beginning of the chapter shows, one description can include different types of wishes; in this case both possible images and strongly value-bound wishes. It can be assumed that the probable and possible images of the future, or parts of them, are based on the knowledge in the minds of their definer, while the definitions of preferable visions are always coloured by values (Mikkonen 1998). The content of the wishes can also illustrate an individual's emotional thinking, 'dreams of something', and they thus can be contradictory to one's realistic knowledge. Dreams, on the other hand, are always a part of youth, and therefore it is presumable that the images of the future under examination contain many contradictory definitions.

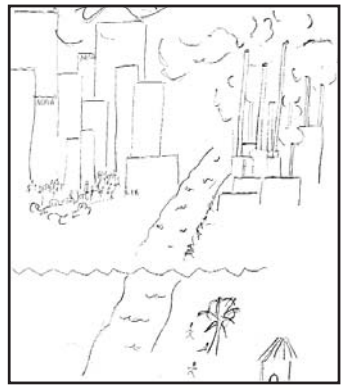
The students' images of the future can also be classified on a scale from positive to negative (see Figures 1 & 2). The relevance of this lies in the understanding that the attitudes of an individual are seen in his or her actions. There are, however, widely differing opinions among researchers about what is, after all, the connection between attitude and action (Mikkonen 2000). For example, a person's optimism is not necessarily believed to reflect his or her belief in his or her own possibilities. According to research in the field, however, knowledge has a central role in building attitude, and the knowledge gained by education strengthens the belief in one's own possibilities for action. It is interesting to consider whether the images of the students present neutral, optimistic or pessimistic attitudes towards the future, and whether they reveal the students' beliefs in their own possibilities for taking action.

*figure 1*




An example of a positive view of the future concentrating on a personal view. By focusing on family lifestyles, this student adopts a personal view of the future strongly linked to technology.

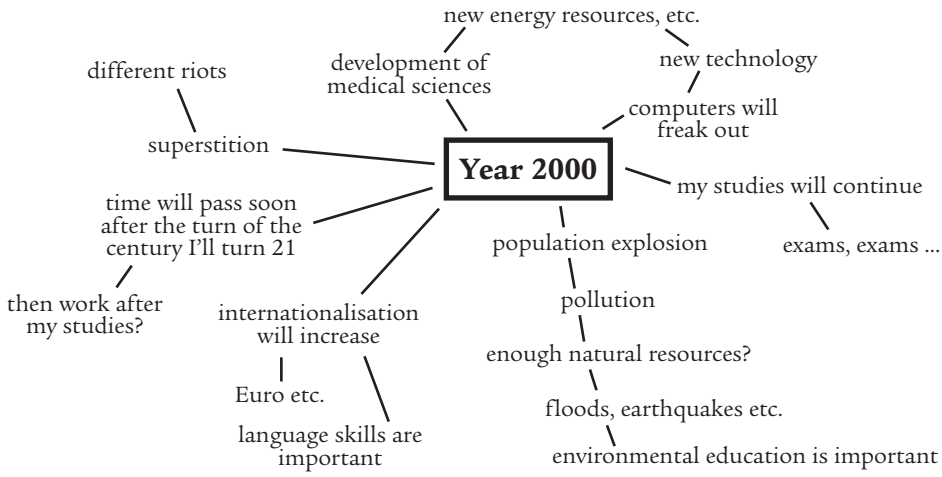
*figure 2*



An example of a strongly negative image of the future. This student stated: 'I hope that when I am a teacher I will remember that people can change. I would like to be an example and an inspiration'.

Another possible categorisation of the images of the future is according to time and place (see Figure 3). Do the students place their images of the future in the near future, over a little longer time span, in the whole next millennium, or maybe in an even longer time period? The time perspective was already being discussed in the well-known book *The limits to growth* (Meadows et al. 1972). According to the authors, people are most concerned about what happens to their own families and to their friends within the following seven days.

*figure 3*

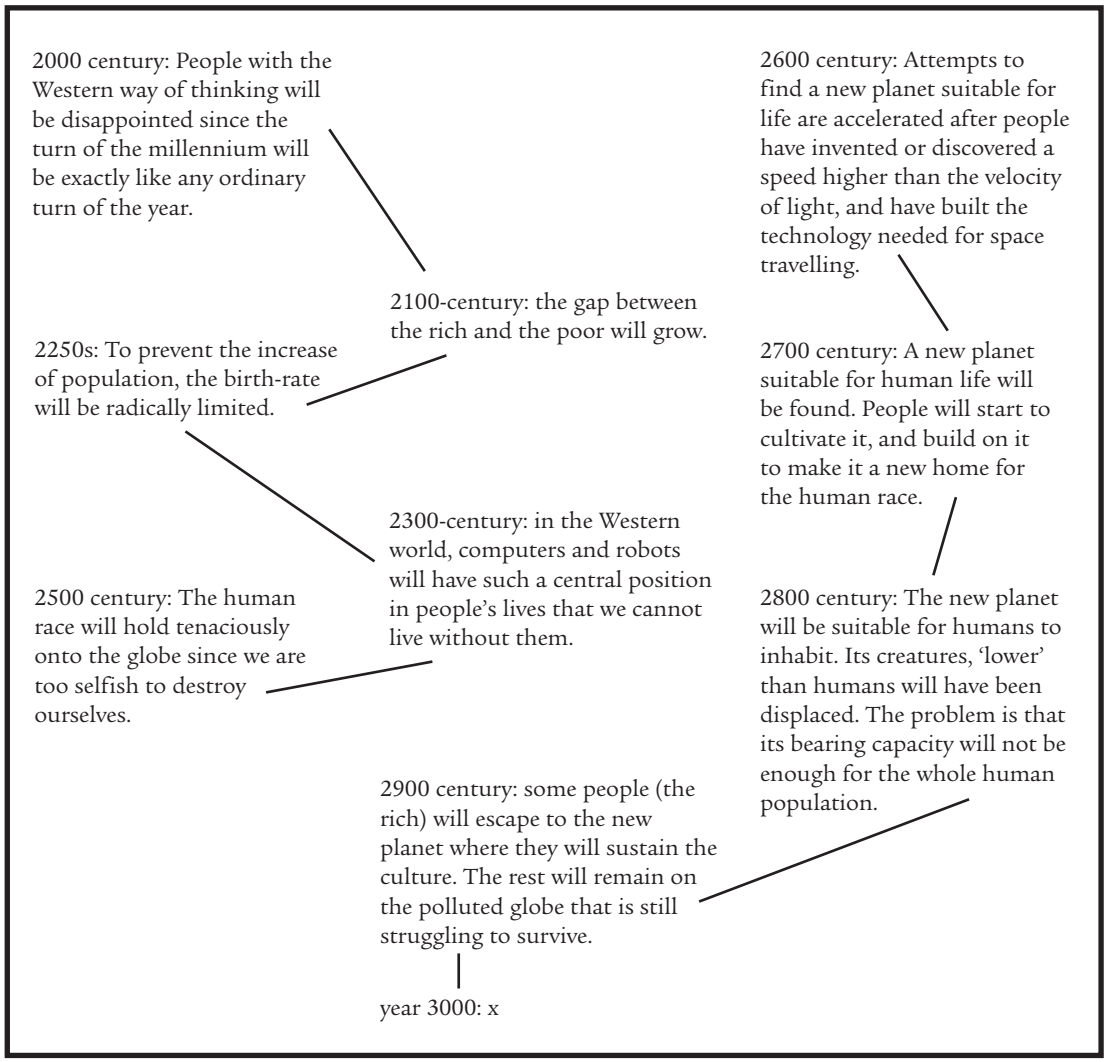



An example of a student's image of the future in the form of a mind map. The time perspective is from the turn of the millennium.

## Examples of the students' images of the future

Students' images of the future created in free form contained twenty-nine written compositions and twenty drawings, two of which were mind maps (e.g. see Figure 4). Considering the time dimension, a few students concentrated on the near future and a few browsed through the whole third millennium. The majority, however, chose the perspective of their own life span, or, at the most, a few centuries into the coming millennium.

*figure 4* ***An example of a student's image of the future covering the whole of the next millennium.***



The attitude of the images was generally global. Most of the images were technology-oriented, and they centred on the consequences – both positive and negative – of technology for human beings and/or the environment. Some students quite neutrally listed matters on the basis of the present situation. Three answers clearly concentrated on Finland. Some answers mainly charted a personal future such as the following:

> I am going to live in a detached house in the countryside near Helsinki. The area is peaceful, and close to nature, which will still partly exist. The 'intelligent phone' will work as a multipurpose tool, and everyone will have one. It can be used for making phone calls, sending mail, doing shopping, paying the bills, and surfing the Internet. It has everything one needs: credit card, library card, etc. It is small and flat. The borders between the countries will be dispelled.

In general, the tone of both the writings and drawings was slightly hopeful. Students were evidently aware of the threats toward nature, and they mentioned these, but they also believed in the possibilities of changing the direction of development.

> The future appears to be bleak, at least in the short term. As a person with a primarily positive attitude I believe that an 'awakening' will happen.

Despite the optimism, most of the images of the future appeared to be unstable, and even frightening. There were also strongly negative images:

> I myself don't cheer. I feel more like I'm sitting in a sinking ship ... The world economy will collapse, and our spiritual bubble will burst.

It is positive, however, in that many students had a clear understanding of the importance of their future profession as teachers:

> I can only hope that the state of the world will not go downhill any more ... This requires greater and greater openness from me as a teacher, as well as the ability to encourage children, to sustain the features of my own national identity, to get along with others, and to learn from them.

## Life in the future

After freely outlining the future, the students were asked to comment on statements about life in the future. In general, the results show that on average the students faced life in a realistic way, even though there is notable dispersion in the views at certain points (see Table 1). The students did not believe that successful people would never face difficulties in their lives. They were neither fatalists, nor did they believe that success required above-average intelligence. They felt that being successful did not depend on pure luck, but was an intrinsic, life-long project.

*table 1*

| STATEMENT | MEAN | SD |
|---|---|---|
| 1. A successful person is happy | 2.8 | 0.97 |
| 2. In becoming successful, only hard work is needed | 2.7 | 0.97 |
| 3. Successful people have status. They are famous | 2.6 | 1.27 |
| 4. Only intelligent people can succeed | 1.6 | 0.82 |
| 5. Successful people do not face difficulties | 1.1 | 0.33 |
| 6. Successful people have just had good luck | 1.9 | 0.82 |
| 7. Successful people have been determined to succeed, losers determined to fail | 1.3 | 0.55 |
| 8. A successful person is not lazy: idleness is not good for you | 2.3 | 0.90 |
| 9. A successful person sails with a fair wind | 2.7 | 0.93 |
| 10. A successful person finds favourable channels | 3.7 | 0.77 |
| 11. A successful person does not choose the easy way out | 3.4 | 1.07 |
| 12. A successful person wins the headwind | 3.9 | 0.99 |
| 13. Succeeding is an intrinsic, lifelong project | 4.0 | 1.06 |
| 14. Even intelligent people can be 'stupid'. | 4.6 | 0.91 |
| 15. A degree as such is not enough for a person to manage professional tasks | 4.7 | 0.55 |
| 16. Personality, risk-taking and flexibility are trump cards in working life | 4.3 | 0.80 |

*table 1, continued*

| STATEMENT | MEAN | SD |
|---|---|---|
| 17. Networking and teamwork require social skills | 4.3 | 0.87 |
| 18. Employees need to get used to being evaluated and controlled | 3.6 | 1.07 |
| 19. Respect for a person does not depend on his or her position in working life | 3.7 | 1.18 |
| 20. Self-knowledge and self-criticism belong to a critical way of thinking | 4.4 | 0.70 |
| 21. Only a self-directing person can be critical | 3.1 | 0.99 |
| 22. An individual is responsible for his own future himself | 3.7 | 1.06 |
| 23. Society will not provide a working career that lasts to retirement | 3.3 | 1.21 |
| 24. I believe I will be placed on the labour market in the future | 4.7 | 0.71 |
| 25. I will achieve a better position in society than my parents | 3.4 | 0.93 |
| 26. Computer, mobile phone and e-mail will belong to my work | 4.3 | 0.79 |
| 27. People of the present day create their own fortunes | 3.5 | 0.86 |
| 28. Individuals set and work towards their own goals | 3.3 | 0.87 |
| 29. The availability of information is still a privilege for elite groups | 1.9 | 1.15 |
| 30. The expectations of the adults close to me affect the decisions I make | 2.5 | 0.97 |
| 31. One's parents can be positive examples and models | 4.5 | 0.73 |
| 32. Parents' support is primarily important in choosing a career | 3.2 | 1.12 |
| 33. The effect of my peers has been important to me in choosing my career | 2.1 | 1.06 |
| 34. Hobbies, and the way I have spent free time, have affected the career I have chosen | 3.6 | 1.29 |
| 35. Chance has played a significant role when I have planned my life, and chosen my career | 2.7 | 1.18 |

The students' (N=50) comments for the given 35 statements on a five-level Likert scale (1='totally disagree' to 5='totally agree').

In the students' opinion, 'intelligent' people also do stupid things, and a mere university degree is not a guarantee for survival in professional life. Despite this, the students strongly believed that they would find jobs in a labour market where the mastering of electronic communication, as well as critical thinking and team work, were required. The answers varied greatly in regard to the role of society in providing a working career up to retirement, and to the availability of information.

## *Possibilities, threats and risks in the future*

After the statements, the future orientation of the students was specified with given alternatives for the future. The respondents were encouraged to choose among given alternatives their own points of view, and how they wished to act, or felt capable of acting, in the future.

### Possibilities

Concerning the possibilities, the alternatives given to the students were as follows:

1. The point of view of one who takes the back seat, the one who observes others.
2. The point of view of a creator of the future. You outline development, and you think it is worth working for.
3. The point of view of one who prepares for threats.
4. The point of view of one who seizes upon opportunities.

The given alternatives clearly inspired the students to offer comments, to ponder different alternatives and to explain their final solutions. It was interesting that all four alternatives received support. The majority felt they were creators of the future, while the alternative of preparing oneself for the future was least favoured. The following are some examples of the explanations:

> My choice is the point of view of a creator of the future. It is the big idea of a small soul that I will give my life meaning, by initiating something special. Many would say that the society equalises everything and everyone into a grey mass, and one cannot escape from it. But I do not agree. There are people who

> have started both big and small things. It may sound naïve, but I am going to join them. A small thing to one person can be big to another. I am ready to work, since work is what is required. I believe it will be rewarded. There is plenty of goodness left, and it will help on the road forward.

Many other 'creators of the future' also believed in their own potential, and were conscious of their own responsibility for the future. They were willing to act in society, not just to float along. Many used a positive tone to express their wish to do their share, not just for their own good but for the good of the whole world, and for the future of humankind. Someone stated that one needs to put effort into finding his or her own way; a vision alone is not enough. It is pleasing to see how many students connect their beliefs in the future with the teacher's profession, as the following quotations illustrate:

> ... in my opinion, those who work with children make the future.
> ... I am taking part in developing the future since I will qualify as a teacher and do educational work among the future generations.
> ... the wish to affect the way the future is shaped is one reason to educate myself to become a teacher.

Those who chose the third alternative stated they did not like being disappointed, and that therefore it was better to be prepared beforehand for things not going the best possible way.

**Perceiving change**

> ... the only thing we can be sure of is change – from chaos it is possible to create a better order.

Change is nothing new in the history of the human race. Still, during the past few decades, the increasing speed and multiplicity of the change has been surprising. In this study, the way the students perceived change was elicited through three different models:

1. Change as a continuous growth that proceeds linearly.
2. Four waves which illustrate that different phases occur simultaneously in society.
3. A formless zigzag line. The future is unpredictable and dynamically changing.

Many of the respondents commented on all three models when they explained their choices. In the end, however, most of them selected the last alternative. Alternatives 1 and 2 were selected equally. Those who selected linear change explained their choice with past events: 'because, on the basis of the history, it is also possible to tell a lot about the future'.

On the other hand, those who chose the second alternative also referred to history: since everything has followed a certain pattern thus far, there is no reason things should not follow the same pattern in the future as well. A strong centralised organisation, however, bothered some respondents.

Those who chose the most popular alternative, alternative 3, explained their choice with the fact that a chaotic future leaves room for one's own choices.

> The zigzag-line illustrates my own image. The future is chaotic, which means it presents opportunity and challenge. This means that I myself have the opportunity to affect my own life.

**Lifestyles and identity**

In earlier times, people were born into their positions in society, and they stayed there. Today we can take up and give up identities almost as easily as changing clothes. The postmodern individual does not wish for a permanent identity (Bauman 1998). The discussion on identity can thus never be resolved. It is a process that we live.

The last section in the questionnaire was connected to this topic. The given four alternatives were mainly based on Bauman's definitions of identity:

The WANDERER studies the road signs, but is uncertain about where and when to pull over. The wanderer enjoys places like shopping centres, and spends lots of time in such places.
The VAGABOND has no goal, and craves chaos and disorder. The vagabond's trail and 'appearance on the spot' are not determined beforehand.
The TOURIST is like a vagabond in longing to get on the road.
The GAMBLER does not see the world as predictable and organised, but navigates around and takes risks. For the gambler, it is important to be one step ahead of the others.

Many of the respondents found in themselves a little of each alternative, and they found it unnatural to categorise themselves into one given alternative only. This is illustrated in their responses below:

> The expressions are apt. In myself I recognise features from here and there. The Tourist, however, is the one which best describes my own life, even though nowadays I am also sometimes the Gambler.
>
> I am a Vagabond, and I believe most people have this identity. The Wanderer has to plan his life beforehand. I would not dare leave everything on a hit and miss basis. The Tourist gives a hard-working impression, but I doubt he really gets anything done. The Gambler: the speculator on the stock exchange.
>
> I myself am a Tourist. The Wanderer is in too much of a rut, the Vagabond does not have enough goals in his life, and the Gambler is too daring.
>
> I myself would be in between a Tourist and a Gambler – having a goal but also taking risks when sailing new and unknown waters. One needs to understand the world before she can make choices – and preferably be one step ahead.

## Conclusion

At schools, teachers are in a central position to develop young people's belief in the future. However, the road signs in the lives of future-oriented young people are not magic tricks written in a study book, or steps leading to a certain desired goal. There are educational manuals, and literacy, which the students involved in this research have certainly mastered, is all that is required in order to read them. Traditional teaching at schools, and so-called

'school teaching', both rely on the belief that books contain the truth and that there are always correct answers to questions. This connects the action more closely to the past than to the future. However, creative, independent thinking directed to the future does not develop through answers but through questions. The central idea is that the students get help in evaluating their own potential, dreams and aims; that is, that they reflect on the future and themselves as a part of it. This was the aim of the questionnaire.

In order to become good at instructing children, the teacher must yield to the process of choosing, of pondering on alternatives with different values, and of evaluating the consequences of different choices. The results of this study show that at least these student-teachers are ready for all this. Their answers reflect a belief in the future and in their own potential for acting as creators of the future. Their visions are not unrealistic dreams, but well-reasoned selections. The main idea behind future-oriented thinking, as the researchers point out, is to communicate with oneself, with one's environment, and with the whole world.

The possibilities for futures' education should be acknowledged to a greater extent in teacher education. We know, after all, that there is no one single future for which we can train everyone. It is possible to learn and to practise controlling change, as well as the ability to live in a continuous state of transition. Dalin and Rust (1996, p. 59) state aptly: 'We need a vision of what we wish to happen, and we must do what we can to make it happen'. The same idea is repeated in the following writing of a Finnish student:

> It is a great privilege to live during the turn of the millennium. The future is often blurred and difficult to control, but the same can be said about the present. We need visions and planning for the future ... This applies equally well to both the individual level and the communal dimension.

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12

# Children's knowing through map constructs of 'their' world

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## Background and education

The executive of the International Cartographic Association (ICA) in 1993 created the Barbara Petchenik Children's Map Award, as a memorial to its first woman vice-president. Barbara Petchenik had a life-long interest in maps for children (M. Wood 1995). Some of her early research was related to children, and much of her work as a cartographer was dedicated to creating maps for children (A. Wood 1995). The aim of the Petchenik award is to promote 'children's creative representation of the world'. It consists of a certificate presented by the ICA to a number of children under sixteen years of age for 'world maps' they have constructed.

The first competition took place in 1993, the year after Barbara Petchenik died, with the Award presented in Köln. Although organised at very short notice, twenty-seven countries participated in the competition, at which seventy-seven maps were displayed and ten awards presented. Subsequent competitions have been held every two years in conjunction with an ICA General Assembly. At Barcelona in 1995, 125 maps were submitted by

twenty countries and ten awards were presented and, at Ottawa in 1999, eighty-seven maps were submitted by nineteen countries, where eight awards were presented. At the ICA Technical Conference, held in Stockholm in 1997, ninety maps were submitted by nineteen countries and eight awards were presented (Anderson 1999; Kuyvenhoven 1999).

Across the four competitions of the Barbara Petchenik Children's Map Award held between 1993 and 1999, there were a total of 380 map submissions from forty-three countries. The nationality of the authors of the thirty-six winning maps, together with their age, the title of their graphic and a number/letter designation appears in Table 1.

*table 1*

| CODE, COUNTRY, AGE | TITLE OF MAP CONSTRUCT | CODED THEME CATEGORY |
|---|---|---|
| **1993 – Köln Competition** | | |
| 1993W1 Brazil (11) | Standing up the hill | Peace & Conflict |
| *93W2 Hungary (15) | No smoking | Environment |
| 93W3 Indonesia (12) | Untitled | Culture, Landmarks/Features |
| 93W4 Japan (13) | Green land | Environment, Landmarks/Features |
| 93W5 Lithuania (11) | Peace in the world | Peace & Conflict, Landmarks/Features |
| 93W6 Romania (15) | Untitled | Peace & Conflict, Environment |
| 93W7 Slovak Republic (13) | Children around the world | Peace & Conflict, Culture |
| 93W8 Sri Lanka (15) | Head, Ship, Tree | Environment, Peace & Conflict, Culture |
| 93W9 UK (14) | Greetings from the world | Peace & Conflict |
| 93W10 USA (11) | The horse population of the world | Culture, Environment |
| **1995 – Barcelona Competition** | | |
| *95W1 Australia (14) | Abstract world pap showing flags and features | Landmarks/Features |
| 95W2 Chile (5) | Untitled | Environment |
| 95W3 Hungary (14) | Solidarity | Peace & Conflict |

*table 1, continued*

| CODE, COUNTRY, AGE | TITLE OF MAP CONSTRUCT | CODED THEME CATEGORY |
|---|---|---|
| **1995 – Barcelona Competition** | | |
| 95W4 Poland (11) | We preserve the environment of the Earth together | Environment, Peace & Conflict |
| 95W5 Slovak Republic (15) | Wonderful world of a child's dream | Peace & Conflict, Culture |
| 95W6 South Africa (14) | Distribution of endangered wildlife due to environmental pollution | Environment, Landmarks/Features |
| 95W7 Spain (15), (15) | *Units per avanHar* (Unite to advance) | Peace & Conflict |
| 95W8 UK (7) | Children unite! | Culture, Peace & Conflict |
| 95W9 USA (12) | The world is for everyone | Peace & Conflict |
| *95W10 Vietnam (12) | The world map in my cone hat | Culture |
| **1997 – Stockholm Competition** | | |
| 97W1 Australia (?) | The world – Friendships really make a difference | Peace & Conflict |
| 97W2 China (10) | Bridging for friendship | Peace & Conflict |
| 97W3 Croatia (14) | Compass card | Environment |
| 97W4 Greece (12) | Bridging the continents | Peace & Conflict, Landmarks/Features |
| 97W5 Mexico (15) | A dream of a happy world | Environment, Peace & Conflict |
| 97W6 Poland (11) | Is the Earth's future going to be like this? | Peace & Conflict, Environment |
| 97W7 South Africa (15) | Sky scrapers of the world | Landmarks/Features, Culture |
| *97W8 Ukraine (10) | Together | Peace & Conflict |
| **1999 - Ottawa Competition** | | |
| 99W1 Argentina (15) | Materialism is not good for us (*Le matérialism n'est pas bon pour nous*) | Peace & Conflict, Culture |
| 99W2 Bulgaria (7) | The map of the world (*La carte du monde*) | Landmarks/Features, Culture, Environment |
| 99W3 Greece (11) | The Olympic spirit unites people (*L'espirit olympique unit les peuples*) | Landmarks/Features, Culture |

*table 1, continued*

| CODE, COUNTRY, AGE | TITLE OF MAP CONSTRUCT | CODED THEME CATEGORY |
|---|---|---|
| **1999 - Ottawa Competition** | | |
| 99W4 Guinea (14) | Torch of liberty (*Le flambeau de la liberté*) | Peace & Conflict, Culture |
| 99W5 Hungary (14) | Flower-world (*Monde dans une fleur*) | Environment, Landmarks/Features |
| 99W6 Japan (14), (14) | Let's bloom flowers all over the world (*Faison éncore des fleurs dans le monde entier*) | Peace & Conflict, Environment |
| 99W7 Poland (12) | Wild animals – Inhabitants of land and sea (*Les animaux sauvages, habitants de la terre et de la mer*) | Environment, Landmarks/Features |
| 99W8 Sweden (15) | It's a hard world! (*C'est un monde dur!*) | Environment, Culture, Landmarks/Features |

The Barbara Petchenik Children's Map Award winners 1993 to 1999 (including year [e.g. 93] and win code [e.g. W1], participant's nationality and age and construct title).

** These maps are included in Figures 1–4 as case descriptions.*

The purpose of this chapter is to focus on the thirty-six award-winning maps constructed by the children in the four competitions from 1993 to 1999. Using a phenomenographical approach in the interpretation and analysis of the cartographic characteristics, the children's map constructs are examined for personal understandings of the world. This chapter hopes to contribute general information on the nature of the themes that are considered important to children, as well as the cartographic portrayal of the information presented on their maps. It is understood that gender may play a significant role in determining the ways in which children construct 'their' world. However, it is not the intention of this chapter to address this variable, since the only clue to gender was the name appearing on the map construct. It would have been valuable also to illustrate the text with many map constructs. Yet, by chance, the four selected map constructs included for detailed description were all drawn by girls (see Figures 1 to 4). The thirty-six winning map constructs from 1993 to 1999 can be viewed online at <http://collections.ic.gc.ca/children/>

## Method of study

Two methods are used to describe and analyse the main set of map construct data. Firstly, the thirty-six map constructs are described and analysed using the phenomenographic approach to reveal the thematic messages that the children wanted to convey. Describing the world as it is seen from the point of view of the children is the focus of research in phenomenography (Bowden & Marton 1998; Marton & Booth 1997; Marton 1981 & 1993). A phenomenographic approach was chosen because it allows researchers, from a second-order perspective, to describe and interpret the children's individual conceptions and representations of the world as seen and experienced by them (Marton 1993). Secondly, the cartographic characteristics of the map constructs were analysed using modified elements developed in the work of Gerber (1981, 1984 & 1985) and Wilson (1980). The four elements are:

1. Symbolisation
2. Scale and proportion (size and shape)
3. Area presentation and projection of the map construct image
4. Distribution and location (cardinal direction and reference grid).

### *Phenomenographical analysis of the children's map constructs*

The phenomenographical analysis used to examine the children's approaches to constructing a world map, to reveal the way they see their world, is that described by Marton and Saljo (1984) and Dahlgren (1995). In brief, the interpretation of the map constructs involved the following steps:

- a preliminary grouping of the map constructs into categories
- labelling these categories, using as many terms and expressions as possible to encapsulate the descriptive characteristics of the map constructs
- a comparison of the categories to further enrich the content and description of each of the categories.

Through a second-order interpretation, the thirty-six winning map constructs (created by children from twenty-six countries) were studied to reveal the qualitative different themes that were of their concern. These themes were characterised by the qualitative differences in the way the message

was conveyed through the presentation of salient features and the use of colour. The combination of these reflected the children's positive or negative perceptions of how they saw their world. We have identified and categorised maps into four different themes, each theme exhibiting a typical message that the children wanted to convey in their map constructs. However, it should be noted that there is always the possibility that a map construct may convey more than one theme. The four identified themes are related to:

1. Culture
2. Peace and Conflict
3. The Environment
4. Salient Landmarks or Features

The characteristics of the four themes are described below to highlight each of their salient features. Examples of relevant map constructs are included in parentheses as a four-figure code. The first two figures of this code identify the year of the competition, e.g. 93 (for 1993). The year code is followed by a 'winner code'a letter (W) number sequence e.g. W1. This winner code was assigned to the winning countries, which were listed in alphabetic order. Thus 93W1 means the map construct first labelled for the year 1993. Further details of the coded map constructs can be found in Table 1.

**Culture**

Usually map constructs of this theme include children drawn in their different national costumes (e.g. 93W7, 97W5 – see also the theme 'Peace and Conflict' below); national faces (e.g. 95W8, 95W9) or a national symbolic landmark that suggests a particular country or continent such as a conical hat commonly worn in Vietnam (e.g. 95W10 – see Figure 3).

**Peace and conflict**

Usually map constructs of this theme include one or more of the following key features:

- the drawing of a dove to signify peace and love (e.g. 93W5, 93W6);
- children, frequently holding hands, to signify harmonious co-existence and friendship among different ethnic groups (e.g. 93W7; 93W9, 95W3, 95W5, 97W1);

- the deliberate connection to bring the continents together by bridges (e.g. 95W7, 97W2, 97W4), green vines (e.g. 99W6), or even needle and wool (e.g. 97W8 – see Figure 4) to signify unification; and
- there are also map constructs of this theme, which reflect a negative feeling by the use of dark colours to represent conflicts, arguments and disturbances (e.g. 93W8, 97W6, 99W1).

**Environment**

Usually map constructs of this theme contain many drawings that are related to wildlife, such as flora (e.g. 93W4), fauna (e.g. 95W6, 99W7), or both (e.g. 97W5). Some of the constructs conveyed a very strong optimistic view towards improving and conserving the environment (e.g. 93W6 – see also the theme of 'Peace', 95W4) whereas some portrayed a somewhat gloomy and negative picture about destruction of the environment (e.g. 93W2 – see Figure 1, 93W8, 97W6, 97W3). When 93W8 is initially viewed, the sombre colours may at first give a negative impression, but upon closer observation it perhaps reveals a hidden message of the child's experiences and aspirations that could be positive in intention. On the other hand, 95W6 depicts the issue of pollution, such as carbon fluorides, and the resulting effect of endangering wildlife.

**Salient features and/or landmarks**

Usually map constructs of this theme contain drawings almost immediately recognisable as national landmarks, such as the Great Wall of China (e.g. 93W3), the pyramids of Egypt (e.g. 95W6, 97W4), the Eiffel Tower of Paris (e.g. 97W7), Statue of Liberty for New York (e.g. 93W3) and continental features such as the Rockies or Andes in the Americas and the rainforests in the tropics (e.g. 95W6, 99W2). The other special features that children liked to include in their map constructs are national (e.g. 95W1 – see Figure 2, 93W4, 93W5) or special international events such as the Olympics (e.g. 99W3).

Across the four identified themes from the thirty-six maps, three categories reflecting the way these children look at the world appear to have emerged. Each category carries a positive, negative or neutral perspective. It is interesting to find that most of the positive map constructs come from the

themes of 'Culture' and 'Peace' while the negative ones originates from 'Conflict' and 'The Environment'. Most of the drawings from the theme of 'Salient Features and Landmarks' are inclined to be neutral by the simple inclusion of the representative national icons in their map constructs. The distribution of the thirty-six map constructs into the three perspectives can be found in Table 2.

*table 2* ***Message perspective conveyed by the children's map construct***

| CATEGORIES OF MESSAGE PERSPECTIVE | CODING LABEL OF THE MAP CONSTRUCT+ | NO. |
|---|---|---|
| Positive – Optimistic – Bright – Encouraging | 93W3, 93W4, 93W5, 93W6, 93W7, 93W9, 95W3, 95W4, 95W5, 95W7, 95W8, 95W9, 97W1, 97W2, 97W4, 97W8*, 99W3, 99W4, 99W5, 99W6. | 20 |
| Negative – Pessimistic – Gloomy | 93W2*, 93W8, 95W6, 97W3, 97W5, 97W6, 99W1, 99W8. | 8 |
| Neutral – Fact Conveyance | 93W1, 93W10, 95W1*, 95W2, 95W10*, 97W7, 99W2, 99W7 | 8 |

*+ Refer to Table 1 for details of each of the map constructs.*
** See Figures 1 to 4.*

In general, twenty of the map constructs denote a perspective that is positive, optimistic, bright and encouraging, while eight of the thirty-six map constructs convey a perspective that is negative, pessimistic and gloomy. The other eight map constructs are considered to be neutral as they primarily present the location of certain features, landmarks and icons. It can also be demonstrated that there is a tendency among children from the developed world to draw map constructs with a positive outlook; those by children coming from the developing world or countries suffering political turmoil or instability tend to be more negative and gloomy.

## Cartographic characteristics of the children's map constructs

Apart from the analysis of the messages conveyed by the children that reflected what they knew and felt for their world, it is also of interest to look

into the cartographic elements that children portrayed in their map constructs. The ICA's map competition guidelines did not identify specific cartographic elements (other than a title), and thus gave the children great flexibility to express 'creative representations of their world ... via a graphic form – a drawing or any other form of artwork' (Anderson 1999, p 427). As a result, we are able to describe and interpret the thirty-eight winning children's ability to draw a graphic form, which was used to convey a message about the way they perceived their world (two of the winning constructs were the joint work of two children – 95W7 & 99W6). While it was not easy for us to use the cartographic elements in the conventional way to judge the cartographic performance of the children, it is of great interest to see how these children incorporated cartographic elements or characteristics into their map constructs. Based on the work of Gerber (1981, 1984 &1985) and Wilson (1980), four cartographic characteristics are discussed: symbolisation, proportion and arrangement, area presentation and projection, and distribution and location.

## *Symbolisation*

Among the thirty-six map constructs, only the collage 'Abstract World Map Showing Flags and Features' (e.g. 95W1 – see Figure 2) included a legend of some of the mapped features. Perhaps one of the reasons accounting for the lack of legends in the other children's map constructs relates to the fact that many of the symbols are pictorial (mimetic) point symbols; for example, the detailed portrayal of animals and mammals such as whales, sharks and penguins (e.g. 99W7). Pictorial portrayal forms the main component of several maps on the theme of 'Environment-related' to the distribution of endangering wildlife and the contributing factors such as oil spills from tankers (e.g. 95W6). Other mimetic symbols depict features or landmarks associated with a country; for example, the Great Wall of China (e.g. 93W3, 97W2, 97W4), the Sydney Opera House of Australia (e.g. 97W7), Egypt's pyramids (e.g. 95W6, 97W4, 97W7, 99W2), France's Eiffel Tower (e.g. 97W2, 97W7), and New York's Statue of Liberty (e.g. 93W3). Other common pictorial symbols are the national flags that are used as a focus for a drawing (e.g. 93W4) or for the background of a map construct (e.g. 93W5). It would, however, be incorrect to

assume that the children used no abstract point symbols. Two maps (e.g. 99W3, 95W10 – see Figure 3) used red dots to symbolise cities. 'The Olympic Spirit Unites People' (e.g. 99W3) also employed two divided circles, one to portray the number of countries who participated in 1896 summer Olympic games and a second for what is hoped for in 2004 participation. A second reason for the lack of a legend may be the assumption that the hue used for the symbol is self-evident. Examples of this would include the use of brown to indicate mountain ranges, blue for water and green for a low-lying area.

The children's maps also contain line and area symbols. The line symbols (generally in the form of a solid line) are used to represent coastlines (portrayed by colours including black, blue, green and red), country boundaries and, on a few maps, rivers (e.g. 99W2). Area symbols are used to represent the land area (which may or may not be divided in some manner, e.g. countries and physiognomy) and water bodies (oceans, seas and lakes). Some graphics simply represent the land in one colour and water in another. In other constructs, different hues are used for different countries or the countries are symbolised in some fashion ranging from a face (e.g. 95W9), a leaf (e.g. 93W4) to the nation's flag (e.g. 95W1 – see Figure 2). In others the physiognomy is shown and, as previously mentioned, there is the assumption that the hues used are self-evident, such as brown to depict mountain ranges (e.g. 99W5). There are also examples of the use of metaphors to represent land areas; for example, doves for peace (e.g. 93W5 & 93W6).

Several maps do not apply colour to the oceans (e.g. 95W10). However, in the majority of cases the oceans are blue. Within these examples there are several cases where the blue immediately adjacent to the coastlines is darker than the blue elsewhere (e.g. 95W6 & 97W1). In other examples a different hue (green in 97W8 – see Figure 4) or several hues have been used to conform to the general design of other components of the graphic (e.g. 93W8 & 97W6). There is also one example where the sea is portrayed by flags (e.g. 93W5). In some cases, unrelated pictorial images of fish (e.g. 93W3) and men in a boat (e.g. 97W4) have been added. There are also a few examples where short-line hues (to indicate waves) have been added (e.g. 97W2 – brown lines and blue lines in 99W3 and 99W4).

It is quite obvious that the majority of the children preferred to use mainly pictorial symbols to represent what they considered as distinctive features and landmarks of the world. Because of the distinct or salient characteristics, the children were not aware of the need to use a legend to annotate what each symbol meant to the other readers.

### *Proportion and arrangement (scale, size, shape and area)*

Gerber (1984) defined proportion as the drawing of symbols so that the drawn size and shape when compared with the actual size and shape are proportionally related. Gerber (1985) went further to include the ideas of scale, distance, size and area under the broad concept of proportion. To ask children to represent their world through the drawing of a map construct tests their ability to handle the critical cartographic elements of proportion and arrangement, although the children themselves may not be aware of their own competency to do so. It is not our intent here to precisely assess the children's ability to represent proportion and arrangement. Instead, our analysis is based on four levels of performance modified from Wilson (1980) and Gerber (1989, p.308) which are generally described as follows:

1. None to very little logical or 'realistic' proportion and correspondence with the real world.

2. Relative sizes of all objects on the map are recognisable and roughly relate to relative size of the real world (± 30 per cent). Objects are also in recognisable but poor spatial correspondence to the real world.

3. Relative sizes of objects on the map are accurately related to the relative size of the real world (±20 per cent). Inter-object distances are approaching the correct proportion. Objects on the map are in reasonable correspondence to the real world (±20 per cent).

4. All sizes of objects and distances on the map are accurately related to the real world (±10 per cent). Objects on the map are in accurate correspondence to the real world (±10 per cent) in conjunction with good proportion.

Table 3 summarises the general level of performance on the cartographic elements of proportion and arrangement assigned to each of the thirty-six map constructs. However, the actual performance was determined also by whether the children drew a free sketch outline or produced a configuration

*table 3* ***Level of performance on proportion and arrangement of the children's maps constructs***

| LEVEL OF PERFORMANCE ON PROPORTION AND ARRANGEMENT | CODING LABEL OF THE MAP CONSTRUCT+ | NO. |
|---|---|---|
| Level 1 (the lowest level) | 993W6, 93W10, 95W2, 97W2, | 4 |
| Level 2 | 93W2*, 93W9, 95W1*, 95W4, 95W8, 95W9, 97W1, 97W7, 99W2, 99W6 | 10 |
| Level 3 | 93W4, 93W5, 93W7, 95W3, 93W5, 95W6, 95W7, 97W3, 97W8*, 99W5 | 10 |
| Level 4 (the highest level) | 93W1, 93W8, 95W5, 95W10*, 97W4, 97W5, 97W6, 99W1, 99W3, 99W4, 99W7, 99W8 | 12 |

*+ Refer to Table 1 for details of each of the map constructs.*
** See Figures 1 to 4.*

by following or copying from a stencil template. In the former, there is the implication that the children were actually performing better than those who copied from a stencil template. However, there are no direct data to supplement this information. Purely from our personal observations and judgment, it seems that those who were assigned to the highest level of performance relied upon the copying or tracing of a world outline. In general, the shape and size proportion of the continents and the respective distance apart from each other were generally well presented by all but the four children whose level of performance was one (the lowest level). However, although the children demonstrated a reasonable mastery of the concepts of proportion and arrangement, we are unable to say with any confidence that they automatically had the concept of scale in mind. Only one map construct (e.g. 95W1 – see Figure 2) explicitly mentioned scale, by inserting in the words 'SCALE: Not to Scale'.

## *Area presentation and projection of the map constructs*

The term 'world map' means different things to different people, and the children's graphics accordingly show a variety of representations. Amongst the thirty-six winning maps, this included a hemisphere, part of the globe, the

whole world, and the universe. Within the world maps, those from Asia were centered on the Pacific Ocean, while those from Europe and the Americas were centered on the Atlantic Ocean. While many of the world maps have countries missing, the most notably absent of which are Greenland and Iceland, Antarctica (more often than not) is included.

The role the 'world map' played also varied. The 'Map of the World' was not always presented as the most significant element of the graphic. The projection of the world's three-dimensional surface onto a two-dimensional plane is an important characteristic of a map. Despite the specified dimensions, few maps appear to have used a true Mercator projection in which the parallels and meridians are represented as straight lines. Many of the graphics appear to be based on an equal area projection such as the Sinusoidal or Mollweide's projections.

## *Distribution and location (cardinal direction and reference grid)*

While most of the map constructs contained a title (thirty out of thirty-six, see Table 1), many symbols and a reasonable proportion and arrangement of the land and water bodies, most paid little or no attention to other cartographic characteristics. Few of the map constructs included the attributes associated with distribution and location: cardinal direction (i.e. compass points) and a reference grid (i.e. latitude and longitude). Only one map construct (e.g. 95W1 – see Figure 2) contained a north arrow. This graphic actually included several north arrows: two directed towards the North Pole with the other directed to the South Pole. There are two other map constructs in which a compass rose was present. While one rose appeared as a small symbol in the bottom left corner of the Bulgarian (99W2) graphic, created by a seven-year old, a more complex compass rose dominated the whole graphic from Croatia (97W3). The latter seems to have the intention of using the compass rose to highlight the world of the child's representation.

A reference system is implied by use of a graticule. Although these are found on several maps no annotations of value appear. Three of the maps contained the geographic graticule of latitude and longitude. These are the untitled

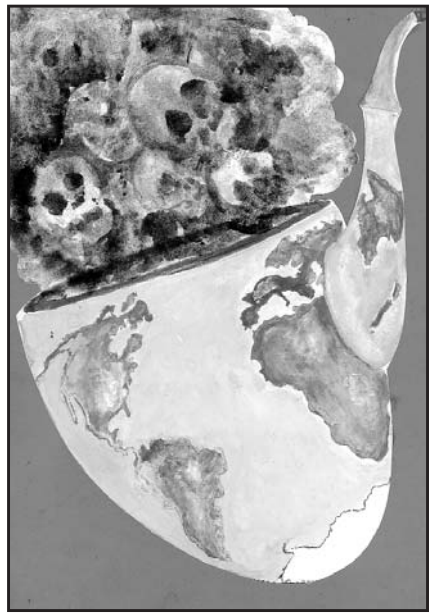
map of the Slovak Republic (93W7), Vietnam's map 'The World in My Cone Hat' (95W10 – see Figure 3) and the Ukraine graphic 'Together' (97W8 – see Figure 4). Another map contained the lines of longitude (93W6) depicted as vines while the map from Hungary (99W5) contained many parallels but included few meridians.

## Phenomenographical and cartographic descriptions of four of the children's map constructs of 'their' world

In order to give readers a clearer idea of the thematic preferences and cartographic characteristics found in the children's map constructs, four of the thirty-six winning constructs have been selected for comprehensive description. The source of the following graphics is online at:
<http://collections.ic.gc.ca/children>

### *93W2 – Hungary (fifteen-year-old girl)*

*figure 1*

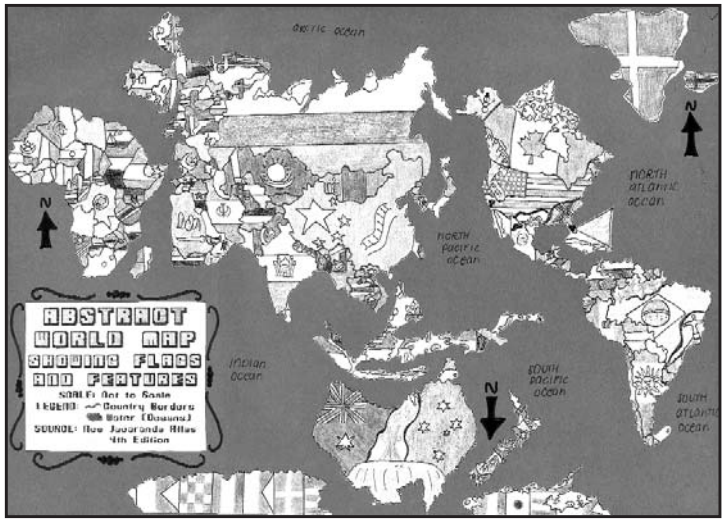


This map, a collage, was not a conventional type of world drawing. The message the child wanted to convey received prime attention. This message, portrayed

by a watercolour painting of a cigar pipe stuck onto blue paper, was clearly about pleading for no more smoking in this world because it results in hazardous death (represented by many skulls emitted as smoke from a cigar pipe). Obviously, the constructs message was a negative one with a pessimistic view. The child deliberately included parts of the world (North and South Americas, Europe, Africa and Australia but not Asia) on the curved surface of the cigar pipe. The distortion in shape and size caused by such curvature carries a reasonably high level of proportion and arrangement according to the approach adopted towards the cartographic elements. But a closer look reveals that Africa is very greatly oversized, while Europe is greatly undersized.

## *95W1 – Australia (fourteen-year-old girl)*

*figure 2*

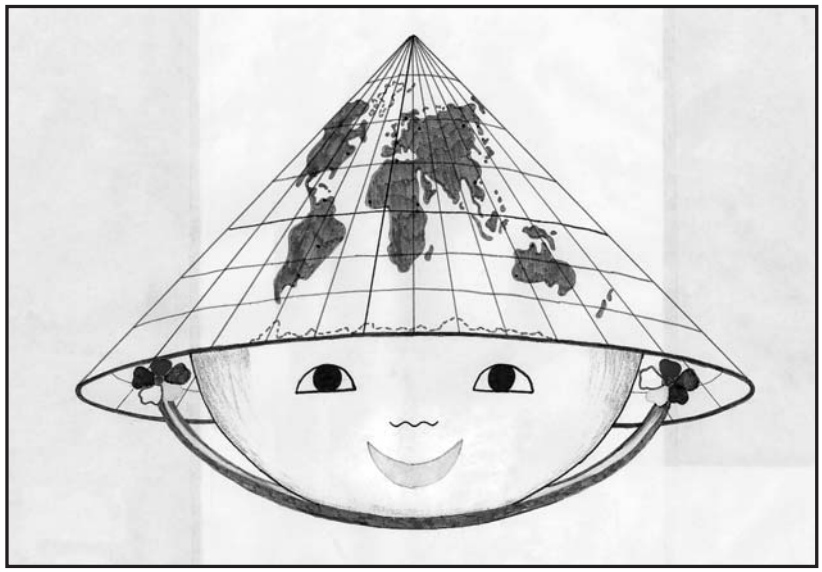



This map was chosen for illustration primarily because of the cartographic elements it contains. Individual countries/continents were traced from an atlas onto white paper, and then different countries were symbolised by colour pencil drawings of their national flag. It is a collage as the countries and continents are glued onto thin blue cardboard. Unlike many of the other map constructs, it contains freehand lettering on the map and computer-generated type/hand coloured type. A legend includes some of the map's

symbols, e.g., the country borders and water. However, the blue symbol for water used in the legend is not the same as the blue background cardboard used for the collage. The legend also contains an acknowledgement of the atlas source used and the annotation 'SCALE: Not to Scale.' There are several north signs scattered over the map – in which the various countries have been re-sized, re-located and re-orientated! The message is neutral, since the map basically just states what the national flags are like. The theme can be designated as cultural with some political element.

### *95W10 – Vietnam (twelve-year-old girl)*

*figure 3*



This map construct was chosen for illustration both for the message it conveys and the cartographic elements included. The message of the graphic, a felt-pen drawing on white paper, has a cultural orientation, with the world represented by a child bearing a typical hat worn by the Vietnamese. However, the cultural message was presented in a neutral way. The hat's conical shape created the difficulty of keeping the continents in appropriate shapes and sizes. This was resolved by the child gradually increasing the distances between the parallels of latitudes towards the tip of the conical hat. With all

this cartographic complexity, it is clear that the child drew the world in freehand, rather than copying or tracing it from some standard template. This graphic also includes small red abstract symbols to represent cities, and no hue is used for the oceans.

### *97W8 Ukraine (ten-year-old girl)*

*figure 3*

As in the case of the previous example, this map was chosen both because of the message conveyed and its cartographic elements. This map construct, a watercolour, carries a positive, optimistic and encouraging message that the child certainly looks forward to a world with all the continents (or perhaps the people living on the continents) being brought together to form the 'ONE WORLD' concept. In this graphic, green is used to portray the seas and oceans. Felt-tipped pens were used for the details, e.g. the girl's blouse and socks. The child also represented the world on the curved surface of a globe, and included the concepts of longitudes and latitudes that were drawn with a blue felt-tipped pen. The freehand drawing gives a reasonable shape and size for the continents upon a curved surface.

## Conclusion

Through a phenomenographical approach of thirty-six 'world map' constructs of their world, produced by children aged five to fifteen from twenty-six countries, four general themes reflecting their personal understandings of the world, were identified. The themes are concerned with culture; knowledge of the existence of conflict and the need and desire for peace; the environment – its importance and fragility; and the knowledge of the existence of national and international landmarks and features.

The analysis of the map constructs' cartographic characteristics revealed that in each of the technical aspects – medium, scale, cartographic components and symbolic representation – a continuum of possibilities was represented. In general, the children favoured strongly the use of pictorial symbols to represent what they considered as distinctive or salient landmarks of the world. Many of the constructs demonstrated a reasonable mastery of the concepts of proportion and arrangement. But this is not surprising, since many of the outlines of the continents and countries appear to have been generated by following or copying from a stencil template. The study of the map constructs also revealed that the children paid little attention to either cardinal directions or the geographical graticule. It can be argued that the thirty-six constructs studied may be neither a large enough nor a representative sample for an indepth study of either the themes concerning children or their cartographic knowledge. Notwithstanding, we believe that this work is a valuable starting point for the future analyses of both international and national children's map constructs.

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## *Online reference*

http://collections.ic.gc.ca/children

# part *e*

## *the arts, aesthetics and environment*

# Introduction ~ *Rod Gerber*

Finding expression about their life-worlds and environments occurs naturally for children. Just in what form such expression takes place varies according to a range of contextual variables, including culture, access to technology, personal interest, one's play environment, personal influences and so on. It also depends upon the children's capacity to express their feelings and understandings so that they can be understood by other children and relevant adults, e.g. parents and close relatives.

When considering space, environment and cultural groups, it is quite natural to think of the performing arts, aesthetics and associated technologies as being fields through which meaningful communication can occur. After all, many children love to express themselves via dramatic performance, artistic demonstrations in the visual arts, and by demonstrating their prowess on musical instruments. Throughout the ages, families have been entertained by their children. This form of intelligent behaviour has been identified as being different from other forms of intellectual activity because it involves some form of physical dexterity that is combined with cognitive behaviour. Further, it is also characterised by distinctive creative activity and innovation. Children who demonstrate artistic flair in their tender years are regularly singled out as being wonderful. Societies tend to laud the performances of these creative young minds even more than children who demonstrate other forms of cognitive brilliance.

Children who develop artistic skills are encouraged to do so within their holistic development. This section focuses on the distinctiveness of artistic and aesthetic skills of children, and to link these with omnipotent communication technologies which are facilitating children's learning in the performing arts. The authors plan to claim a place for artistic and aesthetic abilities in the scheme of cognitive behaviours experienced by children in their formative years.

Three chapters constitute this section. They represent the diversity of considerations that can be mentioned when dealing with children, cognition and artistic performance. The spread of their authors gives some idea of geographical variation in considering this theme. However, it does not reflect a breadth of cultural variation on the theme, since children in a wide range of cultures do offer different approaches to intentional cognitive behaviour in the performing arts. There is simply not space to capture this cultural variety in the three chapters in this book.

As mentioned before, children love to act and to assume different roles in formal and informal plays. The first chapter, by Peter Wright and Bjorn Rasmussen, focuses on children and drama. The authors wish to highlight drama as aesthetic knowing; that is, that drama is defined as 'linguistic intelligence, embodied knowing and personal intelligence'. It is a multimodal and inter-connected way of knowing. Dramatic knowing is therefore grounded in ideas of popular culture for children and is situated in everyday experiences.

The authors make a strong plea for drama education to help in the development of this bridge between emotion and intellect. They claim that an education in drama permits children to explore what they know about their world and how they came to know it. The dramatic experience is the basis for an aesthetic way of knowing that is based on feeling. Drama as aesthetic knowing involves children engaging in experiences that take the participants outside of themselves; developing the individual's ability to perceive, feel, imagine and reflect; a provocation to wonder about real and imagined places; and a search for deeper meaning than each person already knows.

A demonstrable link between dramatic/aesthetic knowing and several of Gardner's multiple intelligences is presented. However, the authors wish to extend beyond this theory to present the case for dramatic knowing as a way of knowing itself. This is developed by considering drama as linguistic intelligence, embodied knowledge and personal intelligence. Their main points are then illustrated by reference to specific studies in Australia and Norway.

Kristin Rauch moves into the realm of the visual arts in her chapter with a focus on children's paintings. She makes the case that children's paintings and associated writings are expressions of their knowledge and feelings about the world around them. They inform adults what is important to children,

what holds their attention and how they choose to communicate. Rauch considers painting, drawing and creative writing to be tools that children use to work on ideas to share with other children and adults. She builds the idea that painting and creative writing act as a dual lens for seeing and understanding the worlds which children choose freely to use.

The main focus in the chapter is the analysis of children's painting and writing in a project entitled 'This land we walk'. Here, the works of children aged five years or ten to eleven years from three sites in Australia and three in the USA were collected and then analysed by the author. In these analyses, Rauch focuses on how the children described their environments and what they felt about them. She was also interested in the strategies that the children chose to use to express themselves. Based on these analyses, she concluded that the children teach us to go beyond observation when considering the environments in which we live. They used description, story and metaphor to invite viewers and readers to broaden their expectations and to provide multiple ways of expressing themselves. Children certainly did express passion and intelligence in their paintings and creative writing. It is this message that educators should take seriously when engaging young children in artistic activities.

The third chapter in this section, by Margaret Robertson, highlights the penetration of computers in the lives of children, and their attraction to natural places, including both these and computers as private spaces for communication and exchange. This is a key part of children's informal use of their leisure time. Robertson reveals a complex, fascinating set of competing tensions in children's lives. She highlights the strategies that are used by children to solve personal dilemmas in time, space and place. These include solutions that may never occur to adults in their life-worlds. While age-related and gender-related differences are to be expected in their use of leisure spaces, children's behaviours also reflect the impact of the world of information and communication technologies, globalisation and time–space compression. Real spaces for communication are being complemented by virtual spaces. The youthful pedagogies that are exhibited by young people need to be explored and taken very seriously by adults, for they represent the current practices.

13

# Children and drama: Knowing differently

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## Introduction

The identification and documentation of different ways of knowing is a 'hot' topic in educational research. What is at issue is whether there are stable identifiable learning or cognitive styles, and how factors such as gender, development, personality, life-worlds and social culture impact on these abilities. It seems clear to us is that there is indeed a variety of learning media and ways of knowing, and that knowing through the arts, and 'dramatic knowing' in particular, has much to offer to the education of our young people. Dramatic knowing is the cultural production of meaning-embedded forms and insights through the use of the human body, symbols, metaphors and the fictional world developed through drama.

What this knowing through the arts does is to reveal what might have been considered previously as 'unconventional' or even 'unintelligent' ways of knowing. These ways of knowing are based on the 'situatedness' of our young people, and include, but certainly are not limited to, such influences as the family, peers, popular culture and indigenous tradition, heritage and

knowledge. Drama as a way of knowing encourages and celebrates lived and imagined experience, emotions, intuition and creativity in their various forms of representation, and recognises and makes sense of those experiences. In this chapter, then, we briefly consider how the processual[1] elements of drama are essential ways of knowing for young people, and describe from our pedagogical experience how an education in drama may develop this powerful way of knowing. We approach this task from four perspectives.

First, we describe different 'ways of knowing', and briefly introduce artistic and dramatic ways of knowing, as both accessible and potent – we then describe these ways of knowing in the context of young people as cultural producers. Next, we provide an overview of the role of drama in education, and how the dramatic process facilitates many ways of knowing. Specifically, we consider those elements of drama that are revealing as ways of knowing themselves – highlighting drama as 'aesthetic knowing'. Third, we consider how the theory of multiple intelligences (Gardner 1983) allows us to think differently about how young people know and negotiate their world. In the light of this reconsideration we then describe drama **as** linguistic intelligence, embodied knowing and personal intelligence. Fourth, these points are then briefly illuminated through our Australian and Norwegian pedagogical experiences, where young people handled and connected sensuous impressions, emotions, cognitive reflection and bodily movement through the action methods of drama (in) education. These experiences also reflect how drama education contributes to a model of educational partnership and peer teaching. In particular, we claim that dramatic pedagogy is able to provide a site where young people have an authentic voice in the work that they do; parenthetically, a site with great potential for research on young people's imaginative life and cultural behaviour.

What we argue is that drama as a way of knowing is multimodal and inter-connected. Importantly, drama can be seen to have many elements – including, but not limited to, language and movement which both exist in an aesthetic framework. Furthermore, drama as aesthetic knowing draws on young people's aesthetic knowledge in their own lives. This knowledge is accessible to young people through popular culture and fine arts, as well as

1 'Process' in drama is defined by O'Toole (1992, p. 2) as 'negotiating and renegotiating the elements of the dramatic form, in terms of the context and purposes of the participants'.

through the aesthetic of everyday life (Drotner 1991; Gullestad 1996). When schooling is able to engage young people through drama as a way of knowing, education becomes more meaningful for those who experience it.

## Ways of knowing

Traditionally, ways of knowing in our schools have been limited, and have been influenced by a Cartesian–Newtonian worldview and Eurocentric notions of cognition and culture. What this has meant is that all students who are 'different' have effectively been excluded from 'success' in the education system, and paradoxically those lucky enough to fall under the educational umbrella of white, and middle class, have also missed out. This is because these young people's self-understanding in relation to others is never fully developed. Importantly, this lack of understanding can be seen as having socially pathological implications and as ultimately destructive. Also, privileging one Eurocentric way of knowing has meant that cultural or traditional ways of knowing have remained as untapped resources.

This narrow world-view has been the basis for much of cognitive science, and has an ethos that is culture-free, mechanistic, objective and quantitative (Steinberg, Kincheloe & Hinchey 1999). Human experience, by critical contrast, is primordially culture-bound, organic, subjective and qualitative (Pickering 1999).

Also influential in re-considering different ways of knowing has been Gardner's (1983) theory of Multiple Intelligences (MI). This influence is reflected in the popularity of teachers' reference volumes such as Lazear's (1991) *Seven ways of knowing: Teaching for multiple intelligences — A handbook for expanding intelligence*. This book is based on the idea of expanding intelligence in the classroom through focusing on a set of techniques that employ each form of MI as a distinctive and significant way of knowing. Artistic ways of knowing, however, are more than just a set of techniques, and the strength of the arts is in their interdisciplinary and inter-connected nature. Villaverde described it this way: 'The arts requires techniques, emotions, thoughts, a way of seeing, conceptualizing, dialoguing, and acting, all interrelating and never isolated from one another' (1999, p. 156).

Support for dramatic knowing can be found in a plethora of recent literature (Best 1992; Landy 1993; O'Toole 1992; Witkin 1974). Villaverde (1999, p. 248) for example, in commenting on the rapid changes occurring in society, claims that, 'Students need more experience in understanding and struggling with modes of being and acting in the world, exploring other ways of knowing'. The imperative behind his remarks is a plea to better help our young people understand how life, and its multidimensional connectedness, resides at the centre of the curriculum. We believe that theatre and dramatic playing, with a focus on life and human events, is also a mode of being and acting in the world and, hence, can also lie at the centre of the curriculum.

In addition, we contend that drama education, with its emphasis on the student as an artistic 'maker' and 'remaker' (in terms of a hermeneutical spiral), has much to contribute in bridging the gap between young people, popular culture and the school. This is because young people, through drama, draw on their own youth culture. In this sense, young people become active knowers, rather than passive receivers of knowledge (Bohm & Edwards 1991).

## The role of drama education

It is clearly understood by arts educators that we have a particular role to play in helping young people come to know their world, and their place in it (Best 1992). Drama education, in particular, has evolved with a strong social and political agenda over the past forty years. This development is clearly reflected in such influential texts such as *Development through drama* (Way 1967), *Drama as a learning medium* (Wagner 1976) and *Drama as education* (Bolton 1984). It is interesting to note how the titles of these three volumes reflect the development of drama education theory and practice over this period – a development that has always been concerned with young people's ways of knowing.

The influential drama scholar Richard Courtney (1990) has described how this way of knowing happens. First, when we wish to understand the world we dramatise it. That is, we compare the actual world with the fictional one that we create. This comparison provides a point of difference or contrast, and so provides us with new information. What this means is that we use the fictional, or 'as if', world to test and inform the real world, and vice versa

(Courtney 1995). Human beings are able to do this because we operate in our cognitive processes both with the 'is' and the 'as if'. The implication of this process is that the 'as if', or fictional, world of drama always has the possibility of the real world, or 'is'. This possibility lies at the very core of change of understanding. In this way, young people can compare the actual with the fictional, and it is the 'as if' of drama in particular that allows us to project and transform what we know, and potentially who we are.

As a form of social practice drama is highly dependent upon both inter- and intra-personal skills – where the intra-personal is concerned with the development of the internal aspects of a person, and the interpersonal with relationships between others. The participant in this practice playfully interacts on many levels; with co-players, presented material, his or her own projected imaginations, specific art forms and cultural (arts) conventions. In short, drama is a complex social art and is given power by its human context.

One of the first things taught to pre-service teachers in our drama education courses in both Australia and Norway is the importance of working with the intra-interpersonal dynamic. For example, knowledge passed between equals takes on a very different character to knowledge passed from a superior to a subordinate, and a dramatic way of knowing implies understanding and experience as **both** a producer and receiver of knowledge. Drama, in this sense, is a social art.

Implicit in this notion of drama as a social art is the idea of **mutuality**; that is, we create our knowing reciprocally with others. As Courtney highlighted, 'mutuality is functional' (1990, p. 23). These socially constructed forms of knowledge are constantly being transformed by dramatic actions – actions that become increasingly more complex as young people mature. The idea of knowledge being transformed by action is supported most recently by the postformalists. Kincheloe (1999, p. 11) and others, for example, have asserted that, 'the verbal meaning [knowing] learners acquire is shaped by their interpretive activities' and these interpretative activities are 'constructed in relation to some form of action'. While these notions challenge traditional thinking in teaching and learning, they are part of various dynamics used in drama. That is, knowing in drama is developed as much by interpreted action (mimesis) as it is by words.

Drama is a form that validates emotions and sensuous experience as sources of information to, and for, the individual – sources, that, until recently, have been discounted in education as ways of knowing (Boler 1999; Hinchey 1999). This notion is also strongly supported by Kincheloe (1999), who provided a broader conception of Aronowitz's (1988) notion of 'alternative rationalities'. What this term does, in its expanded form, is to illuminate how drama contributes to young people's ways of knowing – specifically, an awareness of power in relation to thinking, a sensitivity to sign, symbol and pattern, a mindfulness of the role of emotion and feeling in thinking, and a sensitivity to the role of the (un)conscious in learning. In short, the role of emotion in drama has provided, and continues to provide, a window of opportunity for teachers to develop as an important way of knowing (Ball 1999).

Finally, because drama is based on story, it is immediately understandable as a recognised way of knowing. What is important about this way of knowing is that we are 'storied' beings who use story and narrative both as a way to make sense of experience, and to project ourselves into the future. In short, an education in drama not only allows students to explore what they know, and want to know, but also how they came to know it.

## Elements of drama

When we conceptualise drama as a way of knowing, a number of elements are foregrounded. First, drama requires of its participants a personal involvement. This is because 'good drama' contains an element of tension (O'Toole 1992) where participants cannot help but look inwards, and to participate in decision-making that is targeted at the resolution of such tension. Second, drama uses the emotions – not just as means of expression, but also as a source of information. As a consequence of this use of the emotions, drama uses symbol and metaphor to represent what is abstract and difficult to articulate otherwise. Third, drama uses the body – as a tool for investigation, as a source of new knowledge and as a means of representation. Finally, drama bridges the divide between emotion and intellect. This is because drama involves all of the senses, the mind and the body in a way that is interconnected and multidimensional; in short, a Gestalt where two disparate

events are combined into a whole, with the meaning being amplified by the elements of each (Ricouer 1977). In addition, we would like to highlight what the post-structuralist critique of this position offers. That is, that drama as a way of knowing allows us to not only connect disparate items in a holistic way, but also to disconnect or deconstruct given representations and hold a playful attitude to those representations. What this inter/disconnected continuum does is to highlight the multidimensional nature of drama and to provide a space for knowing that is inbetween ourselves, others and things.

## Drama as an aesthetic way of knowing

Drama, first and foremost, is an aesthetic way of knowing, and the focus of this aesthetic way of knowing is feeling. Courtney (1995, p. 20) described this feeling as balanced between, 'emotions and moods; intuition, insights and hunches (aspects of cognition); and psychomotor thinking'. It is also important to realise that **imagining** is crucial to all aesthetic thoughts and action, and that it is felt-meaning connections that makes the aesthetic mode qualitative. In this way, aesthetic learning can occur through a linking of the inner psychic world with the outer world (Best 1992).

The aesthetic component of drama in education fills a number of important roles. First, students are engaged with experiences that take the participants 'outside' themselves. What this does is to allow students to move away from the familiar, and to exist in what Greene (1999, p. 10) described as 'the realm of the possible'. This ability to work imaginatively, in Coleridge's famous phrase 'as if', allows students to view things as though they could be different, and provides them with the opportunity to engage with alternative forms of reality. What is important about this working 'as if' is that students get to see many more possibilities and potentialities for meaning. Hence, aesthetic ways of knowing can be seen to work through various ways of 'standing for', and these different modes of symbolic and metaphoric thought allow for variation in the student's world. This variation is important, because when students can see difference they can move out of the uni-dimensional domain of everyday life, and drama is a powerful way of providing that difference.

Finally, drama as aesthetic knowing offers students a provocation to wonder about real and imaginary places, to ask questions about issues of

power and to make meaning through dramatically enhanced ways of knowing by reaching deeper, and seeking more than they already know. It is these attributes, so powerfully developed in drama education, that are a powerful adjunct to the power–knowledge struggles described by Foucault (1970), for whom the role of education is to provide individuals with access to 'any kind of discourse' (Foucault 1982 p. 227). Significantly, these attributes are learnable through drama (Kincheloe 1999).

## Multiple intelligences and the dramatic medium

The conceptualisation of 'Multi-Intelligences' (MI) has been influential in theorising about arts education (Gardner 1983; Commonwealth of Australia 1995). This is because, for the first time, arts experiences can be seen to exist within a broader framework than the logocentric frame within which so much of teaching in Western schools occurs. Importantly, what this form of theorising does is raise the possibilities of different forms of experience – experience that is different, not less, than traditional notions of the 'Three Rs'. It is also clear that when we have an expanded notion of what intelligence or sophisticated thinking involves, and the forms that it takes, we have a better chance of facilitating its development.

The theory of MI conceptualises a number of 'intelligences' or ways of knowing about the self and the world. Drama education can be clearly seen to be linked directly to a number of these 'intelligences' (language, spatial, bodily-kinaesthetic and inter/intra-personal). The expanded conception of 'ways of knowing' has allowed us to reconsider the importance and potential of dramatic knowing as a part of a cultural aesthetic practice. While Gardner's work can be construed as providing a rationale for instrumental ends for the arts, we would argue that dramatic knowing is a way of knowing in, and of, itself. What is important about drama as a cultural aesthetic practice is that there is recognition that this practice reflects particular cultural locations at specific times in history, and so is situated in the lives that our young people live.

More recently, expanded ways of knowing also has been supported through post-formal thinking in education (Kincheloe 1999; Steinberg, Kincheloe & Hinchey 1999). Kincheloe (1993, p. 125), for example, described post-formal theorising as 'expand[ing]s the boundaries of what can be labelled

sophisticated thinking'. We would contend that drama as a way of knowing explicitly expands the boundary of what is commonly accepted as sophisticated thinking, and in this sense, can be seen to be linked with elements of MI.

## Drama as linguistic intelligence

In the framework of post-structuralist cultural theory, drama can be seen as a way of understanding or making meaning. One of the ways that drama does this is both through connecting and disconnecting thought, language in its broadest conception, and action. Importantly, when ways of thinking, communicating and doing are linked, destabilised and relinked, powerful learning occurs. This is because drama combines a number of ways of being and doing in the world. Hence, drama can be seen to be **multi-modal**. Secondly, drama is a fundamental scheme for linking human actions and events into interrelated aspects of an understandable composite.

Learning can also be conceived of as the 'making of meaning', and meaning is constructed most powerfully with others and is mediated through language (in its widest sense). This mediation may occur through the language of narratives and stories. Bruner (1986) described narrative knowing as one of the two basic ways that people know of their world. The second part of this traditional view is that of 'paradigmatic understanding'. The difference between the two is that paradigmatic understanding seeks to find 'universals'; that is, conditions that hold across location and time, whereas narrative understanding seeks to understand the part in relation to a Gestalt that is rich and full of meaning. While oral language and drama are intertwined, it is also important to note that narrative knowing is only one way of knowing the world, and that the post-structuralist position suggests that there are no 'universals', but rather labile meanings constructed in specific relationships and contexts.

Finally, drama as we conceive of it, is a language in and of itself. A language where words can be replaced by other symbolic actions, such as sound, gesture and movement in space and time.

## Drama as embodied knowledge

What is important in drama as kinaesthetic knowing is that the participants can know about themselves and their worlds through their bodies. This is both through the individual's perceptions and the meaning he or she makes of those perceptions. Lakoff and Johnson (1980, p. 25), for example, described how our experience of physical objects (especially our bodies) and substances provides 'a further basis for understanding' and this understanding can be described as embodied knowledge.

In drama, the whole body is used to communicate reciprocally with others, and as we exist in the world in an embodied way, it is the body that is generative and creates meaning. Speaking, then, can be seen to be a bodily activity that refines preverbal behaviours of communication – such as gesturing. Hence, the bodily experience of the world is the precursor to language and an important way to be in the world.

What an education in drama does, in part, is to educate the body. However, this education is more than just the ability to move, because as Grosz (1994, p. vii) highlighted, 'Bodies have all the explanatory power of minds'. Hence, educating the 'body' is an important component of drama education. This education can be achieved in a number of ways. First, students are taught a range of physical skills that encompasses both the simple and the sophisticated – like juggling – and the potent, such as powerful ways of communicating through gesture. Second, students are taught to use their bodies as centres of perspective, insight, reflection, motivation and agency. Students, therefore, are taught both to listen to, and to be 'in' their bodies, in order for them to express and be able to go 'out' of them. The ability to be centred in oneself not only allows a student to be able to portray someone accurately who is completely different to themselves, but also is an important way for students to know about their world.

## Drama as personal intelligence

Drama can also be conceptualised, in part, as personal intelligence. The personal intelligences are described as both inward and outward looking; that is, knowledge and examination of one's own feelings, and the ability to know and examine the behaviour, feelings and motivations of others (Gardner

1983, p. 241). These intelligences include both intra-personal and interpersonal. Kincheloe (1999) has provided an insightful commentary on these forms of intelligence where he described a sophisticated notion of intrapersonal intelligence as the ability of an individual to 'discriminate [between their] feelings, isolate and define them, and to employ them as a means of comprehending and shaping one's behavior' (p. 315).

Interpersonal intelligence, by way of contrast, Kincheloe went on to say, is 'outward looking', and allows an individual to 'deconstruct intentions and motivations [of others], even when they have been hidden, and to operate effectively on the basis of such analysis' (p. 316). What is important to realise about this intra/interpersonal ability is that each one is a facet of the same construct, and in this sense, cannot be usefully separated from each other. In addition, development of one facilitates development of the other. What drama as a way of knowing does in relation to personal intelligence, then, is both to provide skill and to empower students to name, interrogate and describe, and ultimately understand, 'symbolically ambiguous and highly diverse forms of feelings' (Kincheloe 1999, p. 315); that is consciousness and awareness. This ability lies at the core of drama education.

## An Australian and Norwegian experience

In a previous study by Wright (1996), a drama program was conducted with five classes of Years 5 and 6 students (eleven- and twelve-year-olds) in north-western regional New South Wales. In this program students were taught a variety of drama skills relating to social interaction, expression and movement. They were then 'enrolled' in a series of whole-group improvisations with the teacher also being 'in role'. These improvisations, now called 'Process Drama' (Haseman 1991), explored a series of scenarios suggested by the students and based on issues that were of concern to them. These scenarios included a series of process dramas based on such issues as a local environmental topic, problems with friends and bullying at school, and difficulties at home. Furthermore, each session was designed so that all students participated in each of the essential elements of a good drama lesson – imagination, enactment and reflection.

What happened in these process dramas was that students drew on their previous experiences that included a range of aesthetic experiences of their everyday worlds. These experiences were then framed **by** and **through** the dramatic framework using language, movement and inter/intra-personal skills. This aesthetic framework offered students perspective, a means whereby enquiry could be made, experiences examined, and meaning revealed. In short, the drama program fulfilled many of the functions of art. Furthermore, this program, and drama education more generally, valued students' contributions and their affective lives.

A similar drama program for sixteen- to eighteen-year-olds has been run in Norway as an action research project since 1996 (Rasmussen & Khachik 2000). In this program, drama was conceived as a way to support an increasing population of 'school-tired' teenagers who displayed such characteristics as arriving late at school, shirking, tiredness, indolence or disorder, low self-esteem and low academic achievement. The role-playing practice that was at the core of this program was not part of the usual arts education program in the participating schools, but rather was designed to fit within an educational program that supported students and teachers generally. One important aim of the project was to give young people a forum within which to express themselves, and to give shape and form to young students' learning experiences through provision of dramatic fiction in a safe and tolerant environment. Overall, it was important to help the students regain the motivation to learn by reconnecting their experiences from discrete social arenas and enabling them to recover a greater level of control in their own lives.

The results of this project indicated that these students increased their motivation to learn and lessened their feelings of alienation as a result of the role-playing program. This increase could be attributed to the role-playing where students both expressed and created understanding relevant to their own learning through the act of playing, negotiation and discussion, both in and out of role. Importantly, students' personal contribution from their own life-worlds seemed vital to their increased motivation, awareness and concentration. Students, therefore, are encouraged to stage, share and reflect their own personal positive attributes in a safe dramatic context, and hence reconnect such roles and attributes across disparate social arenas.

## Educational partnership and an authentic voice

Process drama is a form of drama education where students have both status and voice. The students have status because the 'teacher' is a joint investigator and creator within the dramatic frame, and the teacher often chooses a low-status role within the drama, specifically in order to empower the students. The students also have an authentic voice because the work is built from their ideas and concerns, and is based on experiences from their everyday life. In this way, drama offers an aesthetic frame within which students can explore, investigate and seek to understand their world and their place within it.

## Conclusion

Drama is a way of knowing that is cogent and powerful. This is because drama contains elements of language, the body, emotions, intellect, context and imagination. What is unique about this way of knowing is that drama is concerned with what it is to be human in a holistic way, the development of the affective domain and the development of what Ball (1999) calls the 'community dimension' (p. 30). This community dimension is more than using our multicultural society as an educational resource, but also is effective in removing some of the binary opposites such as 'them' and 'us'. In this way, education can be seen as a life-long process where young people's voices not only make sense of their experience, but also where their experience informs their voices. We will then be moving closer to Villaverde's (1999, p. 254) proposition that 'both teacher and student become active researchers of their experience in and out of schools'.

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14

# This land we walk: Children's paintings and writings

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We stepped outside into the schoolyard, clipboards, paper and pencils tucked under our arms. The children looked around eagerly, identifying things close and far. They smelled the newly mown grass, listened to the whirr of wings as a bird flew over, and watched the clouds build behind the hillside. After wandering for a while they settled down to sketch. Later in the day the children transformed the ideas and sketches gathered during the morning walk into paintings; conveying what was important to them about their environments. Words followed, explaining in another language what the children wanted to communicate. Children in eight school districts in Australia and the USA participated in this process, the core of the project titled 'This land we walk'.

The paintings and writings of the children express both their knowledge and feelings about the world around them. Their non-verbal images and written words convey their inner selves, the strategies they use to express their understandings and how they experience the world. In this chapter I describe the project, the ideas that permeate the process and the children's artworks. Their artwork and writings are powerful; they teach us what is important to the children, about what holds their attention and about how they choose to communicate.

## The arts as a tool for learning

Central to the project are several fundamental ideas about children and learning. In common with many others who work creatively with primary-aged children, I am continually reminded that they are capable of thinking and feeling deeply and intelligently about the world and their experiences in it (Ernst 1994; Gallas 1994; Heath 2000; Murray Darling Basin Commission 1997; Rauch & Almond 1997; Taylor & Andrews 1993). We, teachers and other adults, can step inside children's thinking and honour their expressions by providing them with opportunities to express what they know. We can 'begin to understand their world on their terms, without falling prey to preexisting assumptions about their abilities' (Hubbard 1989, p.13).

It follows that learning occurs in the child. 'Learning cannot be transferred, cannot be prescribed, cannot be delivered. No one can do our learning for us ... only the individual child can be agent of his or her own learning' (Taylor & Andrews 1993, p.xi). Children must be given time and space to perceive, select, judge, innovate, initiate, explore, revise and express in multiple ways in order for learning to occur. These processes allow children to transform what they perceive, and 'transformation is the key to knowledge construction and acquisition' (Goldberg 1997, p. 4).

Expression through the arts engages the senses, and engages the child in thinking deeply about the subject at hand. Painting, drawing and creative writing are tools that enable us to work with ideas, ideas of the individual child and the ideas of other children. The arts clarify thinking in ways that 'are inclusive of different ways of knowing; ways that include wonder, imagination and awe' (Gallas 1994, p. 78). Through active thinking and active creating, 'the art forms enable each child to apply his or her observations in an imaginative manner, creating a personal connection to the subject matter' (Goldberg 1997, p. 2). The learner is placed in the position of 'truly working with ideas and taking control of learning in a manner that is at once intellectual, personal, meaningful and powerful' (Goldberg 1997, p. 5). The arts provide children with a rich means of understanding and expression. Through the process followed in the 'This land we walk' project, through engaging in the creative process in drawing, painting and writing, through manipulation of materials, colours, lines and textures, the children observed

and reflected deeply on what they perceived. They became immersed in the experience of thinking and recognising their own feelings about their particular environments.

## Why art and writing?

The project, in addition to utilising the Arts as the primary mode of expression, is interdisciplinary in nature. The children look at the natural environment and that produced by people; they go outside to collect information. They act as artist/scientist, observing and describing the world around them. Words and writing add another dimension. The children, through this blending and weaving of experiences, have not only multiple ways of learning, but also multiple ways of expressing what they know. The children have more than one way to consider what they know about the world. Art and writing, in particular, serve as a dual lens for seeing.

Writers and artists make a habit of looking closely at things while gathering seeds for their work. Simple observations become catalysts for creative expressions. As they paint with words and pictures, their imaginings become their reply to the world and to life (Chancer & Rester-Zodrow 1997, p. 45).

The connections between the art and writing become part of a continuum of making sense of the world. 'Words and pictures work in partnership to describe meaning' (Ernst 1994, p. 31). The use of multiple tools for expression provides more opportunity to depict, create or express ideas about what is seen and felt. There are more ways to succeed, more opportunity to think metaphorically when making connections between the media, and more entrances into expression. Sometimes words lead to pictures, and sometimes pictures lead to words.

One of the twelve-year-old children completed the painting quickly. The drawing leaves a first impression of scribbles. The blue watercolour pencil lines in the sky are only just moistened, and the ten green rectangular scribbles only begin to suggest bushes or trees. A single cloud floats near the top of the page. I confess to an initial feeling of disappointment, to the notion that the child had not given the painting much thought, that it had not mattered to him very much. Fortunately, this child also wrote a single line, 'This is the place I go to watch the clouds go by'. A child in New Mexico responded with

a letter when he looked at the painting. 'I like your picture. We have a lot of mountains but not too much grass. I also like to watch the clouds go by. Most of the time I like to imagine animals or other things in them'. I was able to go beyond my misconception of the work because of the dual nature of the expression.

Imagination is the connection between art and writing and that connection is a powerful creating and re-creating force. Ultimately, the combination of art making and writing makes children's thinking and feeling more visible. The depth of their experience is made apparent through the multiple expressions. Combining art and writing in the natural environment is a way to expand, rather than limit, communication strategies; to expand, rather than narrow, the range of expression.

## This land we walk: The project

The process that served as the structure for the project was a simple one: it grew from the desire to give children the opportunity to express their thoughts and feelings about where they live through art and writing, and to share those thoughts and feelings with peers in other parts of the world. My role was peripheral to the central experience. I provided materials, the initial problem, and the means to transport the artwork to the school districts. Schools in Windham, New York, and Albuquerque and Santa Clara, New Mexico were visited in the USA. Windham is a green mountainous area, while Albuquerque, a large city, and Santa Clara, a small village, are in a desert region. In Australia, the schools were located in Armidale and Sofala in New South Wales, Cairns in Queensland and Jabiru in the Northern Territory. The environments range from the tablelands of New South Wales to the tropics of Queensland and the Northern Territory. The children were either age five or ages ten to eleven. The workshops in the schools were intensive, from one half day to two days, allowing children to immerse themselves in the experience. The problem posed at the first school visited in upstate New York asked the children to pay careful attention to their own environment and to think about what was important to them in that environment that they would like to share with other children in the USA and in Australia. Critical to the project was the idea that the primary audience for the artwork would be other

children in different environments. A globe was used to situate the two continents and various states. After the initial paintings were completed, all future classes had the opportunity to look at and respond to the paintings of their peers, either in the classroom or in a gallery setting. In several of the locations, the children also had the opportunity to respond to the artists by writing a letter. These letters became part of the exhibits so that the dialogue between children became part of the process.

Key steps in the process were:

1. Define the audience. Introduce children through the globe and their own experiences to the two countries involved.

2. Define environment, and clarify that people live in different environments.

3. Observe closely the local environment. Take a walk outside. Talk about what is seen and perceived, using all the senses. Ask about what is interesting, surprising, makes one wonder or is important.

4. Sketch. Choose something to sketch. Sketch several views. Sketch a view of great depth. Sketch something tiny. Spend much time on one spot or do many sketches of a variety of things. The purpose of the sketch is to generate ideas and gather information.

5. Transformation. Demonstrate simple instructions on a variety of techniques and materials (markers and watercolour, resist, tempera paint, coloured pencils). Paint what is important in the environment to be shared with other children who don't know about this environment.

6. Write. Dictate or write what words should be displayed or read to the other children when they see the artwork.

7. Respond to the work of the other children. Choose a work to look at more closely. Talk about the painting. Write a letter to the artist.

## *The artwork and writings*

The paintings are best viewed and understood in a gallery where the audience, be it children or adults, can respond to the work immediately. In some ways the work begs to be excused from analysis. It is vibrant, full of emotion and content that is difficult to translate into words. It is beyond the scope of this chapter to describe the entire body of work produced. However, through

description of a few exemplars I hope to begin to describe what the children think and feel about their environments, and the strategies they chose to express themselves.

The environment was often depicted as a setting for action, a place where the children did things. These were most often descriptive, painted simply and directly, with accompanying plain text explanation. They might describe the environment as a place where they fish, surf or hunt, or where farms or buildings existed. The environment acted as a space for these events and description of events was the strategy used to convey their knowledge.

Many children painted the animals and the environments in which they live. The animals were rarely isolated; the food and shelter they needed for survival was prominent in the work. The children knew about the relationships between animals and the environment, and eagerly painted and wrote that knowledge to their peers.

The environment was also experienced and painted as a place of wonder, full of sensory experiences. The children painted sounds and wrote about sounds, colours and the feelings they have when in nature. The paintings and words reveal strong emotion and connection to the environment as a special place, sometimes a refuge. The environment is as a place of aesthetic experience.

In Albuquerque, New Mexico, the walk near the school took us across the playground and over an irrigation ditch by way of a few boards reaching from one side to the other. One five-year-old used a black magic-marker to draw a line across the middle of his paper. On the line, representing the bridge across the ditch, stand four people, symbolised by simple figures consisting of a round body, topped by a round head with two dots for eyes. Two lines extending out the bottom of the round body as legs and two lines with three branching fingers for hands extend out the sides. A blue watercolour wash fills the area under the bridge, and a pale brown wash begins at the bridge surface behind the figures, and gradually darkens and then changes to a band of green blue and purple as it nears the top of the page. The child dictated, 'The kids are walking over the bridge and the water is under it in the ditch'.

A twelve-year-old used water-soluble coloured pencils to create the image 'This is a cane train in Cairns' after the walk to a nearby park bordering

canefields in Queensland. The work is divided into horizontal bands. The lowest is a rich black and dark-grey wash. A detailed drawing of a red–orange vehicle pulling two wire cars filled with yellow cane is dominant against a background of canefields. A pale, transparent band of blue–grey suggests the sky at the top of the page.

Both of these children suggest that the environment is a place of action, a place to do things, a setting where activities take place. The painting and writings are descriptive of the immediate personal experience during the workshop. The experiences of walking across the boards and viewing the cane train and fields were important events that took place within the local environments.

The environment is also home to things that the children loved, especially animals. Many animals, in all of the local environments, were painted. The paintings and writings revealed a wealth of knowledge and a great depth of feeling. Animals were cherished, described, hunted and eaten. Their needs and place in the environment was made evident in both the paintings and the writings. The children and animals exist together as part of the larger environment.

One painting by a five-year-old depicts an echidna, whose brown, spiked body fills the bottom half of the painting. Viewed from the side, the echidna has a dark eye and wide red smile. The top half of the painting is filled by a tree. The main trunk, a narrow black line, is near the right edge of the paper. Its branches fill the entire rest of the page, growing horizontally to the far edge. This improbable branch makes two right angle turns so that the entire sky area, a dark blue, is filled with the branches of the tree. A small smiling red sun appears in the top right corner. The child dictated, 'All right. The echidna was hungry. He was looking for some ants and he found some. And the tree was nearby that gave him shade'. A kindergarten class in New Mexico responded with the following in a group letter:

> Your painting is very nice. We like it because of the echidna. It looks like the echidna is under the sand. I like the echidna that eats the ants. I like all of the colors and how the leaves are spreading apart.

The echidna, and its need for food and shelter, is painstakingly painted. One work, more abstract than many, by an eleven-year-old, depicts a small black turtle with grey and white feet. The turtle is dominated by two large mandala-like figures made of yellow, red and black lines decorated with dots. The centres are white circles. The text for the painting reads:

> The turtle is swimming in the water. My dad likes to hunt for turtles. Sometimes he catches them and brings them home. We like to look at the turtle for a while and then dad cooks it. They taste nice.

Looking at the turtle and appreciating its taste enter the realm of sensory experience and aesthetics. The children were acutely aware of the possibilities for wonder and refuge in the environment.

One eleven-year-old painted a large blue crane, its feet touching one edge of the page and the beak the other. One wing extends down and is tipped in black. The entire background is painted in shades of blue, mottled by flecks of white, light blue and black. The feeling is one of movement and power. 'Thousands of sandhill cranes migrate to New Mexico. If you're lucky you can hear the wind go through their wings' reinforces the nature of this child's experience in the environment. It is a place where wondrous things can occur if you pay attention.

A large sun, covering more than half of the top of the painting, and large green hills which fill three quarters of the remaining space are the background to a self-portrait of one child. The shoulders touch the bottom of the paper and her head, with large blue and white eyes, lightly pencilled nose and mouth fill the bottom half of the page. Long brown hair and skin stand out against the green hills. This child wrote, 'My painting is showing my favourite place. Sometimes I go there when I'm sad, lonely, and most of the time I just go. My friend and I usually play there'.

Another child responded, 'Me and my friends also have a special place to go to, too. The place is near my house'. For some children, the environment is the place to go for comfort as well as play.

The paintings and writings also teach us about the strategies that children choose to employ in telling about the world. Description and simple

explanation of knowledge is one strategy, but the children also used story and more poetic language or metaphor to express their thoughts and feelings.

When using story as a strategy they told 'true' stories from their own experience, or they related the history of a place. 'We all have a personal story, and that is our primary way of knowing' (Drake 1998, p. 98). For some children story was the chosen way to communicate. They also invented stories to explain relationships and to tell what might someday happen. The stories served to establish meaning; they united cognitive and affective meaning. 'The story, then, is not just some casual entertainment; it reflects a basic and powerful form in which we make sense of the world and experience' (Egan 1988, p. 98).

One eleven-year-old used coloured pencils to create a ground-level view of the butterfly garden at the school. Plants, a bench and painted rocks line up on a ground line about a quarter of the way up the page. Sky fills the background and the sun lights the right upper corner. The story of the garden is being told in both the painting and words:

> The butterfly garden is one of the greatest places in the school. We planted some of the trees to remember our teachers. One of them was planted for our old art teacher. As you can see in the picture, the rocks are painted. We just wanted a change.

This history or story of this very important part of the environment is told through the artwork.

Two children, one five and the other twelve, painted scenes with animals. The first shows four birds in various positions on the paper, with two children playing on a swing set on the left side. 'The mother gave the baby some food and the father he was protecting the little ones. The big bird flew over the top. They all live outside in the country. They can see the playground, but they don't fly over when the kids are playing. The birds pick out the food that they want', dictated the child, explaining what she knew about the birds by placing them in a family story. The other child painted a large brown rabbit in the centre of the page, with other animals behind and around it in the background. The story says 'The wolf is chasing the rabbit for food.

The antelope are watching the horrible chase, and they're getting ready to run! Later on the coyote is going to eat the scraps from the rabbit'. Story provides a context and way for the children to tell what they know and feel about relationships within the environment.

One five-year-old painted a self-portrait, placing himself alone in a boat with a large swordfish in the water below. Smiling faces mark the child, flying bird and fish. The child dictated, 'I went out in the boat all by myself and I did fishing. There is a swordfish – they eat fish. The sword is on the end by its mouth. I saw fish and a flying bird'. Someday in the future he probably will fish alone; story can help to create the future.

Many children wrote in a poetic voice, transforming their experiences and observations through metaphor and language that evoked emotion and wonder. To be a metaphoric thinker is to be a constructive learner, one who actively builds bridges from the known to the new (Pugh, Hicks & Davis 1997). A five-year-old describes brightly painted orange, blue, yellow, green and pink striped eucalyptus leaves with these words. 'The gum leaves blew in the wind. Imaginary hearts... They almost touched the moon'. The words and paintings take us far beyond a description of actual leaves. An eleven-year-old painted a large cottonwood tree, with twisted branches and no leaves, against a blue sky. The words suggest infinite possibilities and advise the audience to pay attention:

> Cottonwood trees are my favourite kind of tree. Their branches are like they blow in the wind. And, when you sit there, you should study all of the branches. I also love climbing in them. You can climb to each branch and never stop.

## Conclusion

The children who participated in the 'This land we walk' project joined in the venture with open hearts, and demonstrated a passion for the environment and sharing with others. A process that included interdisciplinary arts provided them with multiple ways to express what they knew and wanted to share about the environment. Their ideas took the form of images and words. Students were engaged in an activity that used drawing and writing for an authentic purpose – that of thinking, understanding and communicating

with others. They formed a community of peers across two continents that started a dialogue that will continue through letters and electronic mail.

The children teach us to go beyond observation, to not stop with a first conclusion, but to 'go inside an observation, to sit with the student to ask their intentions, to learn' (Ernst 1994, p. 109). The strategies they use to learn and to express that learning, be it description, story or metaphor, invite us to broaden our expectations and provide multiple ways for children to express themselves. By respecting our students as learners capable of deep thinking and feeling, we can move classroom experience beyond the teacher's expectation to a collaborative vision that broadens possibilities. One of the most crucial things a teacher can know is that the 'wondrous part of the process comes not from the teacher but from the children and their potential' (Walker 1993, foreword). The children who painted and wrote so passionately and intelligently about their environments have much to share, teach and express.

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15

# Leisure places – self, space and others

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## Introduction

*Most of the people I know do my kind of things.*

*I play heaps of sport – I used to play for a team but I gave that up – actually I got kicked off the team. I play badminton. It's good.*

*During the week I hardly go on it but Fridays and Saturdays I usually spend all night on it in chatrooms – like 8.30 or so when the others go to bed until 6.30 in the morning.*

*I've got a CD player. I usually sit in my room, listen to music when I'm stressed out ... probably just to get away from myself – it's the most relaxing place other than the computer.*

*Town – it's probably my home away from home. I go in to town after school every day. We just walk around – it's just like being at school – you've got your friends there I can't talk to my friends at home – my brother likes most of my friends.*

*I watch the boys at the skate park – there's a fair few girls that watch – they don't skateboard.*

*I like playing with the dog.*

*I've got a Walkman – I listen to it every now and again. I like heavy metal.*

*I like sport – this year I played football (for two teams) and basketball and now we're playing cricket. Sport keeps me out of trouble – keeps me busy after school.*

*I like swimming – go to Windmill Hill, the Basin. Go up every weekend and after school some times. Girls go too – it's not just a boy's thing.*

*I go into town after school two or three times a week – mainly just sit in the mall – talk.*

*I use chatrooms and MSM – about half of them (contacts) are from school – the rest I've met online – friends of friends. I've met some of them in person.*

*I like skateboarding too. Get down there twice a week. It's mostly boys but there's a few girls who skate and roller blade and the rest are just girlfriends.*

Spending some time listening to young people or observing their social activities is one sure way of 'seeing' the world in new and different ways. In fact, your head is likely to be spinning from the contradictions seemingly embedded in their activities.

The comments from adolescents at the beginning of this chapter highlight the variety in young people's leisure and give some indication of the complexity of places and spaces visited during the course of a 'normal' week. Whether alone or with others, at special locations for private and reflective thought, or those they create and control themselves, the descriptions are of worlds with boundaries that belong to a time quite different from previous generations. It is not just that time–space compression has brought friendships in virtual space to local neighbourhoods. It's all the gadgets that form part of the electronic smorgasbord and innovations in personal mobility. The scooter and its predecessor, the skateboard, create more flexible and perhaps simpler and cheaper modes of transport. The 'Walkman' means that you can have your music with you anywhere you go. Plus, the mobile phone is fast becoming a link to e-mail and text messages when not near your personal computer. A completely self-contained, mobile world with minimum weight can be with you all the time.

Dream time for some, but the reality of this 'young on the move' world seems closer than we dare to imagine. Unlimited physical boundaries, instant communication and personal physical mobility enable young people to create new geographies that are constantly on the move (Mitchell 2000; Skelton & Valentine 1998). Consider for a moment the world traversed by the young boy or girl at the helm of the scooter. Not only is there the issue of personal proficiency with the instrument. There is the continual rush of adrenaline

from deciding which path to navigate, how to negotiate around people and both physical and built objects – all decisions which need to be taken in a split second of time. Couple this with the Walkman pumping heavy metal music into the ears and the individual private world of the fit, young and healthy is 'all together'. The simultaneous sounds that fill the ears compete for their cognitive space along with reactions to the ever-changing ground surface over which the scooter or skateboard navigates its often perilous path.

Parents, teachers and the adult world who may regard themselves as the custodians of young people could well feel it's all a bit too much. We adults may fear the harm these new freedoms can bring to young people. We may secretly yearn for the old days when we knew at any time where they were and with whom they were spending their time. At the same time, the image created by the scooter-bound girl or boy sends off a feeling of exhilaration and energy which seems confined to the young, if only because they seem to have the time to indulge such behaviours and are sufficiently robust or fearless not to consider the consequences of falling, breaking a limb or endangering the lives of others. Whether or not you feel excited or depressed by their behaviours, there is a reality of the experience which challenges us to reconsider the perennial educational question – that is, the content of young people's everyday lives and how the knowledge gained integrates into their emerging identities and personalities.

For those who belong to a previous era, who could have imagined in childhood a world where some of our most regular contacts would be with people living in places on the opposite side of the earth's surface? The immediacy and convenience of the information and communications technology (ICT) has transformed our lives irrevocably. For children born into this world of time–space compression there has been no other way of life. Time–space compression, popular culture and the powers of the Internet bring diverse reference systems to the everyday lives of young people (Barnes & Gregory 1997; Benko & Strohmayer 1997; Harvey 1996; Massey 1994; Peet 1998; Pile & Keith 1997).

Just how the globalisation of everyday living helps shape the thinking of young people ought to be at the forefront of the minds of all curriculum designers. This is no time for clinging to traditions. New geographies are

being made at personal levels which bear little relationship to the local neighbourhood boundaries of living in former times (Crouch 1999; Harvey 2000). For we who are the decision-makers in this brave new world the reality of these perceptions set in real and virtual spaces must be the focus of our attention now. Part of the reflection process is acceptance that we no longer exist in a small community regulated by known tenets. We need to recognise that identities of youth in postmodernity are linked with social constructions of place not necessarily aligned with traditional views of neighbourhood and 'home'.

Reinventing our own ways of thinking seems to be the only smart way to remain relevant in the current contexts. Recognition of our shortfall in knowledge is a good start. However, conducting this reflective process and designing the futures of young people requires a consultative approach. Imagining the future through the eyes of young people appears to be the only way to build the necessary partnerships for constructing better and more relevant school curriculums.

In this chapter I endeavour to explore in some detail questions raised in this introduction through an examination of what we know about the less formal leisure and recreation activities of young people. The focus is on their informal use of time or time over which they have some control and personal decision-making. Indications from my own research (which includes the quotations at the beginning of the chapter) and that of others, as well as comments from observers of youth, points to a complex but fascinating set of competing tensions. Equally important to our understanding of the youthful experience are the strategies they create for solving personal dilemmas in time, space and place. It's not simply the digital divide that separates the world of young people from many of their adult family and friends. Young people are taking risks in these new spaces of reality and are coming up with solutions that may never occur to the adults.

Using research findings from several recent studies, I begin with an examination of some theoretical views of 'space'. As space is one sure dimension of human experience, some boundaries that enmesh the content of spatial experience(s) help the analysis. This discussion suggests that, while 'space' is subjectively defined, there appear some objective dimensions in terms of its design for private, public and/or communal use.

## Space and architecture

The idea of private, public and communal space begs an architecture metaphor that relates space to built constructions. Towns and cities are designed around public spaces in parks, walkways, transport systems and buildings. Equally present are spaces where gatherings of people take place for shared or communal activity, such as in civic squares, schools, theatres, churches and, more recently, Internet cafés. Finally, private spaces exist in the confines of buildings such as offices, telephone booths, department store change rooms and bathrooms. Shifting into the home can provide the same divisions. The living room, kitchen and possibly parts of the garden are shared spaces; halls and paths provide the 'public' passing-through spaces, and the bedrooms provide privacy for individual family members.

All of these spaces are bounded physically and function according to rules and accepted moral values of the population who make use of them. They display as LeFebvre describes 'form, function and structure' (1991, p. 148). At the same time, these spaces of location and self have evolved over time as social constructions built on emotion, values and beliefs intrinsic in cultural difference. In *The production of space*, LeFebvre (1991) sets out his theory of space within the 'conceived, perceived and lived' triad – a social construct where 'Spatial practice regulates life – it does not create it' (p. 358). Such practices create contradictions, no more present than in the spaces that exist for 'consumption of space which produces surplus value and one which produces enjoyment – and is therefore 'unproductive' (p.359). Roads and spaces for cars support the production systems, whereas tree-lined avenues support the pleasure consumption – they accrue social value but are unproductive spaces.

To introduce an alternate social theory of spatial difference, Triandis's (1995) explication of the individualism versus collectivism distinction adds a further dimension for analysis of spatial difference based on cultural influences rather than economic asumptions. In Triandis's (1995) view, culture-specific differences exist in the shared behaviours of people. 'Eastern' cultures are more likely to exhibit collectivism and 'Western' cultures are more inclined to individualism. Collectivism is defined as 'a social pattern consisting of closely linked individuals who see themselves as parts of one or

more collectives (family, co-worker, tribe, nation); are primarily motivated by the norms of, and duties imposed by, those collectives...' (p. 2). Individualism is 'a social pattern that consists of loosely linked individuals who view themselves as independent of collectives; are primarily motivated by their own preferences, needs, rights and the contracts they have established with others...' (p. 2). Hence, while the former characteristics are more likely to be features of the peoples of China, Japan and India, the latter are more likely to be found in the USA, Britain and Germany. However, Triandis makes the point that characteristics of both profiles are likely to be found in all countries.

Considered from the perspective of personal privacy, Triandis argues that individualists are more likely to value and seek the privacy of personal space. Collectivists do not have the same needs and are likely to be intolerant of superficial behaviours and unwillingness of individualists to disclose personal details (Triandis 1995). Admittedly much more complex than this simple division suggests, the distinction gives pause for reflection concerning how different cultures arrange the form, function and structure of their built and abstract spaces.

Returning to LeFebvre (1991), he uses debate as a strategy for explaining such cultural difference. The voice of a Japanese philosopher well illustrates the language discourse of collectivist societies:

> ...The boundary lines between rice fields are not stone walls or barbed-wire fences, but rather dykes which are an integral part of the fields themselves. When I contemplate this character, this rice field, I become the bird looking down from the optimum vantage point vertically above the centre of the field. What I perceive, however, is more than a rice field: it is also the order of the universe, the organizing principle of space. This principle applies as well to the city as to the countryside... We do not separate the ordering of space from its form, its genesis from its actuality, the abstract from the concrete, or nature from society. There is no house in Japan without a garden no matter how tiny, as a place for contemplation and for contact with nature ... Nature and divinity in the first place, then social life and relationships, and finally individual and private life – all these aspects of human reality have their assigned places. (LeFebvre 1991, pp. 153–54) [1].

The Japanese Buddhist philosopher is critical of Western civilisation for building cities based on structure alone, arguing that the Japanese approach is superior because 'it has a concrete logic, a logic of the senses' or 'a living discourse' (LeFebvre 1991, p. 156) – such as that of the ancient Greeks.

The rejoinder to this viewpoint is to see power and oppression in such 'rationality' of abstract and concrete space (p. 157). 'Westerners ... might be more inclined to see it as an authoritarian definition of space–time totality'(Le Febvre 1991, p. 158) or an attempt at environmental determinism (Hirsch 1995). Indeed, much of the postmodern theorising has been based on promotion of new discourses to explain difference (Gregory 1994; Harvey 2000; LeFebvre 1991; Soja 1996), gender (hooks 1990; Massey 1994; McDowell 1999) and minority (Bhaba 1994). Bounded identities, either from the inside or outside, of defined spaces are an accepted reality of post-structuralist existence. Mobility, both real and actual, adds to the confusion of 'hybridity' of social values. This is especially present in the large cities of the world and is a fact of everyday life that seems to transcend national culture. Homogenising global features in their structures such as rapid transit systems, transnational business operations and commodification of local economic structures creates new spatial politics each with redefined patterns of inclusion and exclusion (Gregory 1994).

The points were well illustrated at the 2000 UNESCO–ACEID International Conference on Education, held in Bangkok, where the Ministerial keynote speaker (see <http://www.unescobkk.org/education/aceid/conference>) spoke of her concern within the Asian region of the newly emerging cultural tensions associated with the spread of Internet access, particularly among the young. The value system of the 'Net is considered Western and a threat to traditional family values and intergenerational behaviours. Furthermore, the predominance of English as the language of communication is viewed as likely to widen the gap between parents and children. Children are seen as having some access to new technologies through school and more adaptable to change aligned with popular culture.

1 Tuan's construct of topophila (1974), or the affection one has for place, is a way of recognising the cultural order of perceptions. The gardens and landscapes depicted in the poetry, paintings and paintings of Chinese artists show strong connections to eastern philosophy including Taoism, Shanmanism and Buddhism (1974, p.128). Similar connections can be seen in European art forms. These highlight omissions in representing the landscape and the content of perceptions at the time.

An interesting aside to this major concern in the city of Bangkok are more visible changes. The newly developing, above-ground rapid transit urban train system in Bangkok is a good example. Its fare structure is high, in order to pay for the much-needed development. But only the wealthy have access because of the cost. Exclusion takes on another meaning.

To explain the social patterns that are emerging in cities such as Bangkok, the notion of 'insider' and 'outsider' behaviours is useful. At the same time, McDowell (1999) and others maintain that arguing from a position of being different from the 'norm' may no longer count. Global change has so unsettled traditional city life that theorists are now considering a new perspective built on fluidity. McDowell argues that: 'Theorists interested in hybridity ... must jettison the term 'difference' itself ... it is now asserted that all identities are a fluid amalgam of memories of places and origins, constructed by and through fragments and nuances, journeys and rests, of movements between' (p. 215). There is also a danger that previously settled existences, under threat because of changes in youth expectations, work opportunities (demise of the British coal mine industry during the Thatcher era of the 1980s), or political and religious ideology (such as in the Middle East, Indonesia and the Philippines), become scenes of unresolved tension which can, when left unresolved, lead to violent backlash. In such circumstances, clinging to 'the way things were' can fuel the problem.

Writing on gender, identity and place, McDowell makes good use of the travel metaphor and the displacement that can occur with cultural movements to new countries, new towns or simple shifts to new neighbourhoods. Research quoted shows that, where the community has undergone considerable social reconstruction, harmonious change is most likely where dialogues are shared, and accepted – either with indifference or tolerance. The built environment, with its design steeped in local history, may dominate the physical look of the city long after any marked social change has occurred. At the same time the people who use the spaces can operate in new and less divisive ways.

In this section I have attempted to provide a background to issues that are relevant to youthful experience. The issues are complex and likely to be undervalued in such a brief exposition. Nevertheless, in order to make sense of the experiences of everyday living expressed in the statements at the

beginning of this chapter, a theoretical overview can provide a starting point for shifting to more transitory views of reality. What follows is an attempt to analyse findings of research into the leisure experiences of young people, based on LeFebvre's view of the form, function and structure of space – be it private, public and/or communal, in juxtaposition with Triandis's definitions of social behaviours as collectivism and individualism. In some small measure this is an attempt to make sense of difference in a social melting pot such as Australia, where Western economic systems are more and more challenged by interpretation and reinvention based on philosophical discourses far removed from Western capitalism. Some cross-cultural distinctions are introduced with a final comment that relates to nature, place and identity.

## Research findings

Most of the findings reported relate to a continuing data collection process designed to gain insight into young people's use of unstructured or 'free' time. The stimulus for the conversations reported relies primarily on a photographic collection of fifty images of activities, places and social contexts known from existing research (Sibley 1995; Skelton & Valentine 1998; White 1999) to represent the kinds of social experiences most valued by young people. These include: privacy at home and in public spaces; personal space that is 'free' of parents and scrutiny of authority figures such as teachers; the need for socialisation spaces with friends, both in public and private locations such as sports, cinemas, shopping malls and concert venues; and access to nature or 'clean and peaceful environments'.

Individual interviews have been the context of data gathering. The photographs are arranged on a large table for the students to view. Each person is asked to select the images of places or 'things you like to do in your leisure time'. These photographs then became the stimulus for a conversation designed to probe for information concerning the young person's preferences and where possible related beliefs and values. While the latter was not the main object of the interviews, our experience has been that much of the person's inner world is revealed through responses to the images. Interviews last approximately thirty minutes, and conversations cover such topics as personal privacy, social rules for behaviour, use of computers and attitudes to

family and friends. A fascinating discovery has been dimensions of boundaries that young people set for themselves in terms of rules and accepted codes of peer group behaviour.

In order to highlight differences that may be attributed to age and development, our research so far has taken samples from eleven-year-olds in upper-primary schools and fifteen-year-olds in secondary school systems. Location-specific differences have also been taken into account, with schools being chosen to reflect distinct geographic and socio-economic contexts. At the same time, and to give credence to the opening argument regarding cultural differences, data are now being collected in a number of countries, with the intention of attempting to measure the impact of globalisation on the youth perspective. Some of these findings follow, and include data collected in Australia and in Finland.

## Four-part model analysis

The results so far have provided a rich and expansive data base open to multiple forms of interpretation. Several of the approaches taken are briefly reviewed. First, an analysis based on the proposed four-part model of behaviour as described in the opening argument. That is:

- **Private – individualism:** behaviours that occur in private spaces (may be real or imagined) and are based on being alone or solitary
- **Private – collectivism:** behaviours in private spaces such as family contexts but where the behaviour is essentially personal and private
- **Public – individualism:** behaviours in public spaces such as cyberspace (includes 'grrl power') that are seemingly unbounded by others
- **Public – collectivism:** behaviours that occur in public space and with others who share the activity and its 'rules'.

Table 1 provides selected comments taken from the Australian interviews to illustrate the four dimensions. At first glance some of the comments may appear to belong in multiple quadrants. This is seemingly one of the unresolved tensions associated with qualitatively based research. However, in defence of the decisions taken regarding the categorisations, some decisions have been made on the basis of nuances gained from the total interview for each person.

*table 1* ***Comments reflecting individual behaviours in public and private spaces***

| INDIVIDUAL BEHAVIOURS | | | |
|---|---|---|---|
| **PRIVATE SPACES** | | **PUBLIC SPACES** | |
| **MALES** | **FEMALES** | **MALES** | **FEMALES** |
| 'I love pets – love dogs – always wanted a Staffy – now I've got one. He walks around, does what he's told – he looks after me.' (boy 15 years)<br><br>'I usually go to the beach. When Dad was alive I used to go a lot – have been round the state. Just sit there and switch everything off – just sit there and relax.' (boy 15 years)<br><br>'I've got everything interesting, everything I like in my bedroom (TV & computer). It's just like a little house to me.' (boy 15 years)<br><br>'I like watching river ways going through. See this at the creek or up at Nan's farm.' (boy 11 years)<br><br>'I play Leggo. I love playing Leggo. All my friends do, too. I build my own models. Anything I see on TV that I like.' Says he also builds things he reads about in novels. Asked what he likes about Leggo – 'You get interested and you like the struggle – 'I can't find this block' and then you find it and you're happy and you want to do more and more of it.' (boy 11 years)<br><br>'I like going there [skate board park] because I like it as a sport and it's like escapism for me. I go there to forget everything that's happening to me.' (boy 15 years) | 'I've got a CD player. I usually sit in my room, listen to music when I'm stressed out'. Goes there to 'probably just to get away from myself – it's the most relaxing place other than the computer'. (girl 15 years)<br><br>'It's [the beach] quiet – no-one's there – you can just think and see every thing round you. It reminds me of the bush – you can yell if you want – you're the only person there and if you want to go back into the real world you can – where everyone is' (girl 15 years)<br><br>'I like to listen to music loud.' Likes being in own room because it 'has a great view and is comfortable and homely. You can do what you like ... private stuff and no-one comes in.' (girl 15 years)<br><br>'I like going to the park – somewhere peaceful and quiet.' (girl 11 years)<br><br>'I listen to a lot of CDs. I like music.' Listens in the lounge 'full blast'. 'You can listen and you can do other stuff around the house.' Likes to listen 'whenever everyone's out of the house.' (girl 11 years) | 'Fridays and Saturdays I usually spend all night on it [the home computer] in chatrooms – like 8.30 or so when the others go to bed until 6.30 in the morning. They [parents] don't care they're used to me going to bed in the morning and getting up late.' (male 15 years)<br><br>'I'm a pretty keen surfer.' 'It's the adrenalin of seeing this big wave ... it's a really good feeling.' (boy 15 years)<br><br>'I like the movies. Can't really sit there for 3 hours – Intencity is best.' (boy 11 years)<br><br>'I usually go swimming after school. You can go on the diving board and stuff like that. Dad has a rule that we have to be able to swim the length of the pool before we can go on the diving board.' (boy 11 years)<br><br>'Sometimes I go to the movies up at the Video City. Sometimes my friends invite me. We do it as a treat. If we always go we get bored.' Likes going to movies without parents because 'no-one tells me what to do.' (boy 11 years)<br><br>Likes McDonald's stores because 'they're nice and peaceful and you don't have to listen to cars going past all the time.' (boy 11 years) | Re. A favourite place: 'The skate park. When I'm in town I usually go to check out the boys there.' (girl 15 years)<br><br>'Friends – they're very important. They're just always there. I've been through hard times this last term and they've just been there. I have friends from netball and basketball and my primary school and I meet people in town.' (girl 15 years)<br><br>'Sometimes when we're in town we'll get some lunch and go to a park and eat.' 'There's trees and it's clean and it's a nice environment.' (girl 11 years)<br><br>'I like swimming in the beach except for the sand. I like snorkelling looking for crabs – then we have crab races. We went with the guides to one of the guide's shacks at Green's Beach.' (girl 11 years)<br><br>'When we go shopping we usually go to the KMart as a family. It's alright. Sometimes I don't like it when we go somewhere and Mum and Dad want to look at stuff like tents and we can't look at toys and we try to occupy ourselves and get in trouble for running around and stuff. I like it when mum and dad let us go into the toys.' (girl 11 years) |

*table 1, continued* ***Comments reflecting collective behaviours in public and private spaces***

| COLLECTIVE BEHAVIOURS | | | |
|---|---|---|---|
| PRIVATE SPACES | | PUBLIC SPACES | |
| MALES | FEMALES | MALES | FEMALES |
| 'I play heaps of sport – I used to play for a team but I gave that up – actually I got kicked off the team. I play badminton. It's good.' (boy 15 years)<br><br>'I like swimming – go to Windmill Hill, the Basin. Go up every weekend and after school some times. 'Girls go too – it's not just a boy's thing.' (boy 15 years)<br><br>'I like going into town and buying stuff. I look for clothes mostly – skateboard clothes – Red Cherry, Planet surf.' (boy 11 years)<br><br>'I love playing with my dog – Border Collie – I take her for runs cause we go on the motor bike – we have a track behind our house (we've got two Hondas) with my big brothers.' (boy 11 years)<br><br>'At home I've got my own Sony Play Station. I like to have a few games with my dad. I'm not like one of those freaks who stay on it all day. It's kind of like out of the usual ... they're kind of hooked on to it ... it's like they're kind of brainwashed. It limits what they can learn at school.' (boy 11 years) | Town – probably my home away from home. I go in to town after school every day. We just walk around – it's just like being at school – you've got your friends there I can't talk to my friends at home – my brother likes most of my friends.' (girl 15 years)<br><br>'I used to play basketball – I was a good basketball player but they didn't put me in. I was the outcast – didn't fit in. Most of the teams are like that.' (girl 15 years)<br><br>'We rollerblade up the street – it's a dead-end street. I'm waiting to grow into my sister's. I've got roller blades but the boys tease me across the street.' (girl 11 years)<br><br>'I like to ride my bike. We've a big park outside the back of my house and there's bush behind it and me and my brother ride in the bush. It's usually quiet and fun and you get to go down the hills really fast and there's all these really big bumps.' (girl 11 years) | 'I go to the skateboard park on the weekends – sit around and talk and ride around on my skateboard – meet my friends.' (boy 15 years)<br><br>'The Basin is my favourite place I just go up there and jump off the rock – have a bit of fun. I've got a friend who goes there – we have competitions to see who can do somersaults off the highest rocks.' (boy 15 years)<br><br>'I go into town a lot with my friends looking at bikes, but I'm not like that [response to group photo in street scene]. I'm the opposite of that.' When asked to explain he describes the people in the photo as being 'real covered up ... druggos and stuff. They wear beanies and stuff and baggy stuff.' (boy 15 years)<br><br>'There's a few parks near my house, about three. If I've got one of my friends with me we play "chasies". My brother likes to be "it". Otherwise I'll just talk with my friends or play on the equipment. We talk about movies, video games, TV shows, sometimes things about school and stuff.' (boy 11 years) | 'I like going to concerts.' 'Most of the people I know do my kind of things.' (girl 15 years)<br><br>'When I'm at home I usually use the Internet. When I get home (from school) I log on and chat and stuff – then I stop to watch TV and log on again later. My sister can't use it much – I'm always on it.' (15 year old girl)<br><br>'I really love the beach ... swimming in the water and going for walks on the beach. I meet people there as well.' (girl 15 years)<br><br>'I like going shopping with my friends. Trying on clothes and stuff like that. I get to see my friends outside the school environment. You can't talk much at school – the teachers tell you off.' (girl 15 years)<br><br>'I like shopping. Me and my sister usually go to Pricecutters and things. I like the AFL shop – got all football things – (supports Carlton) – and family things.' (girl 11 years)<br><br>'Normally Mum takes me to see the movies I really want to see and she gives me $5 or $10 to spend at Intencity. Sometimes I take friends with me. I like just going with a friend; you can spend more time at Intencity. If Mum comes she wants to go to all the shops.' At Intencity 'you can be challenged'. (girl 15 years) |

The search for privacy appears in a number of ways. It can be to retreat to 'my bedroom' – a personal space that is a bounded space beyond the reach of other household members. This space is 'individual' but can become 'collective' when friends are invited to share the space. The younger children showed more willingness to share with a parent, such as the eleven-year-old boy who 'likes to have a few games on the Sony Play Station with Dad'. The fifteen-year-olds seem more inclined to listen to music either via their personal CD players located in their bedroom or a Walkman for private listening. 'I've got a Walkman – I like heavy metal' stated one fifteen-year-old girl.

Other spaces for privacy seem linked to nature such as: 'I like going to the park somewhere peaceful and quiet' (eleven-year-old girl); 'I like watching river ways going through' (eleven-year-old boy); 'It's [the beach] quiet – no one's there – you can just think and see every thing round you' (fifteen-year-old girl).

Collective behaviours seem signalled by sport participation, going to town with friends and family members, and to certain places that form part of the local youth cultures. The skateboard park, local swimming pool and shopping mall were commonly noted. However, within these public spaces some behaviours seem to be distinctly individual and not bounded by collective rules. The fifteen-year-old boy who spends all weekend nights on the Internet in chat rooms seemed to express defiance in attitude and enjoyment at harassment of other people in these 'public spaces'.

## *Applied to favourite places – a cross-cultural view*

The young people sampled for the interviews also formed part of much larger sample in both Australia and Finland who completed a survey questionnaire of their leisure activities (Robertson & Rikkinen 2000). Designed to provide empirical evidence for sample comparisons, the questionnaire contained a series of open-ended questions related to places and specified as 'favourite', 'safe', 'happy', 'scary' and 'alone'. Using a phenomenographic technique developed in previous research (Abbott-Chapman & Robertson 1999; Robertson 2000; 1994) responses were categorised for meaning. Table 2 contains the results of that analysis[2].

2 With acknowledgement to my colleague, Professor Hannele Rikkinen, University of Helsinki, for permission to reproduce these results.

*table 2* ***Category responses for 'favourite place' questions***

| | | AUSTRALIAN (percentages) | | FINLAND (percentages) | |
|---|---|---|---|---|---|
| **'PLACES'** | | **11-year olds N=218** | **14-year olds N=290** | **12-year olds N=117** | **15-year olds N=138** |
| Favourite | Home | 22.0 | 7.9 | 17.9 | 10.9 |
| | Bedroom | 8.7 | 4.1 | 17.1 | 15.9 |
| | Friends | 6.0 | 5.5 | 1.7 | 2.9 |
| | Bush/nature | 12.7 | 15.2 | 13.7 | 13.0 |
| | Beach/river | 8.7 | 15.2 | 6.0 | 5.8 |
| | Town/shops | 7.8 | 8.3 | 6.8 | 15.2 |
| | Sport/events | 8.7 | 3.8 | 20.5 | 6.5 |
| | Interstate and overseas | 16.5 | 7.9 | 0.9 | 0.7 |
| | Grandparents | 2.8 | 2.8 | 5.1 | 2.9 |
| | Disco | 6.4 | 29.3 | 5.1 | 2.2 |
| | Other | | | 5.1 | 6.5 |
| | NR | | | | 17.4 |
| Safe | Home | 73.9 | 64.8 | 62.4 | 57.2 |
| | Bedroom | 10.1 | 5.9 | 12.8 | 5.8 |
| | With friends | 2.8 | 3.8 | 1.7 | 9.4 |
| | School | 3.2 | 1.4 | 1.7 | 0.7 |
| | Nature | 1.8 | 1.4 | 3.4 | 1.4 |
| | Church | 0.0 | .3 | 4.3 | 2.2 |
| | Other | 3.2 | 5.2 | 10.3 | 14.4 |
| | NR | 5.0 | 17.2 | 3.4 | 8.7 |
| Happy | Home | 39.0 | 22.1 | 36.8 | 25.4 |
| | With friends | 22.9 | 29.0 | 4.3 | 17.4 |
| | Town/shops | 6.4 | 4.5 | 3.4 | 5.1 |
| | Country/beach/ nature | 7.8 | 7.9 | 4.3 | 0.7 |
| | TV, computer | 1.4 | .7 | 1.7 | 0.7 |
| | Neighbourhood | 8.7 | 5.2 | 10.3 | 3.6 |
| | School | 4.6 | 3.4 | 0.9 | 0.7 |
| | Different places | 4.1 | 2.1 | 12.8 | 7.2 |
| | Sport places | 5.0 | 25.2 | 5.1 | 15.2 |
| | Other relatives | | | 6.0 | 2.9 |
| | Other | | | 3.4 | 4.3 |
| | NR | | | 11.1 | 16.7 |

*table 2, continued* ***Category responses for 'favourite place' questions***

| | | AUSTRALIAN (percentages) | | FINLAND (percentages) | |
|---|---|---|---|---|---|
| **'PLACES'** | | **11-year olds N=218** | **14-year olds N=290** | **12-year olds N=117** | **15-year olds N=138** |
| Scary | Night/dark | 19.3 | 19 | 25.6 | 20.3 |
| | Alone/lost/ followed | 8.7 | 5.2 | 9.4 | 10.1 |
| | Unfamiliar place/people | 8.3 | 4.1 | 15.4 | 8.0 |
| | Scary movies | 3.2 | 0.3 | 1.7 | 1.4 |
| | Family trauma | 2.8 | 1.7 | 2.6 | 5.1 |
| | Medical | 0.9 | 1.0 | 2.6 | 2.9 |
| | Adventure/sport | 1.8 | 2.4 | 0.9 | 1.4 |
| | Threatening place/crime | 8.3 | 9.0 | 5.1 | 0.7 |
| | School test | 4.1 | 3.8 | 15.4 | 10.1 |
| | Nowhere | 6.0 | 1.7 | 10.3 | 10.1 |
| | Other | 37.7 | 51.7 | 1.7 | 0.7 |
| | NR | | | | 29.0 |
| Alone | By myself | 14.7 | 22.4 | 10.3 | 18.1 |
| | Home alone | 17.4 | 13.1 | 20.5 | 17.4 |
| | Outside at night | 7.3 | 1.4 | 1.7 | 0.7 |
| | Walking/ travelling alone | 0.9 | 3.8 | 6.0 | 8.0 |
| | Ignored | 7.8 | 2.1 | 2.6 | 3.6 |
| | School | 3.2 | 3.1 | 5.1 | 3.6 |
| | Outside | 8.7 | 5.5 | 1.7 | 1.4 |
| | Nowhere | 39.9 | 48.6 | 11.1 | 5.8 |
| | Can't say | | | 15.4 | 5.8 |
| | Other | | | 12.8 | 7.2 |
| | NR | | | 12.8 | 28.3 |

The importance of 'home' and 'my bedroom' as favourite places, safe and happy places, except when alone for 'home', is common to both samples. The other striking aspect is the influence of nature and related settings such as the beach, rivers and the countryside. Also common to both cultural groups is the predictable change with age as adolescents seek more privacy and the company of others through social settings, such as with friends and at public places.

While insufficient detail precludes the use of the 'four-part model', these results help clarify boundaries around the places most valued by young people.

Some gender differences were noted in the samples. Multivariate analyses using SPSS 9.0.1 for Windows revealed statistically significant differences based on gender for both cultural samples of fourteen- to fifteen-year-olds (< .001) and the Australian sample of eleven- to twelve-year-olds (<.001). Boys seem more disposed to computer and video-related activities, skateboard parks and other outdoor activities such as sports, like basketball. Girls seem more attracted to 'observer' sports such as going to 'town' with friends or to the skateboard park to meet up with friends.

A number of place-related influences also appear in the data. For one Australian school group of fifteen-year-olds, the data point to an overwhelming attraction to nature as a favourite place (39.4 per cent). For this particular school there is a culture of using a nearby natural landscape feature which includes natural swimming pools and plenty of space for shelter and socialising. The responses of this group contrasted markedly with those from the similar age group who live in a predominantly low-income suburban location. Notably 41.2 per cent of the latter did not nominate any favourite place and, as found in subsequent interviews, seemed to be less confident when asked to describe their favourite pastimes and leisure-related activities. No statistically significant differences were noted in the responses for Finnish eleven- to twelve-year-olds on these items. For schools within the fourteen- to fifteen-year-old sample, statistically significant differences were noted for 'alone' places in Finland and for 'favourite' places (<.001) and 'scary' places (<.032) in Australia. What these differences signify is not clear, but they do provide some directions for further interview enquiry. One difference that could be noted between the cultures is the role of sport. Twenty per cent of Finnish primary-school children nominated sport related places as their 'favourite' place. By contrast, the large attraction for the Australian primary-school children especially was overseas and interstate travel; this being a feature of holidays for those who can afford it in the large land mass of Australia.

## *Nature, privacy and identity*

The other striking aspect in our results is the influence of nature and related settings such as the beach, rivers and the countryside. In both Australia and Finland, swimming features as an extremely popular pastime for young people. While the Australian sample makes frequent mention of the 'beach', in Finland the attraction to nature comes through references to summer cottages, lake and sauna lifestyles (see Table 3).

*table 3* ***Nature-related comments***

| FINNISH STUDENTS | AUSTRALIAN STUDENTS |
|---|---|
| 'My favourite place is in the woods. I have built a cottage there. It's fun being there.' (12-year-old male from northern Finland) | 'The river's nice in the morning. It's nice being alone ... the air and stuff. You've got time to think your thoughts out.' (11-year-old female) |
| 'Maybe it's the beach nearby or our own jetty when the sun's going down. It's amusing to dangle your feet in the water. Nobody disturbs you and you can let all your sorrows and joys out. You can be alone or with a friend.' (12-year-old female from northern Finland) | 'I like the beach. It's all pretty and blue and it's got a nice atmosphere. It's relaxing.You don't have to worry about school work.' (15-year-old male) |
| 'When I get to my grandmother's house over the week for fishing. It is really great fun. It's possible to fish all day long then go back to the house where 'sauna' is ready and grandmother has pancakes.' (15-year-old male from northern Finland) | 'I love beaches. I like swimming, but I prefer sitting at sunset and watching the waves and stuff.' (15-year-old female) |

Many of the comments are consistent with the need for privacy or to be alone 'with my own thoughts'. They display the individualism of young people and their need for personal private space away from other family members and friends. At the same time, there is a further dimension in these comments. Observations like 'the river's nice', '[the beach] is all pretty and blue' reveal an aestheticism bound up with affection for natural places. Mostly familiar places, these locations in natural settings seem to form an

extension of home. Comments like '... our own jetty when the sun's going down' suggest a type of ownership that is part of 'self' or 'who I am'. In one sense it can be argued that these are public spaces and that young people are simply using them to gain time and space alone. However, the comments recorded seem to suggest more than this clinical analysis. That is, these nature places appear to be a part of the private and individual identity of the person. They belong to the young person just as 'my bedroom' and 'my family'. They make the person happy and feel safe as in 'being at home'.

## *Discussion*

Exploring the many dimensions of youthful views of the world is a continual reminder of the complexity of human existence and personal needs. We are at the same time social beings and private persons. Both sides of our lives need nurturing. We respond to people-places but crave the sensory vibrations that come from nature. We are both happy and sad in all places – alone and content with solitary spaces or lonely and afraid when threatened in public spaces. Young people tell us these many conflicting views in interviews that build on their trust in us as interviewers to reflect their ideas as they are and not as others or 'adults' may wish to 'see'.

Not surprisingly, data analysed from the research described show some age-related and some gender-specific differences. They also provide important insights into the judgments governing the decision-making of young people, including values and codes they set for themselves. Younger children highlighted the importance of parents as their reference group, whereas the adolescent age group often distanced themselves from parents to emphasise the importance of friends and privacy. At the same time, there is an inherent conservatism in the views that reinforce the traditional values of the spaces and places of home and family associated with a secure, supportive parenting. Fascinating too, when considering the globalisation of human endeavour, is that the tables of results from data collected in Australia and Finland show remarkable overlap in young people's thinking regardless of country and within-country context. For instance, the aspects of nature may change according to the specific location but the theme remains the same.

Seeking some coherence in youthful experience that may be able to be generalised to other settings and places, and in and between cultures is an obvious challenge in these studies. However, if you believe that each person's needs and spaces and places visited are unique, then the goal itself is illusory. In the analysis described, some attempt has been made to isolate the main dimensions of their leisure or 'free time' pursuits with a model built partly on a theory of social need (Triandis 1995) and partly on the architectural design or form, function and structure (LeFebvre 1991) that constitute public and private spaces. Hence the four-quadrant model of individual–public, individual–private, collective–public and collective–private spaces is a way of interpreting the dialogue without compromising too much of the intent in the original text.

Working in partnerships with young people, as we are trying to do with the research described, is a privilege. Adults familiar with children frequently report on their competence in the new world of ICT. Through their navigation skills, uncluttered by prior conceptions, they can provide guidance for the adult world. At the same time their behaviours and decision-making rules provide a mirror of the wider community from which we need to take note.

## *Youthful pedagogies*

The information and knowledge gained from engaging in conversation with young people about what matters to them must have value beyond the interview setting. We have a responsibility to these young people to reflect their personal experience in the courses and programs we offer in schools, at home and in the wider community. Gone are the days when curricula could be decided by senior decision-makers in offices often isolated from the worlds of children. In the Internet-based world of the new millennium, online learning is here to stay. It may not replace the spaces of nature. Nevertheless, we see in this dimension young people transferring their traditional 'real spaces' for meeting and leisure to the 'virtual spaces' of chat rooms and video games. Who better, then, to advise decision-makers, themselves often lagging behind in ICT skills, than the first-hand users of the curriculum – young people. Their responses to what we offer will always be the best barometer of success.

## Summary

In this chapter I have attempted to open up the discussion to consider the realities of the many new dimensions of human endeavour now possible in the new age world. Globalisation, time–space compression and the powers of ICT have created a new set of spaces for young people full of energy, excitement and unlimited pleasure, frustration and challenge. To test the impact of all these forces and how they intersect with traditional values of home and community, the research described underscores the merits of providing opportunities for young people to talk about themselves, what they value, where they spend their time, with whom and for what purpose. The content of these memories is likely to provide the best starting point for constructing lasting curriculum relevance.

Good teachers have always recognised that harnessing the child's imagination is a guaranteed way of motivating interest in learning. Now that it is possible for the child to be transported to distant spaces while sitting in a traditional classroom, there are real challenges for teachers who adopt the traditional 'dripping tap' view of teaching. As our research shows, young people's proficiency with ICT quickly enables them to short-circuit their immediate surroundings. Where computers are available in classrooms (and/or at home), their ability to transport themselves away from the content of the lesson to spaces and friends of their choosing in cyberspace becomes a game of escaping the teacher's (and parents') eye.

To conclude, our interest in young people's behaviour lies in how they deal with what is on offer in their everyday lives. How do they navigate the traditional spaces of home, friends and surroundings and the new spaces of virtual reality created not so much through the imagination as through the power of computer search engines and ICT tools? One main question keeps emerging: To what extent are these spaces so influenced by globalisation that the boundaries of cultural diversity are being blurred: that a common language is appearing in youthful cultures which can homogenise the influence of schools' curricula? The future is for us to imagine, and partnerships with young people remain our best hope for successful outcomes.

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# Child-centred pedagogies – a final comment

*Margaret Robertson & Rod Gerber*

Throughout this book authors have raised questions concerning the content and strategies used by teachers in the teaching and learning processes. In the reflexive praxis represented in the various accounts of localised pedagogies, authors illustrate the importance of personal development linked with a strengthening sense of place and space identity. By describing specific programs and recalling children's responses, the focus has been strongly on their lived experiences. Positioning the importance of the subjective dimension of learning at the heart of the educational discourse is the significant contribution that this book hopes to achieve.

Described as the defining quality of postmodern society (Cooke 1997), the term reflexivity can be best defined as that capacity we all seem to have to cope with constant change. In a negative sense, this might mean that we simply react to change rather than plan proactively for a future with a destiny over which we feel some control. Given the economic, social and institutional volatility associated with the reality of the concrete spaces with which we have traditionally found meaning and purposeful existence, this line of argument may have repositioned the truth. We no longer live in a world of singular objective space.

One way of conceptualising this dislocation is Baurillard's notion of simulacra or simulations and multiple representations of what may be real

or imagined spaces with no referent except their own (Poster 1994). Simulacra create a world of 'hyperreality' with infinite boundaries and structures. Potentially, simulations of the real can become reality itself. Such is the power of the global impact of mass communications, cyberspace marketing, popular culture and legitimisation of diversity. Through accessible spaces of the Internet, marginalised groups have a voice – otherness is 'in from the cold'.

## Postmodern pedagogies

For traditional institutions of state and society, the related turbulence concerning what constitutes reality can seem frightening. Often with inadequate time to plan appropriate responses, over-reaction is the best that can occur. This is well illustrated by the epidemic of accountability measures that have emerged in the Western educational world, where success is continually evaluated in terms of performance indicators of child and teacher. As a passionate and critical observer of educational environments, Stephen Ball describes this phenomenon as creating a kind of schizophrenia for teachers, with the real possibility that 'commitment, judgement and authenticity within practice are sacrificed for impression and performance' (Ball 2000, p.6). In educational circles such externally imposed procedures are seen to be blanketing the disciplines of the content areas of knowledge in the curriculum, with rigid structures of overarching power and control. Designed largely to satisfy the need to commodify education, the emphasis seems focused on achieving market comparisons. The question is: Can these comparisons provide the answers needed to maximise the learning environments of young people?

As a social experience, where is education situated in this current economic rationalist phase? One could argue that for schools nothing has changed in the postmodern era. In past as well as present sociocultural contexts, most schools have been bound by the rules and procedures of the current dominant view. Within these often rigid structures of inspections and checklist procedures, teachers have always found ways to do what they know to be best for achieving high levels of engagement and motivation from children. Often this has meant 'stretching' the rules to allow for the child who did not seem to 'fit' the system.

Hence, our optimism that the 'new world' virus of accountability can be managed! The wonder of the postmodern world for teachers and children is the new-found and emerging respect for otherness. This is not cause for grief about intrusive management practices, but cause for celebration and enactment of proactive teaching strategies. Humanistic approaches amid societal upheaval give credibility to constructivist pedagogies where planning relies on having no fixed ideas of the spaces and places that constitute the real and imagined world of young people, nor is there judgment about their worlds. To work in partnerships with children is viewed as the key to productive futures. Where the communication lines are open with children, then their involvement in learning will follow. The performance tests will take care of themselves.

Through the various cognate domains of literacy, aesthetics and the arts, spatial reasoning with maps, leisure pursuits, architectural design and information and communications technologies, the various chapters in this book show how to be successful, reflective practitioners in diverse contexts across the world. Typical of what is possible with an open-minded approach are Pamela Wridt's account of teaching street kids in Brazil's Salvador, and Laxmi Ramasubramanian's account of the 'CitySearch' project team in Auckland, New Zealand where adolescents helped design community information boards. Both projects are exemplars of authentic pedagogy. The evaluations indicate successful learning outcomes and enhanced motivation for learning by the participants.

## Separate themes or different pedagogies?

Several underlying themes are worthy of recall. Each theme can be construed as a separate way of visioning the education process or imagining the educational responses most likely to offer a life-long learning perspective for young people. If we are correct in our predictions of the future, then flexibility will be a key skill for survival. Offering alternate (and overlapping) pedagogies will be the solution for maintaining the integrity of emerging youthful identities and guaranteeing an authentic future-oriented curriculum.

### *1. Child centredness – humanist approaches*

Memories of childhood permeate all aspects of adult life. They attest to the strength of our childhood in terms of who we become and how we negotiate our sense of separateness in the world. The architectural design of our homes, schools, friends' places and landscape we liked to roam in are part of our aesthetic and spiritual sense of place, belonging and self-identity. Educational processes that make the effort to connect with these subjective and special places of children will offer the best chance for lasting engagement and meaning making.

### *2. Sustainability*

Surface knowledge has little place in the lasting education of young people – unless it can be shown to connect with the world with which they interact. The immediacy of information makes this commodity of little value in educational terms. However, the skill to interpret the great mass of facts available through the channels of ICT is essential for rational and relevant management lifestyles. We need to infuse young people with the judgment to make good decisions and not to be overwhelmed by so much choice.

### *3. Localised authenticity*

A great risk associated with obsessive enthusiasm for the Internet, cyberspace and displaced locality and time is a world with no concrete reality. The seduction of the interactivity that the new technologies offer, along with the associated immediacy of access to services, can delude the individual into thinking that the world is only made up of 'cyber' places, towns and cities. The need to connect in real time and real space with real, concrete communities is one of the imperatives facing educators, who can be sidetracked by the apparent renewed interest in learning via the Internet of many students not previously highly motivated.

### *4. Resilient place*

No matter what lifestyle combination of real time, local place versus cyber time and cyber space, in educational terms the ways in which children come to know the world need to be balanced. The geographer and philosopher

Yi-Fu Tuan writes: 'Space, a biological necessity of all animals, is to human beings also a psychological need, a social prerequisite and even a spiritual attribute. Space and spaciousness carry different sets of meaning in different cultures' (1977, p. 58). To be effective educators we need to guide the ways in which children come to know their places and spaces in the world in many and diverse ways.

We hope that *Children's Ways of Knowing* will help readers create those partnerships in balanced, diverse and wise ways. Imagining the future is a youthful experience and one not to be missed!

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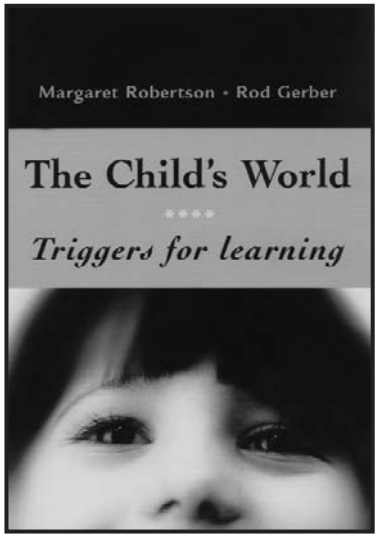
## The Child's World: Triggers for Learning

edited by Margaret Robertson and Rod Gerber




Young people who live most of their lives in the 21st century face dilemmas hardly experienced in the 20th-century world: the rapid compression of space and time; an unprecedented rate of cultural and technological change; the dissolution of many traditional boundaries. Already, children live in a world unknown to us in our childhood – they 'surf the net', play virtual games and interact with cyberspace.

What skills are required to help children navigate these very different spaces? How do they construct their identity and sense of place? How can educators bring order to their experiences and promote learning for the future?

*The Child's World* strives to answer these questions and more. Drawing on contributions from educators worldwide, it incorporates recent research and case studies to provide insight into how children interact with the world around them, and how this understanding can be used to improve learning.

The Editors: Dr Margaret Robertson, Senior Lecturer in Education at the University of Tasmania, is recognised internationally for her research in the fields of environmental perceptions and spatial cognition. Professor Rod Gerber, immediate past Chair of the International Geographic Union's Commission on Geographical Education, is widely respected for his work in geographic education.