How has the world of the child changed in the last 150 years? … it's hard to imagine any way in which it hasn't changed … they're immersed in all kinds of stuff that was unheard of 150 years ago, and yet if you look at schools today … they are more similar than dissimilar.

- Peter Senge

Chapter overview

The world is changing at a rapid pace and this chapter documents some of the big changes affecting the nature of knowledge, how information is acquired, who is advantaged and disadvantaged, and the changing nature of work. The chapter describes the relevance of many of these changes to pre-service teachers. Using a variety of lenses you are asked to consider the current state of schools and how teachers are responding to the needs of dramatically new learners. You are encouraged to consider, return to and build on these big ideas as you move through the book.

Introduction

Rapidly changing social, cultural and technological conditions insist that we rethink ourselves as teachers and as learners. The students we teach have new needs and new capacities that demand reconceptualised pedagogies and curricula. Research reiterates that students want new possibilities in schools where they: have autonomy and are able to make decisions in school in order to have learning that is connected to their everyday lives; feel respected and valued by teachers and other students; and are given more responsibility (Rudduck 2007).

As futurologists we are embarking on a story of education that is still blurry. Whether we are able to respond in new and innovative ways will be dependent on how open and responsive we are to the challenges that living in contemporary times bring for all of us. We need to be knowledgeable about young people and the real world they live in; be aware of the politicised nature of teachers' work and be clear that not naming our beliefs does not mean we are not taking a political stance. This awareness will make us better teachers and better equipped to move forward as change agents and professionals in our chosen world of work.

Revolutionary schooling for a changing world

Every education system in the world is being reformed at the moment. And it's not enough. Reform is no use anymore, because that's simply improving a broken model. What we need … is not evolution, but a revolution in education. This has to be transformed into something else. (Robinson 2010)

Before we embark on the discussion that is begging to happen in response to what Ken Robinson presents above, let's start by asking: What is this world we describe as new times that teachers and 'schooling' will be expected to respond to if education is to take us into the future? If these children who are enrolling in school now will be living through the next sixty years before they retire, what will the world look like? Mostly, we find it hard to imagine a life in ten years time, and yet as educators we must consider that we are educating children for jobs that possibly don't exist yet. We only have to look at how technology has changed our lives and the world in the past to realise how exciting yet unpredictable the future is!

One of the key challenges for the 21st century is that children will be growing up in a rapidly urbanised world. Population projections claim that by the year 2020 most children will be living in congested cities. The world's population numbers are accelerating at a phenomenal rate; by the turn of the century we had reached six billion people. By 2025 it is estimated there will be nine billion people sharing the finite resources of the globe (UNCHS 1996). Where will these people live? How will we feed them? How will we educate them? The United Nations stated that in the late 1990s one in every four people was living in a town or city (UNCHS 1996). This could increase to over six in ten by the year 2025. With the world's largest cities (megacities) growing by one million people per week it is estimated that by the year 2025 these megacities alone will need to accommodate four billion people, with many of these being children (Satterthwaite 1996). On average, one third of the population in high-income nations are children, while in low-income nations the percentage of children can be as high as 60 per cent. How these children are supported

will be the key to determining how the global community has dealt with this rapid change. As a recent UNICEF report states:

> The true measure of a nation's standing is how well it attends to its children—their health and safety, their material security, their education and socialisation, and their sense of being loved, valued and included in the families and societies into which they are born. (UNICEF 2008, p. 3)

The impact of this increase in population and the urbanising of the world's environment is the increase in gaps between the haves and the have-nots, and particularly the lives of children, who in most cases are the most vulnerable in a community. Poverty is highly selective of its victims. If we take our own region, for example, there is evidence of enormous diversity in the experience of people's lives. The Asia-Pacific region spans thirty-seven countries and two hemispheres. From the arid regions of Pakistan and Afghanistan, the upper regions of China to the small Pacific islands in the east, this region boasts vast differences in culture, economic development, political structure and physical geography. Over half the world's inhabitants (around 3.5 billion people) live in this region with 2.5 billion of them living in China and India.

While the Asia-Pacific region is highly populated, it also has some of the most diverse lifestyles, with the very rich minority nations of Japan and Australia alongside fourteen of the fifty least developed countries in the world. Of these, nine are located in south and south-eastern Asia and include Afghanistan, Bangladesh, Bhutan, Cambodia, Laos, the Maldives, Myanmar, Nepal and Timor; and five, including Kiribati, Samoa, the Solomon Islands, Tuvalu and Vanuatu, are in the Pacific region. The widening gap between the rich and poor in countries and within countries in many of Asia-Pacific's booming economies has meant many mothers and their children's lives are at risk. The UNICEF report *The State of Asia-Pacific's Children* (2008) states that more than 40 per cent of the world's children who died before their fifth birthday in 2006 were from this region. In India alone at least 2.1 million children under five died in 2006. In a country which recorded 9 per cent economic growth in the same period, India, like most Asia-Pacific countries, spends less than 1.1 per cent of its public purse on healthcare and education. It would seem that rapid economic growth, which has resulted in far fewer people living in poverty than twenty years ago, has not ameliorated the harsh economic and social realities of hundreds of millions of Asian and Pacific Islander children and families. With the current economic recession the likelihood is that many advances in improving children's survival will be lost.

The rise of the modern age of the 20th century saw human development shift away from the industrial age to a knowledge-based society. Now in the 21st century, we are heading into a postmodern age that is transforming our experience of being human. Many current theorists and social commentators (Beck 1992, 2000; Bauman 2002) describe the world in terms of the 'individualisation of risk'. The concept of risk is directly bound to the modern experience of living

Individualisation of risk is defined as the systematic way of dealing with hazards and insecurities induced and introduced by modernisation itself. For example, while the terrorist attacks of 11 September 2001 happened as an extraordinary one-off event, they have had a long-term impact on how individuals feel about travelling in planes. The risk now becomes an individual one where we are deciding which airline, which routes and which locations to choose. We can only blame ourselves if something happens to us and we haven't investigated the risks.

in uncertain and changing times. The **individualisation of risk** is an important concept for understanding the roles and purposes of education (and schooling) in the 21st century. As young people move from 'schooling' into the broader social contexts of their future lives they are aware that the options available to them are constructed through choices they have made or choices made for them around what is identified as worthwhile. Ironically, the way the school system operates is on a culture that subverts risk. Young children will often take risks and give things a go. Sadly, however, as they move through school we often teach them to see the world as either right or wrong. Taking risks is not supported either in a conceptual or physical sense. Therefore, as future educators, you have a significant role to play in the way young people construct and design their social futures and consider what we mean by the notion of 'risk' and 'risk taking'. Taking no risks can make life pretty boring and education very narrow! This was beautifully articulated by Angela, 15, of Croydon when she wrote:

> School is the mould, which shapes our future. It is where we spend the most valuable time of our life—childhood. Yet I know from firsthand experience that many aspects should be changed: the cold impersonal attitude of teachers who drive for results, results, results, instead of creating happy memories and valuable life experiences for young people … The way to tell a good teacher is that they make you want to listen and get involved in the lesson, not to be forever looking at the clock bored out of your mind waiting to leave. (Burke and Grosvenor 2003, p. 88)

Those with the least capacity to respond to changing trends, those who have limited physical and social resources and particularly those who have not been in a position to have the choices and opportunities that education can provide, will be most at risk. Resilience is the process of adapting in the face of adversity to a trauma, tragedy or sources of threats. Education enhances a child's resilience and in many parts of the world education is the key to the resilience of whole families. But what if there is no opportunity to access education? What if good teachers are just not available to teach?

Further reading on building children's resilience

American Psychological Association: www.apahelpcenter.org/featuredtopics/feature.php?id+6
Mindmatters, an Australian initiative to support building resilience in students: www.mindmatters.edu.au

Learning beyond schools

Sugata Mitra, an Indian academic, was concerned with the lack of opportunity for education for those children most at risk. He believed that in many places around the globe, and particularly in India, there were places where good teachers just would not go to teach and these places were often where there were real social issues and education would be most needed. He saw this as an ironic problem: 'Good teachers don't want to go to just those places where they're needed most' (Mitra 2010a). Even though education could provide opportunities to build social capital in families, without good teachers or schools this was not likely to happen. Interestingly enough, we find this also in Australia. It can be hard to persuade teachers to work in remote and regional country areas or even the 'western suburbs' of cities and if they go, it can be hard to keep them there.

On thinking about this dilemma and realising it was a global phenomenon, Mitra started a very simple experiment in New Delhi in 1999. He embedded a computer, much like an ATM machine, into a wall in a slum where children barely went to school and had no English skills. These children had never seen the internet. Mitra connected high-speed internet, turned it on and left the computer there. When he returned, he discovered some very interesting things had occurred. He found young children had worked together rather than individually and taken on the roles of teachers to share skills. They browsed for information and learnt English along the way. One group of young children in another site in central India realised they could record their own music and play it back to each other. They did this in only four hours after never seeing a computer before. In another southern Indian village, Mitra found a group of boys who within fourteen days had downloaded instructions on how to construct a video camera from websites, built one and were taking short films of bumble-bees. At the end of this experiment, which continued for some years in India, Mitra concluded that 'groups of children can learn to use computers and the internet on their own, irrespective of who or where they were' (Mitra 2010a).

Further reading on Sugata Mitra

Sugata Mitra (2010b). *How Kids Teach Themselves*. TED talks presentation. www.ted.com/talks/lang/eng/sugata_mitra_the_child_driven_education.html.

The story of Sugata Mitra's experiments presents some interesting dilemmas for educators and the producers of formal education to address. We will follow some of these up throughout the chapter, but for now we can see that the world is bursting at the seams and population increases will only make it harder for schools to respond solely to the educational needs of a global society. Practically and pedagogically, there are lessons to learn from an experiment that

showed that without teachers children can excel in their learning and that new technologies and self-organising systems of education may well be one of the key elements for rethinking 'schooling'.

'How do you place an elephant into a refrigerator'?

An adult will describe a lengthy complex process based on the view that an elephant wouldn't fit into the average size refrigerator, while a child would simply say:

'Open the fridge, put in the elephant, close the door'.

Sometimes solving problems only needs a simple answer (you just need to imagine an elephant size fridge!).

1   In small groups discuss some simple solutions to problems.

2   How can we make schools more relevant to today's learners?

The world in crisis

Using one wide lens, newspapers, television, magazines and documentaries bring to our lives images of a world on the verge of crisis. Whether it is the environmental crisis or the crisis of fear and terrorism, the world seems out of control. But there is another crisis afoot. It is a crisis of identity and constructions of self; a crisis that Ken Robinson might call the crisis of human resources. The foundation of this is his belief that children and adults have no sense of what their talents are and because of this find little value in the role of education in their lives and what they have to offer a changing world (Robinson 2010). We are being constructed and we are constructing our worldview through the lens of crisis. New technologies, the media and popular culture are the texts that produce and provide the context in which our understanding occurs. For many, these images present a vision of the world that is negative and frightening. They can also induce social prejudices, fears of the 'other' and lead us to retreat rather than reach out. Added to this are education systems that tend to dislocate learners from their natural talents and attempt to create factory-made learners. While this model may suit a small minority of children, the rest are just hanging on, hoping that somewhere they will find their place.

The world as possibilities

If we look at the world in a positive light through another wide lens, outside formal schooling we can see that we also live in an environment rich with information being constructed and shared by young people of all ages in different contexts, in space and time. We are members of a group

acknowledged as being the most mobile generation in human history. Travelling across the planet either for business or pleasure, our generation is seeing the world and visiting destinations on a level never known before. We are also living in a world connected through new technologies and social relations in amazingly new and exciting ways. We are a generation of people who, for the first time, understand the fragility of the planet Earth floating in a vast black universe and have constant images of space projected onto our computer and television screens. Whether these are meteorological maps forecasting the weather or surveillance cameras looking down on the local shopping mall, we are part of the most photographed, regulated and watched generation.

We are also a generation who has experienced firsthand what it means to be part of a global multichannelling community. This exposes us to a rich pool of cultural and social diversity that has the potential to enrich our lifeworlds and expand our sense of connectedness, our understanding of difference, opening up the boundaries that exist between nations. We find that cultures and societies are tied together in increasingly complex ways. The boundaries become blurred; as Tomlinson (2001, p. 1) puts it, 'Globalisation lies at the heart of modern culture, cultural practices lie at the heart of globalisation'. Globalising activities such as the transnational movement of people across the globe have supported cultural diversity and multiple and complex identities in our local communities, although critics of globalisation claim that this constant invasion of countries by Western cultures erodes diversity in its efforts to maintain its own well-known patterns. Globalisation is often critiqued as promoting one dominant set of cultural practices and values—one vision of how life is to be lived at the expense of others (Tomlinson 2001).

You have begun to realise that globalisation and technological change can be both scary and exciting. They can provide the opportunity for opening up new ways of looking at our world, and yet can also act to isolate and marginalise; they can shut people out as easily as they can bring them together.

1	How do you respond to these changes?
2	What old ways of teaching will no longer be effective with these changes?
3	What new ways of thinking about teaching might be required?

PAUSE
REFLECT
RECORD

Enter the 4/5F classroom at Lathner Primary

You move closer to three boys, Simon, Ahmet and Jack, who are deep in conversation. You sit at a nearby table and overhear them discussing their plans for the next scene of their documentary on soccer. Simon assumes that the three friends will bunk together so that they can work on

the storyline further during their school camp. Ahmet confesses that he can't go to camp because his parents don't have the money and, anyway, they don't want him to go. Simon can't believe what he's hearing. 'Hold on! You could get help with the money; Ms Jones will know what to do.' 'I know, I know,' Ahmet blurts out, 'I've tried to convince them that we can get help—believe me I've begged them to let me go to but they won't listen. The real reason isn't money. My parents don't think I will be safe.'

Are schools dinosaurs?

We have attempted to show that at the beginning of the 21st century schools sit rather uncomfortably, a little like dinosaurs. It feels as though schools haven't acquired the evolutionary specifications to fit into current social, political and technological changes, as if they are on the verge of extinction. Could this be the reason dinosaurs are lurking and emerge out of a wall of Lathner Primary? Do they remain there as reminders of old ways of thinking and acting? Are there other reminders we should think about and heed? Go back and take another look around the virtual school as presented in the Preface and Introduction. One pre-service teacher, Dine, yelled out 'Oh my God there's a flying cupcake', after his first exposure to Lathner Primary. Then, as his time at Lathner progressed, Dine reflected on his earlier remark:

> I guess one way to look at it is to see that elements like the flying cupcakes were put there to capture the visitor's attention. You could almost say that such elements challenge an individual's expectations of what they think the traditional notion of a school is all about. By exploring Lathner, I have been able to break away from that tradition I have often witnessed on placement; a tradition where tasks are rigorously set in routines and desks have to be set in a particular position. I now begin to understand risk-taking.

Future teachers need to learn to view traditional classrooms in critical ways and ask how they are meeting the needs of today's learners. If they are not meeting learner needs are they dinosaurs, on the verge of extinction? If so, what should replace them? As educators, the authors of this book refute the view that the time we might refer to as 'being schooled' is the place where

children learn everything they need to succeed in life. In fact, we may argue that being schooled is quickly becoming irrelevant. With the introduction of **lifelong learning** and the extensive use of information and communication technologies (ICT), virtual classrooms and project-based learning in communities, the traditional physical spaces of classrooms could well become a thing of the past. Relevant learning presents a number of contextual challenges for us as educators, as it seeks to contest the status quo and demands that we reconsider the purpose and value of old models of learning to the needs of learners and ultimately to the needs of a changing society. Luke (2001) referred to educators as the 'cultural custodians' of a system that he believes lacked vision and whose answer to the challenges of new identities, new cultures, new technologies and new economies has been more tests and a more US-style of commodity-driven instruction. The challenge for supporters of a revolution geared towards deep learning and deep understanding is to figure out how to develop a model of relevant learning that will be taken up by the older cultural custodians of traditional learning.

Papert (1993) claims that people from the 19th century could step into a contemporary classroom and know at a glance where they were. Further, Papert argues that since almost everyone has spent many years in schools, the image of school as we have known it is deeply imprinted in our collective and individual consciousness. Similarly, Bigum and Lankshear (1998) state that, while

Lifelong learning means new workers are less inclined to stay in the same position or even in the same vocation. Retraining for new jobs or even upgrading qualifications during your working life is a key to a new economy that is also responding to rapid change.

everything changes around us, education appears to stay the same. Bigum and Lankshear (1998) liken educational change to pouring old wine into a new bottles syndrome. Although the names of educational frameworks and practices may alter, patterned ways of thinking and operating remain the same. Townsend previously (2002, p. 24) stated that schools 'are still modelled on a curious mix of the factory, the asylum and the prison'. Burke and Grosvenor, reflecting on the longitudinal global project *The School I'd Like*, believed schools have changed little: 'the history of education tells a story of institutional change on the surface, but fundamentally the classroom, its routines, the regimentation of life, the lived experience of school does not change' (2003, p. 152).

1   Write and defend why we need schools as they are positioned today.
2   Write and defend why schools have become obsolete.
3   Debate this issue with peers.

PAUSE
REFLECT
RECORD

While you cannot solve many of the social and political issues confronting schools and young people on your own, at the very least you should know about them, know how these issues influence teaching and learning, and ask some big questions about the future of the profession. I remember reading a passage by a philosopher many years ago who said that people and systems

don't change unless their backs are up against the wall. Until schools get to the point where they can no longer function at all as they are, then people will continue to load wood in the fire to keep the steam train puffing along those well-grooved tracks. But are we (or should we be) on the verge of acknowledging that the model is broken as Ken Robinson suggests at the beginning of this section? Lathner Primary's back was against the wall several years ago and Principal Brian Treadwell would admit that the school was running but not really travelling anywhere (see the Preface).

Changing mindsets

To be able to address the 'educational revolution' head on you will need to have a strong sense of your own values and beliefs. As future educators you need to know how and why learners engage (or disengage) with knowledge and contexts and come to understand the reasons for student disaffection. You will need to understand that you '… play a significant role in guiding students beyond knowledge to insight' (Arnold and Ryan 2003, p. 11; Ryan, Carrington, Selva and Healy 2009). The role of teaching and the philosophies and theories that guide practice are therefore fundamental when discussing the ways teachers are addressing questions of relevance and purpose in education. Teachers need to be asking themselves, is schooling as it has evolved into the 21st century actually a model worth having? Or is it broken? Do we even need schools? Could we imagine school conceived any other way?

> Ken Robinson puts it in these terms:
>
> One of the real challenges is to innovate rather than merely tinker at the edges of education. Innovation is hard because it means doing something that people don't find very easy for the most part. It means challenging what we take for granted; things that we think are obvious. The great problem for reform or transformation is the tyranny of common sense—things that people think, 'Well, it can't be done any other way because that's the way it's done'. (Robinson 2010)

Access to the 21st century

A well-educated population is essential to a country's economic and social development. Societies therefore have an intrinsic interest in ensuring that children and adults have access to a wide variety of educational opportunities. Early childhood programs prepare children for primary education; they provide opportunities to enhance and complement their educational experiences at home and can help combat linguistic and social disadvantages. Primary and secondary education lay

the foundation for the development of a broad range of competencies as well as preparing young people to become lifelong learners and productive members of society. Tertiary education, either directly after initial schooling or later in life, provides a range of options for acquiring advanced knowledge and skills (OECD 2009, p. 294).

If we were to imagine the worker of the 20th century, who would it be? What tasks would this worker be involved in? If we were to find an image representative of the 'old economy' or traditional modes of work at the turn of the century what would it be—a smokestack, the factory floor, the production line? These are the signs of industrial progress. As the century unfolded the worker moved from the factory floor to the overlooking offices to manage and control the machines of progress. The workers were the key assets of capitalism, an economy based on improving production to fulfilling the demands of the new consumer society. Humans in this picture are the appendages of the machines. The dream of improving or promotion wasn't based on getting better qualifications but on showing loyalty to the corporation and producing more. It was also a gendered workplace. Women, because of their need to withdraw from the factory floor to have children, did not have the opportunities of their male co-workers. Upward mobility was less of an aspiration.

If the old economy is an image of the factory smokestack, then the new economy of the 21st century is represented by the worker in front of the computer screen. ICT dominates the knowledge economy. Mobility and connectivity are key descriptors of this context. In this new economy, knowledge and information are bought and sold at the click of a mouse over vast distances, across virtual boundaries and transparent time zones. Mobile workers who are constantly renaming and reconstructing themselves to fit into changing and evolving workplaces, represent employment in this context. Lifelong learning is a key element of a new view of education. Even in the most distant backyard industries of the low income nations the connection to the global economy is clear. A highly seductive and evocative media is connecting the world. The new work order of the 21st century is driven by globalisation, technological innovation and changing work practices.

With a partner, make a list of what you believe should be the goals of schooling in the 21st century.

Share your list with others and then compare and revise any points based on the shared knowledge. Next, read the nationally agreed upon goals following and compare these to your list.

How do the nationally agreed upon goals compare with the goals of the schools you attended as a child or one you attended on your field placement?

How do the nationally agreed upon goals compare with Lathner Primary's direction?

PAUSE
REFLECT
RECORD

Australia's national goals for schooling in the 21st century

The Ministerial Task Force appointed in 1998 to revise the national goals made a decade earlier recognised the need to consider the significant social, economic and technological changes that have occurred over the last decade. The taskforce understood that schools would face new challenges in the future. These challenges meant that a number of emerging priority areas of learning had been afforded a new emphasis and importance, for example:

» information technology

» vocational education

» literacy and numeracy

» civics and citizenship.

What follows are the goals that were agreed upon.

In the information age the greatest challenge will be to invest wisely in the intellectual and technological knowledge, skills and understanding of our young people. Successful nations will be those which accept the opportunities that globalisation presents to schooling.

Australians in the 21st century will be active and informed citizens of complex and rapidly changing local and global communities. They will be enterprising, adaptable and socially responsible contributors to our democratic, cohesive, culturally rich and diverse Australian society.

Schools will be learning communities of students, families and teachers. They will be committed to pursuing excellence and equity, and to exploring and advancing individual, group and societal development.

Our world class school education, based on agreed national goals, will provide the foundation for young Australians' intellectual, physical, social, spiritual, moral and aesthetic development. It will give them the knowledge, skills, attitudes and values relevant to present and emerging social, cultural and economic needs in local, national and international settings.

The achievement of Australia's common and agreed national goals for schooling establishes the pathway for lifelong learning, from the foundations established in the early years through to senior secondary education including vocational education and linking to employment and continuing education and

training. (The Ministerial Council for Education, Early Childhood Development and Youth Affairs 1998)

A CHANGING SCHOOL COMMUNITY

Mobility

The student population at Lathner Primary has undergone significant changes in the past five years as families move in and out of the area. The Prep/1 teacher, Keith Braymore, has organised for three Indigenous children to move down from the Northern Territory and undertake their schooling at Lathner Primary. The school has become rich in cultural and linguistic diversity with nineteen languages other than English spoken at home. There is also increased mobility. Claire, in the Year 4/5F class, for example, moves every couple of years. Her single mother recently announced another move for them at the end of the year. Your site teacher, Anna Jones, has noticed Claire's mood swings since learning about the new move and although Kate and Kelly have taken Claire under their wings, Claire appears depressed and sullen, but resolved. How can you and the other teachers at Lathner Primary foster and develop the children's resilience to cope with change while also celebrating their diverse lives?

Technology for learning

We are in the midst of a technological revolution that is changing the way we and our students work and the way we will participate in our social worlds both at the local and global levels. Like our students, in order to be informed and to participate in this highly mechanised world we need to be capable of finding, selecting, utilising and modifying new ICT to our advantage. Gaining the edge in the world of ICT means learning to manipulate and critically read the multiple texts of new technologies. New technologies will provide the tools for us to enter into the fast and rapidly changing body of information being accumulated by and through the exchange of human cultures.

Learning that is constructed through technology will occur at a variety of vantage points and settings: the classroom, the internet café, in our homes and out of doors. Much of the learning associated with these new technologies, whether it is the use of computers at home or the highly skilled engineer using the latest Global Imaging Systems (GIS) software, has been self-taught. We live in a networked society where learning takes place on a vast scale through a variety of

technological media including television, music, internet, speech, performance and popular culture. Most of this learning takes place outside traditional educational institutions. Internet, iPods, iPhones, iPads and social networking systems provide opportunities for us to make links and communicate at a speed and across distances in ways never experienced before.

Enter the virtual classroom

Ahmet (nicknamed 'The Whiz' by his peers) brought in some spare parts from home and he is trying to repair one of the broken computers in the 4/5F classroom. He has already fixed two computers in the school. Ahmet loves technology and has designed and created a short animation at home. Ms Jones, his teacher, thinks about how she can extend Ahmet's technological application at school. She will ask if any family members know someone who might be willing to run a computer club. Then she stops to reflect and wonders why she doesn't ask Ahmet to run the computer club.

Rethinking teaching and learning

As a future teacher you will be charged with the task of providing the structures and processes that ensure teaching and learning environments have relevance to and purposes that match the needs of a society under rapid change. Educational settings must be the place where students access the knowledge, skills and attributes required to be active citizens and the capacity to design their own social futures. As we learn more about the changing nature of communities what becomes apparent is that while many schooling practices are designed to give young people the kinds of learning experiences that will best equip them for these changes, many are not. The model of learning that is now required is very different to old education models—in fact they just won't fit together. The Australian Council of Deans of Education (ACDE) reported in 2004 that 'the idea that education is something you learn in institutions, which then prepares you for life, is no longer relevant' (p. 21). As Sugata Mitra has shown us, even with very young children the internet has created boundary-free environments where knowledge, ideas, schooling, collaboration and commerce can occur without limitations (Warner 2006). Mitra refers to this as self-organising education. Like the natural world (i.e. galaxies, molecules, societies) that is fundamentally a self-organising system, he believes we need to innovate by looking at the possibilities for education to operate in a more natural, organic, self-organising way. Children, as 21st-century learners discussed throughout this book, are illustrating this more and more through the self-initiated learning and communication that happens via new technologies outside of 'being schooled'.

Essentially we find that many young people have superseded their 'school education' with their own real-world self-education and are finding the old style of education, its delivery or

content, less and less appealing or relevant. Students of all ages can be seen to be voting with their feet—disengagement, boredom and antisocial behaviour are symptoms of a lack of active engagement and participation in school.

The requirement of teaching and learning in the 21st century is to place different demands on teachers, and as the role of the teacher changes so too will the role of educators who work with schools and teachers to support their learning programs. The changing context of a new basics or a more *narrow view* of education has placed many of the ideals of teaching and learning in new times to the background. But as a teacher who seeks to provide a more purposeful teaching and learning opportunity for your children, you will be required to explore how teaching and learning occurs in the context of students' lives, now and in the future. This knowledge will help you to ensure that you are creating curricula that are useful and relevant to your students' needs, even in a context that is demanding you to be more outcomes- and product-oriented. You will need to decide how you can translate a managerialistic model of education that works to control and regulate teachers, knowledge and learners into a more reflexive and critical education model. Planning for this style of learning is discussed in Chapter 11 and may give you some ideas of how to practically rethink the classroom curriculum.

While there is considerable debate and controversy about the nature and extent of what information is most relevant to students, there is certainly agreement about the importance of students being able to negotiate their own learning by considering their own health and well-being; being clear about the decisions they make; and considering the impact of their choices on their future place in the world.

The theory of learning often espoused as consistent with 21st-century learning is a social constructivist model of learning, yet it could be equally stated that relevant learning is constituted of many learning theories that have evolved over a long period of time; beginning with the contribution of Dewey and his progressive view of problem-based learning, Gardner's focus on engaging learners by understanding their multiple intelligences, or Vygotsky's sociocultural theories and his notion of scaffolding children's learning, to more recently Delors's (1996) UNESCO paper on education for the 21st century with the model of four pillars of education. These pillars—Learning to know, Learning to do, Learning to live together and Learning to be—provide an education that encapsulates those components of a long tradition of changing ideas and theories in education and incorporates them into a coherent model for addressing children's needs.

This brings us to some core questions about teaching and teachers, such as why do teachers teach? Nieto (2005, 2009), in her research with teachers asking this very question, came up with this conclusion:

> My research has made it clear that previous experiences as well as values, dispositions, and beliefs fuel teachers' determination to remain in the profession. Sensibilities such as love, engaging with intellectual work, the hope of changing students' lives, a belief in the democratic potential of public education, and anger

at the conditions of public education are all at the heart of what makes for excellent and caring teachers. Attitudes and values such as a sense of mission; solidarity with, and empathy for, students; the courage to challenge mainstream knowledge and conventional wisdom; improvisation; and a passion for social justice are teachers' motivations for entering the profession. On the other hand, teachers have never mentioned to me that teaching students how to take tests, learning to follow rubrics and templates, or heeding district mandates concerning the latest basal reader helped to keep them in the classroom or made teaching a rewarding experience. Although these tools and techniques may be helpful, truly 'highly qualified teachers' have never viewed them as ends in themselves. (Nieto 2009, p. 8)

So, if teachers know that these modes of learning are outdated and unsupportive of what they claim as their purpose for teaching, why do they continue to feel bound up by choices made by bureaucrats to return to these old models?

As future educators, your ideas of how to create an effective learning environment for the students must fit with your expanding understanding of the complexities of knowing and learning and the multiple contexts in which current students will have to function (Lovat 2003). Arnold and Ryan argue that the transformative capacity of learning means, 'Students of the 21st century can actively create the communities in which they live and learn, rather than live on the margins of those they inherit' (2003, p. 5). Our students should be positioned as active participants in the world now, not just 'in preparation' for the future. As new global citizens old notions of 'civic' education are singular and narrow—the old nation state, the idea of belonging to 'my country', is becoming redundant in our multicultural and global society. Our students will live within the context of 'civic pluralism' and multiple citizenships. Their local, regional and global worlds both surround and construct who they are.

To think differently about teaching, to return to young people as the focus, requires us to revision and rename our emerging role as teachers. This revisioning and renaming will help us see traditional cultural practices of schooling with a different lens. This new lens still acknowledges the importance of active teaching and learning, of assessment and of striving for high standards. It recognises key learning areas such as reading, writing, mathematics and technology as areas of fundamental importance. Yet there is the understanding that these, along with creativity, problem solving and cultural understanding, have intrinsic and aesthetic value *as well as being* useful to the individual and to their society. Learning is seen as grounded in teacher–child relationships, recognising a teacher's concern for the whole lifeworld of the child (a point discussed in greater detail in following chapters). When rethinking teaching and learning, attention is given to not only what is learnt but *also* to understanding learning as a relational process. The way children experience teaching may differ from the teacher's intentions. This knowing recognises the importance and complexity of different cultural ways of knowing that are the outcome of classroom interactions. Thinking about *why* and *how* we learn is in this sense as important as *what* we learn.

Ken Robinson (2010) in his TED talk on the learning revolution believes we need to change metaphors back from an industrial factory view of schooling to a view of education that is more organic. Read his story and consider what a new metaphor of education that is responsive to new times might look like.

My wife just finished writing a novel, and I think it's a great book, but she disappears for hours on end. You know this; if you're doing something you love an hour feels like five minutes. If you're doing something that doesn't resonate with your spirit, five minutes feels like an hour. And the reason so many people are opting out of education is because it doesn't feed the spirit, it doesn't feed their energy or their passion.

I think we have to change metaphors. We have to go from what is essentially an industrial model of education, a manufacturing model, which is based on linearity and conformity and batching people. We have to move to a model that is based more on principles of agriculture. We have to recognise that human flourishing is not a mechanical process, it's an organic process. And we cannot predict the outcome of human development; all we can do, like a farmer, is create the conditions under which they will begin to flourish. (Robinson 2010)

New pedagogies

Teacher quality is the single greatest factor in explaining student achievement more important than classroom related issues such as resources, curriculum guidelines, and assessment practices or the broader school environment such as school culture and organization. (Lovat 2003)

The role of pedagogy—the teaching and learning philosophies and theories that guide teachers' practice—is fundamental when discussing the way we will address

Pedagogy is the theory of teaching and learning.

questions of relevance and purpose in education. Shulman (1987, 2004) speaks of pedagogical content knowledge as that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding. Past research from Education Queensland (Department of Education Queensland 2001) on the evaluation of the qualities of an effective teacher identified a number of key characteristics. These include:

» *sense of responsibility:* 'They acknowledged they could not force students to learn—and considered themselves responsible.'

» *expressions of efficacy:* 'They viewed all students as capable of learning.'

» *conceptions of their role:* 'They were interested in talking and reflecting about their failings and changes they made to their teaching … they engaged in professional conversations with colleagues about their teaching.'

» *understanding of curriculum:* 'They problematised assessment practice … they were willing to subvert the curriculum and create spaces for learning activities they valued … they were involved in extracurricular activities.'

Those teachers who rated low on their productive pedagogies evaluation on effective teaching included:

» *lack of responsibility for students' learning:* 'They saw students as responsible for their own learning (and failures) and that factors outside of the teacher's control largely determined student outcomes.'

» *they taught to the middle:* 'They aimed their teaching at middle level and assumed that some students just would not learn.'

» *role of teachers:* 'They saw themselves as *explainers* and complained about not having time.'

» *guarded:* 'They were largely in the dark about the pedagogical work of their colleagues and were guarded about their own work.'

In New South Wales in 2003 the Quality Teaching Program painted a similar picture. Two key issues were identified that were to become the focus of new reform:

1 Quality of student learning outcome is directly dependent on the quality of the teacher.

2 The essential components of teaching are command of subject and knowledge of and capacity to implement effective pedagogical practices. They believed these ideas about effective teaching needed to fit within the expanding understanding of the complexities of knowing and learning and the multiple contexts in which current students would ultimately function (New South Wales 2003).

The Quality Teaching and Learning Program is still a key framework that is used to support a discourse of practice for teachers that provides opportunities for teaching and learning to be relevant in new times. The Quality Teaching and Learning model includes three dimensions: pedagogy that is fundamentally based on promoting high levels of intellectual quality; pedagogy that is soundly based on promoting a quality learning environment; and pedagogy that develops and makes explicit to students the significance of their work. The following provides a definition of each of these three dimensions of intellectual quality, quality learning environments and significance used in the NSW Quality Teaching model.

Intellectual quality refers to pedagogy focused on producing deep understanding of important, substantive concepts, skills and ideas. Such pedagogy treats knowledge as something that requires active construction and requires students to engage in higher-order thinking and to communicate substantively about what they are learning.

Quality learning environment refers to pedagogy that creates classrooms where students and teachers work productively in an environment clearly focused on learning. Such pedagogy sets high and explicit expectations and develops positive relationships between teachers and students and among students.

Significance refers to pedagogy that helps make learning meaningful and important to students. Such pedagogy draws clear connections with students' prior knowledge and identities, with contexts outside of the classroom and with multiple ways of knowing or cultural perspectives.

The model of teaching and learning we espouse supports students in achieving entry-level literacy competence with print and electronic media; critical self-thinking and self-analytic skills for coping with complex community changes and uncertainties; and educability for retraining across their lifespan through a range of media.

For educators to engage and achieve their goals of meeting the needs of their students, teachers will need to develop a spirit of critical reflection and to develop their own professional knowledge and language (Beattie 2001; Fendler 2003; Moon 2008). That is, without the 'language of pedagogy' how can we share, discuss and build a profession in a collaborative way?

Where to from here?

Part of learning is to question things that we take for granted, to discover issues that need to be debated, to uncover hidden realities that need to be transformed. The more we learn, the more burdened we are because it becomes our responsibility to bring that knowledge to others, to make it explicit and to do something with it (Lima 2005, pp. 92–3).

The fundamental premise informing the principles of teaching and learning is the importance of relevance. Whether learning occurs in a formal schooling context, on a virtual discussion board, a community inserted computer terminal, from viewing television, in the workplace or talking with our neighbour, for education to be valid and useful to the learner it needs to be relevant. Decontextualised, fragmented, abstract facts from a textbook or skill-based training packages not only present a model of learning that is bound to disenfranchise even the most enthusiastic learner, they are very limited in capacity to be relevant to the specific needs of young people in the 21st century. Knowledge constructed in this way and inculcated by old teaching and learning models may well have been adequate, even appropriate, to particular historical times in schooling, but it is not adequate to today's economic, civic and cultural circumstances. As the earlier discussion on teaching and learning suggested, it is essential for educators to recognise the importance of young people being seen as active and critical constructors of their learning. Our greatest critics and our greatest allies will be students and how they judge the relevance and purpose of the education we provide for them.

Not only do these learning experiences provide relevance and purpose to schooling, they also illustrate that children can be knowledge generators not just knowledge consumers. Children are

Social actor: children are of the social world; beings rather than becomings.

supported to be experts, **social actors** and competent active citizens capable of being key players in designing sustainable futures. Learning in this context is about contributing to the world now, not about preparation for the future. Other key attributes of the program was the use of new technologies, integration of discipline areas and utilising an inquiry model or action research model that supported deep learning and high order thinking (Malone 2009, p. 178).

Recent educational reforms and the language that has accompanied them are encouraging schools and their communities to rethink new models of learning that take into account the lived experiences of students and support multiliterate and multimodal forms of learning. Even a specific physical space called a classroom is under question with the introduction of virtual classrooms and project-based learning in the community. But as Welborn aptly states, it will be teachers who will continue to make a difference in ensuring the relevance of teaching and learning. She says:

> I may be naïve, but I believe that what I do day in and day out *does* make a difference. Teachers *do* change lives forever. And I teach in public school because I still believe in public school. I believe that the purpose of public school, whether it delivers or not, is to give a quality education to all kids who come through the doors. I want to be a part of that lofty mission. The future of our country depends on the ability of public schools to do that. (Welborn 2005, p. 17)

While changes to the ways in which we think about teaching and learning may seem unclear and even overwhelming, understand that you are not alone. Most schools still operate within the traditional hierarchy that largely ignores students' knowledge, experience and perceptions. Your experience as a learner within these old systems should serve you well as a starting point for judging for yourself what did or did not work in schools for you as a student. But don't be fooled into believing that because you succeeded in school that 'schools' worked for everyone. And think about what it means to say it 'worked'. I am sure you will recall many students who seemed a nuisance at school. Yet if we actually looked closer at what was going on we might have realised they were actively resisting a system which did little to support their individual needs.

You and your learning community are starting the journey into the world of teaching and learning, drawing on this unique position you now find yourself in. You are the first generation of teachers who have experienced these contemporary times and are transforming education in light of it. But be wary of thinking like the teachers described by Alison Cook-Sather:

> …. educators think that we know what education is and should be. Because we [educators] have lived longer and have a fuller history to look back upon, we certainly know more about the world as it has been thus far. But we do not know more than students living at the dawn of the 21st century about what it means to be a student in the modern world and what it might mean to be an adult in the future. (Cook-Sather 2002, p. 12)

In spite of frequent overhauls of the education system, the experience of schooling for most children and their teachers is that school stays the same (Burke and Grosvenor 2003). The powerful driver that keeps the wheels of the machine turning has a great investment in not changing the institution that has become school. Maybe, like 12-year-old Robert, our vision needs to be driven not by questions of change or transformation but by questions like: why do we even have schools?

My ideal school is no school—Robert, 12 years old. (Burke and Grosvenor 2003)

Author Arthur C. Clarke has often been cited as making two key statements about the relevance of schooling and teachers: 'If a teacher can be replaced by a machine then they should be' and 'If a child has interest, then education will happen'.

The purpose and relevance of what we teach and how we teach will be fundamental to our own understanding of contemporary education. We need to ask ourselves some hard questions: Do children actually need teachers? Or schools? Imagine you had to justify your job to the children in your classroom—what would you say?

PAUSE
REFLECT
RECORD

Chapter Summary

There are a number of key issues for teaching and teachers in new times:

»   At the start of the 21st century the world is changing and transforming at a rapid pace. Whether it is issues of globalisation, war, population growth or nationhood, we need to start considering how we will manage to live together.

»   New technologies and changing work economies have transformed the roles of workers from being on the factory floor to now sitting at a computer. People move from job to job and need to know how to apply knowledge rather than to simply acquire it.

»   Teachers who are committed to addressing the needs of learners in the 21st century need to be aware of their role in these new times and construct relevant pedagogies to support new ways of teaching and learning.

»   Teachers are success stories of the old education system—therefore, to understand how to provide relevant education, we need to step outside our own school experiences.

»   Teaching and learning is a two-way exchange and children and adults should see themselves as collaborators in the education enterprise, not as independent parties.

Taking Action

Revisit the classroom scenarios in this chapter and describe what may be going on in them. How does the literature support the learning demonstrated? What do these children appear to know? How is Lathner Primary School part of the educational revolution? Where is Anna Jones as class teacher positioned and how does she position her students? What role does she play in getting students actively involved in their learning?

Author's reflections

Life on the planet has changed dramatically since I was at university learning to teach. With the average age of teachers knocking on the door of 50, I share a similar story to many teachers who are now working in schools. We learnt how to teach in a very different world. When I did my undergraduate degree I spent two hours a week learning how to draw enormous colourful pictures on the chalkboard. There was a workshop space specifically designed at university for doing this. Using computers for teaching was still a way off and mobile phones—well, those were those large bricks that only wealthy or important people had connected in their cars. Over the past twenty years I have watched technology infiltrate our lives in new and wonderful ways and seen children become increasingly competent and aware of their capacity to be independent and skilled in engaging with and knowing their world. I have also over this time seen many innovative teaching programs rise and then fall to the wayside. At the beginning of the 21st century I am excited but also concerned about the state of education in Australia and overseas. My advice to you as you start your journey is to be open to innovation from wherever it arises. Transforming the education system, I believe, will come from a realisation that schooling should draw from real life and learners should be viewed as children. What does this mean? Does it sound a little cryptic? Just like the slow revealing of the sunrise on an early morning ride in the forest, the chapters of this book, individually and together, will endeavour to reveal a new way of thinking about learners and life in the 21st century that will provide you with the tools to rethink schooling in new times. As one of the authors, I invite you to take that ride with us.

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