

Quality Education for Sustainable Development

An educator handbook for integrating
values, knowledge, skills and quality features
of Education for Sustainable Development in schooling

*Includes a critical analysis of the
Australian National Curriculum*

by Dr. Joy M. de Leo



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ABSTRACT

History shows that society looks to education to develop the values, knowledge and skills needed to address contemporary challenges and to create the kind of society and lifestyles that are appropriate to the time, place and context. This is particularly so in times of crisis and rapid change such as those encountered today. The inter-related issues of climate change, environmental degradation, globalisation and the global financial crisis (GFC), population explosion, growing intercultural and inter-religious conflict and increasing social concerns and inequities, confront education with many complex challenges.

This handbook provides a guide for educators on how these global challenges can be addressed by adopting a values-based approach to Education for Sustainable Development (ESD) in schooling. The research informing this handbook involved a thorough text and content analysis of key international standard-setting documents, reports and relevant scholarly research, to identify the values, knowledge, skills and key characteristics of a quality approach to ESD that have been consistently expressed. These are then synthesised to form a comprehensive and coherent framework of evaluative criteria for ESD, which are then used as the basis for analysing the first four learning areas of the Australian National Curriculum that had been released at the time of writing. This framework of evaluative criteria can be used for developing educational programs and curricula and reorienting educational systems towards ESD, as advocated by the *International Implementation Scheme for Education for Sustainable Development (2004)* – the key reference document informing ESD implementation.

This educator handbook on ESD is divided into three parts as follows:

Part one

Chapters 1, 2, 3 and 4 provide the introduction and background essential to the curriculum analysis. In particular, Chapter 1 outlines key global concerns driving the need for values-based Education for Sustainable Development (ESD) and points to potential approaches for addressing them through education. Chapter 2 discusses the nature of ESD as described in the *International Implementation Scheme for Education for Sustainable Development (2004)*, which informs discussion throughout the handbook. Chapter 3 examines the nature of education across time, in particular the important role that values have played in education and clarifies definitions and understandings of values. Chapter 4 provides an overview of relatively recent initiatives in Australian schooling involving the integration of values, with particular relevance to ESD.

Part two

Chapters 5, 6 and 7 investigate the global values, knowledge, skills and quality characteristics needed in schooling to foster a peaceful, just and sustainable society. Specifically, Chapter 5 identifies and describes these global values and compares them to Australian values and to those in the *National Framework for Values Education in Australian schools* (NFVE), as well as to values that have endured across cultures for millennia. Chapter 6 reviews the educational thinking that led to current concepts of quality education and Education for Sustainable Development (ESD), with particular emphasis on values. It is argued that schools operate in three ways, by what they teach, by how they teach and by the kind of place the school is. These are examined in Chapter 6 in terms of quality and effectiveness for values-based teaching and learning for a sustainable future.

The key quality characteristics of education appropriate for ESD are discussed, involving values-based learning environments, relationships and other features. Chapter 7 identifies and discusses the knowledge and skills needed for ESD and highlights the need for trans-disciplinary approaches to curriculum development, in order to facilitate systems thinking and holistic problem solving, which are essential for sustainability. The quality characteristics of Education for Sustainable Development are summarised to form a set of criteria used to evaluate the Australian National Curriculum in Part three.

Part three

Chapters 8 to 12 present the outcomes of an in-depth analysis of the first four learning areas developed for the Australian National Curriculum for schooling, as a case study. Part three examines the presence in the curriculum of the values, knowledge, skills and quality characteristics for ESD that were identified in Part two, against the background context discussed in Part one.

The Australian National Curriculum is also tested against a philosophical and values-based framework for its coherence, consistency and strength and particularly, for its usefulness in creating a peaceful, just and sustainable society. The analysis examines the extent to which the Australian National Curriculum is designed to service the goals of sustainable development, given that the curriculum seeks to integrate sustainability as a cross-curriculum priority. Recommendations for curriculum enhancement are summarised in the concluding Chapter 13.

The extensive Appendixes that accompany this study can be accessed freely at this

url: www.qesd.org/appendixes

The Appendixes are designed to be referred to alongside the text, although some key tables are also inserted within the handbook for easy reference. In particular, readers are advised to refer to the following four key Appendixes that summarise the knowledge, skills, global values and characteristics needed for a

quality approach to ESD, which can be used as checklists to inform the development and evaluation of ESD programs and curricula:

Appendix 18 Global value sets appearing most frequently in international documents related to sustainable development. (Also listed in Table 5.1 in Chapter 5)

Appendix 32 Combined list of sustainability issues to inform ESD curriculum content.

Appendix 35 Combined list of sustainability skills to inform ESD curriculum development.

Appendix 40 Evaluative Criteria for values-based Education for Sustainable Development.

These Appendixes can be accessed at: www.qesd.org/appendixes

These Appendixes are referred to comprehensively in Part three, when analysing the extent to which the emerging Australian National Curriculum succeeds in integrating sustainability and meeting the objectives for ESD. Appendix 79 summarises the analysis of the Australian National Curriculum against the evaluative criteria for values-based ESD listed in Appendix 40.

It is argued that the issues addressed by Education for Sustainable Development (ESD) are too important to be under-represented in the Australian National Curriculum and merit serious and thorough consideration in the context of a rapidly changing World. Although this handbook specifically addresses school-based ESD, with a particular emphasis on values and less so on pedagogy and assessment, the ESD principles, values, knowledge, skills and quality characteristics contained in the four key Appendixes listed above, can be adapted for application to all levels of education.

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PART ONE

CHAPTER 1

LIVING AND LEARNING IN A RUNAWAY WORLD¹

Introduction

Never in recorded history has the fate of humanity depended on the actions of human beings as it does today. Over the past few decades, the World has undergone unprecedented rapid change in almost every area of human activity and interaction, bringing new opportunities and emerging challenges. Indeed, more change has occurred by human hand in the last century than in millennia. For millions of years, the natural, evolutionary processes of nature that carved out the geographic features of the planet and led to the immense diversity of plant and animal life, including humans and their socio-cultural structures, seemingly have been overtaken by the scientific, technological and informational capacities of the human mind. While there is cause for celebration in human achievement, the speed and scale of change demand cautious deliberation, as humanity struggles to come to terms with the unanticipated and perilous consequences of progress and the rapidly expanding population of the World.

In times of change society has always looked to education to develop the knowledge, skills and values needed to address contemporary challenges and to create the kind of society and lifestyle appropriate to the time, place and context. This has been particularly so in times of crisis, transition and rapid change such as those encountered today. Dewey and others adapted Plato's view that it was first necessary to know the desired 'end' purpose of existence and the type of society needed, for education to be designed accordingly:

Unless we know the end, the good, we shall have no criterion for rationally deciding what the possibilities are which should be promoted. (Dewey, 1916, p. 88)

A strong international consensus has emerged around "the end" that is universally desired for "the good" of all and what is required of education to respond to current circumstances in all areas of life, socio-cultural, socio-political, socio-economic and environmental, consistent with globally shared values. The term most commonly used to describe this is '**Education for Sustainable Development**' (ESD) that is discussed in Chapter 2.

This study examines the interdependent nature of contemporary challenges and the ways in which values-based Education for Sustainable Development (ESD) can respond in practice for the development of a peaceful, just and sustainable World at a time of great global change.

¹ Title adapted from Giddens, A. 2000. *Runaway World*. London: Routledge.

There is considerable evidence of both the benefits and threats of progress in all fields of human endeavour. For example, advances in medicine and technology have brought relief and well-being to the quality of life of millions, having eased suffering, cured and alleviated disease, reduced infant mortality, increased life expectancy and provided fresh water, electricity and education to many parts of the World. Nevertheless they have also led to a population explosion. Recent developments in science and biogenetics continue to improve health and well-being, but further exacerbate population growth and give rise to new threats, inequalities and attendant ethical dilemmas.

The advances in communication technologies and transport have accelerated social and economic globalisation and interdependence, spread democratic ideals, extended human rights and multiplied opportunities for intercultural and knowledge exchange. Such advances have brought people from the remotest parts of the World into closer proximity with others than ever before. Yet some aspects of progress have also brought unexpected effects, such as a growing digital divide, the rapid loss of linguistic and cultural diversity furthering cultural standardisation and the rising social, racial and religious conflicts that threaten human security.

Economic globalisation has provided wealth to many, but poverty to many more, creating both winners and losers leading to enormous wealth on the one hand and extreme poverty and inequality on the other, both within and between countries. The spread of democracy has brought freedom and opportunities for civic participation never seen before on such a large scale. However, this period has also been accompanied by the growth of a 'runaway' global market economy dominated by large trans-national institutions, many of which exceed the wealth and power of most nations.

Despite global efforts, the persistent problems of over-population, poverty, illiteracy, hunger, disease and inequity have remained of concern throughout the World and in many places have worsened (UNDP, 2007, p. 2). Layered over these are new challenges, such as increasing violence and terrorism, growing numbers of refugees seeking asylum, severe environmental degradation, climate change, biodiversity loss, increasing natural disasters, famine and the threat of pandemic from which no-one is immune. Giddens called this "manufactured risk", with which there is little experience, since this is the first time in history that humanity has become concerned about what it has done to nature (Giddens, 2000).

The panoply of global problems currently experienced spans all dimensions of human life, socio-cultural, political, economic and environmental, interwoven in a complex web of interdependencies in ways that are impossible for experts and leaders alone to solve. International cooperation and interdisciplinary exchange are crucial if humanity is to succeed in solving the challenges that threaten the very continuation of life on Earth. Such cooperation requires education to prepare future leaders and researchers in cross-disciplinary

engagement. It is increasingly difficult to shut out problems by strengthening border controls - a modern version of the walled fortifications of the past. The reach of globalisation, electronic communication, climate change and other global concerns transcend national boundaries, making protectionist efforts futile and cooperation essential. In this context it is imperative that education foster the requisite global values to achieve such cooperation and exchange.

With such tremendous intellectual and technological firepower, humankind has the capacity either to create universal well-being or to continue damaging what nature has taken millions of years to create. Humanity might also continue to provoke conflict over ideologies or resources, while some enjoy excess and others suffer deprivation, without the global values to temper such excesses. Instead, future scenarios might be shaped by what is valued and considered most important, whether it be: (a) individual accumulation of wealth, or collective human well-being; (b) proving one ideology over another, or respecting diverse world views; and (c) the glory of winning and prevailing over others, or harmonious unity with nature and with others while protecting ecological and cultural diversity. The Nobel laureate economist Amartya Sen argued that shared norms and social values underpinned the kind of life that everyone would want and that freedom and democratic processes provided the context within which shared values could be negotiated through dialogue (Sen, 1999a). Such shared values, when agreed globally, as they are in international agreements and conventions, can form the basis for living together equitably, harmoniously and sustainably on Earth, using education to reinforce them.

Yet it seems that the qualities of the human heart, such as values, compassion and connection with nature, have been unable to keep pace with the human mind and its capacity for technological and scientific progress. These are evident in all areas of life including education. Western emphasis on reason and logic that began with Plato and Aristotle, was championed by Descartes in the seventeenth century and continued by Kant in the eighteenth century, even if spawning such immense scientific progress, might have led circuitously to a deficit of values today. As a result of increasing urbanisation and the commercial production of food on a large scale, humanity has also experienced a disconnection from the natural world upon which it has always depended for identity and survival. Society appears to have forgotten that humans are not separate from nature, instead they are an intimate part of natural ecosystems. Such systems are characterised by a delicately balanced interdependence of flora, fauna and resources, sustained by natural water and carbon cycles that have taken millennia to evolve and just a few centuries to dismantle.

While the Western emphasis on reason has led to immense technological and scientific progress, it has not been balanced by the application of values, integral to the feeling, sensing and intuitive side of human nature. The Nobel laureate and neural scientist Sperry pinpointed neglect of human values as the “primary

underlying cause of most of our difficulties” (Sperry, 1983, p. 9). Saul also saw the “void in society” as being caused by an “absence of values” (Saul, 1993, p. 584). Recent developments in neural science and moral psychology have revealed the positive influences of perception, intuition and emotion on choice, values and priorities (Haidt and Joseph, 2004). Failing to nurture these in education can foster the development of individuals who base their decisions on reason alone, at a cost to society and to the environment. The neural scientist, Damasio (1994) demonstrated that the use of reason alone, unsupported by emotion, might cause even greater problems than faulty logic or irrationality. In the field of education, Hill claimed that, “technical values associated with economic rationalism were inadequate to keep the peace and maintain social structures”, while arguing for a values education focus on social justice and shared community goals (Reynolds, 2001, p. 23). Einstein also lamented the erosion of ethical values, caused by an overemphasis on fact and intellect, with serious consequences for humanity (Einstein, 1951).

The power of ideas

The pervasive influence of Cartesian philosophy offers just one example of the profound impact that the books of great thinkers, philosophers, scientists and educators have had on human endeavour, some positive, others not. Armstrong’s substantial analysis of texts dating back to the Axial Age almost three thousand years ago, revealed considerable similarity in emerging moral codes across Eastern, Western, Indian and Middle Eastern civilisations, suggesting that at least some human values, such as compassion for example, might be integral to human nature (Armstrong, 2006). Some neural scientists and psychologists were also of this view (Dawkins 1976, Pugh 1977, Sperry 1983, Pinker 2003). A rich source of human values that shaped thinking for millennia is contained within the ancient Indian *Vedas*, the Confucian *Analects*, Aristotelian *Ethics*, Buddha’s *Kanjur*, the Babylonian *Talmud*, the Christian *Bible* and the Islamic *Qur’an*. Armstrong also found that these texts emerged, for the most part, at times of great social change (Armstrong, 2006), not unlike the profound socio-cultural, but also climatic-environmental changes experienced today on a much larger and broader scale.

It has only been during the past few centuries that prevailing ideas have shifted, at least in the West, leading to dramatic changes in the ways people live, work and relate to nature. We are therefore at a turning point in history, ready for the emergence of new values and the renewal of old ones, transmitted through education and communication technologies. In this book, an investigation of the thinking of educators and philosophers across time and cultures reveals that the development and transmission of values have always been part of the aims of education, particularly in times of great change. With the current accelerating rate of change in an interdependent World, the many issues demanding attention and cooperation locally and globally, require education to foster values-based thinking and inspirational ideas in learners that can motivate them to take positive, competent and informed action.

A study of past societies revealed that values were reinforced strongly in times of rapid change and turmoil. Given the widespread changes of significant magnitude that have occurred over the past 50 years and the lifestyle transformations likely in the decades to come necessitated by climate change, the strengthening of values is sure to be needed once again, shaped by current circumstances. In order to facilitate this period of transition, Armstrong suggested that the ideas of the past should be revisited, to “adapt the original insights ... to the needs and circumstances of today” (Armstrong, 2006, p. xvii). Sperry also recommended the adoption of values suited to the needs of the times:

The obvious recommendation is to shape up our value systems to something more in tune with present-day reality, more properly suited to the new powers that man now commands and the new problems we now face. (Sperry, 1983, p. 10)

It helps to know where humanity has been, but also to have a compass for guiding preferred directions for the future. As with the texts of ancient times in the past, the great books of modern times influence thinking across all dimensions of human life and fields of study today. They help in the search for potential solutions to present and future realities, but also raise key questions that stimulate thinking and beg inquiry.

In the **natural** dimension of life, Darwin’s treatise *On the Origin of Species* (Darwin, 1859), while controversial both then and now (since it challenged religious tenets of creationist origins of the Earth) nonetheless provided the foundations for evolutionary biology through the theory of natural selection and adaptation and revealed the inherited origins of diversity through natural processes. This diversity is now threatened by human hand. In recent times there have been attempts made to remove the study of evolution from the subject of Biology in American and even in Australian schools, by creationists who have attributed evolution to intelligent design rather than to natural processes. This trend is disturbing since it gives credence to sectarian belief and ideology, not to be confused with values, rather than to Science. As history has shown, ideological clashes cause bitter conflict, but Science has the potential to free humankind from the yoke of ideology, balanced by ethics and shared values for a better World for all. An over-emphasis on reason does not warrant a reactive descent into ideology and irrationality. Agreed and shared values towards collective well-being have the potential to create a pivotal point of balance between reason and illogic, reinforced by an education system that harmonises cognitive with physical and socio-emotional development and which clearly distinguishes between values, beliefs and knowledge.

Neural scientists, biologists, psychologists and moral philosophers alike share an interest in evolutionary biology in seeking to resolve the contentious nature-nurture debate and the extent to which moral sense is inherent, imprinted genetically, or socialised. Recent discoveries relating to neural plasticity have clearly

indicated that both nature and socialisation play their part (Doidge, 2007), with implications for values-based childrearing and education.

In the realm of science, Watson's discovery of the structure of DNA, described in his autobiographical account *The Double Helix* (Watson, 1968), led to a proliferation of genetic research and discoveries culminating in the mapping of the entire human genome in 2000. The discovery was hailed an historic landmark achievement and "the most wondrous map ever produced by humankind" (BBC, 2000). This powerful knowledge of the key to human creation previously accorded to an omnipotent God alone, while bringing enormous benefit compels scientists to question the ethical considerations and possible species-polluting consequences of unchecked human interference in natural evolutionary processes. The risks and potential consequences of the genetic manipulation of plant, animal and human genomes, if allowed to escape laboratory confines, can exceed the capacity of the most learned scientists to control. Runaway genetic change can alter the path of evolution forever, the consequences of which are entirely unknown. The United Nations (UN) system establishes international standard-setting documents for addressing such risks, such as the *Universal Declaration on the Human Genome and Human Rights* (UNESCO, 1999a) and the *Universal Declaration on Bioethics and Human Rights* (UNESCO, 2006), replete with inspiring value-laden phrases and informed by existing human rights conventions. Nowhere is the need for a rigorous application of values and ethics more evident than in the field of genetic science and research, which has already found its way into school and university curricula, necessitating the integration of values in its educational approach.

The **economic** dimension of society is also in need of values to balance the rampant economic rationalism, over-production and consumerism, that have dominated the wasteful 'throw-away' culture for so long with dire consequences for so many. Aristotle referred to the **economy** as the "wise government of the family" (Horne, 1992, p. 23), but today economists have strayed far from this view of the family of humanity, obsessed with continuous growth, profit and productivity at all costs in a market motivated by greed (Horne, 1992, pp. 8-9). Saul referred to the "ethical slide" of the market and to a "marginalization of ethics" paralleled by an intense rise in corruption (Saul, 2006, pp. 184-185). Hamilton maintained that economics relied solely on the "validity of rationality to the exclusion of all else" (Hamilton, 1994, p. 160), leading to a lack of consideration for human well-being and environmental integrity. Although a strong and stable economy can bring material well-being and access to health, education, an enjoyable life and other benefits, economic production is fed from natural environmental resources, without which economic activity would falter. Alternative and sustainable economic systems are needed that can deliver universal well-being, while preserving the resources and natural systems upon which humanity depends. This cannot occur while the existing economic paradigm remains unchallenged and unchecked by global values, despite its repeated failure to deliver equitable benefits to the majority.

Free market ideologies that had promised to deliver prosperity, have instead led to widespread economic depression twice in 80 years, causing poverty, hardship and loss for many and an unstable global market economy that threatens to fail once again. Hawken claimed that while ecologists were concerned with nature and economists were concerned with economics, “human beings are abandoned to the marketplace” (Hawken, 1993, p. 131), unmitigated by a global values framework that would maintain a sense of justice, fairness and order. History has shown that economic disparity, exclusion and injustice inevitably lead to social conflict. Hence, it would be wise to observe the call of Voltaire to make the “dominant passion ... the public weal” (Saul, 1993, p. 6). Hawken called for an economy directed to creating “the best life for the greatest number of people” (Hawken, 1993, p. 205). In the same vein, Sperry called for a commitment to progress in terms of “improvement in the quality and dimensions of life” for all (Sperry, 1983, p. 23).

In his seminal work, *Development as Freedom* (Sen, 1999a), Sen interconnected economic with social and political freedoms as the path to universal well-being and highlighted the important role of education and democracy in achieving this. Sen explored the cross-dimensional aspects of development and advocated the expansion of individual and collective freedoms, (political, social, protective and economic), as both the primary end and principal means of development. Sen maintained that these alleviated human deprivation and oppression and provided choice and opportunity, thereby maximising human capacity to act as agents of positive change (Sen, 1999a, pp. 36-38). He argued that the traditional focus on economic and technological development and markets as the only **means** for human advancement had been unsuccessful in delivering equitable or humane outcomes, whereas the expansion of freedoms as an overarching objective “directs attention to the ends (i.e. human well-being) that make development important” (Sen, 1999a, p. 3). This view of development as needing to be human-centred rather than economically-centred is also advocated by the UN, which regularly calls for the humanising of development and for “globalization with a human face” (UNDP, 1999).

In the **socio-political** and **educational** dimensions of life, Connell considered Dewey’s 1916 treatise, *Democracy and Education*, the most important educational text of the twentieth century (Connell, 1980, p. 72). Dewey conducted a critical analysis of contemporary theories of knowing and moral development, which were to influence educators for over 80 years. He proposed an “intimate organic connection” between the acquisition of knowledge, everyday life experiences, both inside and outside school, and educational methods and materials with character development, moral growth and conduct (Dewey, 1916, p. 360). Dewey connected learning with participation in everyday life, involving realisations about values through experiencing rather than merely by theoretical learning, socialisation, or routine habit formation.

Dewey proposed that education in a democracy was ideally to be orderly and sequenced, forming a developmental social process that enabled free communication, equal and informed participation, contributing towards societal change and well-being and leading to the continued capacity for learning and growth throughout life (Dewey, 1916). Education was not to be limited to the classroom, nor crammed into 12 brief years, but to extend to the whole school community and throughout life. Education was to be immediately relevant to everyday experiences, events and emotionally charged interactions, thereby ensuring their retention in memory. From the work of Dewey, Sen and numerous relevant UN documents, it is concluded that education in a free and open democratic society that promotes shared values for societal well-being, can assist greatly in addressing socio-economic injustice, resolving conflict and restoring balance with the natural world.

While democracy has adopted various forms and levels throughout the World, it is generally associated with individual and collective civic participation, rights, liberties and freedom of speech, in varying degrees. According to Giddens (2000), democracy was “the most powerful energising idea of the twentieth century”, having more than doubled in the number of countries that have adopted democracy throughout the World since the mid-1970s. Some countries have had to struggle and fight for democracy, while others have experienced transition problems or reversals, while in oppressive regimes human rights have frequently been abused (Giddens, 2000). However, Saul recalled that long-standing democracies in the West themselves also “emerged slowly out of highly imperfect conditions” (Saul, 2006, p. 203). Democratic values and principles are therefore to be nurtured and reinforced constantly through education to maintain their original intent in practice, or at least towards forms of governance that retain respect for human rights and well-being.

Australia inherited its democratic system from Britain without having to fight for it, thus many freedoms are now taken for granted. More is expected of democracy and a sense of disillusionment with democratic process is growing, accompanied by a loss of trust in politicians who are perceived as self-interested and corrupt. Giddens explained this trend as occurring in open information societies that produced “more active, reflexive citizenries” in a “detraditionalising world”. To counter it would require a deepening and broadening of democracy at the global level (Giddens, 2000) and the promotion of democratic principles and values in education (such as ‘participation’ and ‘open dialogue’) reflected in the content, methods and processes.

Although considerable attention has been given to authoritative texts in the sciences, socio-politics, economics and education, this has not been the case in the field of **ecology** until recently. Early warnings were expressed in the environmental classics, such as: Marsh’s *Man and Nature* (1864); Carson’s *Under the Sea-Wind* (1941), *The Sea Around Us* (1951) and *Silent Spring* (1962), which helped trigger the beginnings of

the environmental movement; Commoner's *The Closing Circle* (1971); and *The Limits to Growth* report to The Club of Rome (Meadows, Randers and Behrens, 1972), which predicted that economic growth could not continue indefinitely because of the limited availability of natural resources. Yet only committed environmentalists responded to these until the United Nations (UN) organisation initiated a series of influential international conferences and reports that captured public attention.

Gore's book and documentary film of the same title, *An Inconvenient Truth* (Gore, 2006), highlighted the shocking impact of human activity on climate, which for the first time reached a global audience of millions. The predictions of social and economic collapse, foreseen in *The Limits to Growth* report (1972) appeared to be unfolding. The Intergovernmental Panel on Climate Change (IPCC, 2007), in its fourth assessment report, *Climate Change 2007*, gave evidence of melting glaciers, rising seas, changing weather and temperature patterns, inundation, transforming landscapes, extreme events, reduced rainfall, drought and water and food insecurity, among other findings, as a result of human-induced warming. Because of the level of controversy surrounding climate change, the Royal Society published *Climate Change: A Summary of the Science* (Pethica et al., 2010) and the Australian Academy of Science published *The Science of Climate Change: Questions and Answers* (AAS, 2010), which challenged the sceptics who sought to delay action on climate change for at least two decades. Although some nations are gradually developing national policies and strategies to address climate change, the level of international cooperation leaves much to be done, since political, economic and corporate interests continue to dominate concerns.

The contribution of the United Nations

Arguably the system best able to foster the level of international cooperation needed to address the significant challenges faced by humanity is the United Nations (UN), with almost universal representation among nations. The founders of the UN left a structural legacy after World War II that today enables open international debate and agreements in many fields based upon principles drawn from the UN founding documents, such as the 1945 *UN Charter* and the 1948 *Universal Declaration of Human Rights* (UDHR). Since its very beginnings the UN has fostered global dialogue, exchange and cooperation towards common goals based on shared values, directed to the equitable advancement of humanity in all areas of life. Collective aspirations for a peaceful, just and sustainable World have been expressed in the numerous international conventions and agreements to which UN member countries are signatories. This book analyses the global values most commonly expressed in relevant documents as a basis for application to Education for Sustainable Development (ESD) in concert with local values.

For decades the UN has convened international conferences that have addressed a wide range of socio-economic and environmental concerns, beginning with the 1972 Stockholm Conference on the Human Environment, followed later by the 1987 Brundtland World Commission on Environment and Development

(WCED) and more recently, the UN Climate Change conferences held in Copenhagen in 2009, in Cancun in 2010 and in Durban in 2011, to name a few. The UN also declared the period 2005 to 2014 the UN Decade of Education for Sustainable Development (DESD), with the goal of integrating the principles, values and practices of sustainable development into all aspects of education and learning. The DESD aimed to foster changes in behaviour towards a more sustainable future in the areas of the environment, the economy and society, in ways appropriate to local cultural contexts. This decade coincided with the International Decade for a Culture of Peace and Non-violence for the Children of the World (2001-2010), the International Year of Planet Earth Triennium (2007-2009) and the UN Decade for Human Rights Education (1995-2004), which led to the establishment of the World Programme for Human Rights Education (WPHRE). These international initiatives together provide a concentrated international focus on the type of education needed for a peaceful, just and sustainable World and an opportunity for change not to be missed. It remains to be seen whether the global rhetoric translates into practical action.

By analysing the content of these and other relevant international documents, this study demonstrates that what is needed at this time is an integrated, values-based approach to Education for Sustainable Development (ESD) that develops the whole learner (i.e. cognitive, physical, emotional, social, moral and spiritual). This handbook focuses particularly on the development of values for ESD since values are very much needed at this time and have been somewhat neglected in education when compared to the acquisition of knowledge and skills. Nonetheless, the key features of a quality approach to ESD are also examined, including the knowledge and cognitive and functional skills needed for transforming thinking, lifestyles and work practices, tested against the Australian National Curriculum as a case study.

Even though pedagogy is addressed only in passing in this book, the need for conducive learning environments and positive relationships are emphasised, as are democratic processes of teaching and learning to foster responsible civic participation and informed ethical action for bringing about positive societal change. Education has a special role to play in facilitating the transformation needed, which is to shift from an individualist and materialist consumer society to one that embraces both individual and collective needs for a sustainable future, while preserving the environment and enabling well-being for all.

The subject is addressed from a global perspective applied to the Australian context however the principles and processes advanced can be adapted to any national or regional context. No country can isolate itself from global concerns in an interdependent and globalised World and learners today need to be prepared to become global citizens while addressing local concerns. Although this book applies the values, knowledge, skills and characteristics for ESD to schooling, these are equally adaptable to all levels of education and training.

The key agency in the UN system with responsibility for education and for international exchange in education, the sciences, culture and communications, is the United Nations Educational, Scientific and Cultural Organization (UNESCO). UNESCO is also the leading agency for implementing the UN Decade of Education for Sustainable Development (2005-2014), which promotes an integrated approach to education for sustainability based on values, bringing together all interconnected dimensions of sustainability (i.e. socio-cultural, environmental and economic). This handbook draws on the 2004 draft International Implementation Scheme (IIS) for the UN Decade of Education for Sustainable Development (ESD) as the guiding document to inform the development of key characteristics of ESD, needed to address global challenges for a sustainable World.

Since its establishment, UNESCO has published numerous influential books and documents relevant to this subject, promoting values-based solutions to socio-cultural, economic and environmental issues, for attaining equity, peace, human rights and well-being for all. Among these was de Cuéllar's 1995 Report of the World Commission on Culture and Development (WCCD), *Our Creative Diversity*, which reformulated the concept of development with a **socio-cultural** focus, in terms of human well-being rather than of economic progress alone. The report proposed alternative models for development that preserved cultural heritage and diversity based on a global ethic of shared values. The report was significant since it directed sustainability towards maintaining economic viability, protecting environmental integrity and diversity, sustaining social cohesion and preserving cultural and linguistic diversity; an aspect of sustainability that often has not been recognised.

The field in which UNESCO has been most influential is undoubtedly **Education**, both internationally and in Australia. Two of the most influential international reports on education to emerge from UNESCO were: (a) Faure's 1972 Report of the International Commission on the Development of Education, *Learning to Be: The world of education today and tomorrow*, which proposed whole-person lifelong learning for "democracy, humanistic development and change" for redressing the imbalanced "relationship between man and his environment" (Faure, 1972, p. 101); and (b) the Delors 1996 Report of the International Commission on Education for the Twenty-first Century, *Learning: The Treasure Within*, which also highlighted the need for whole learner development through values-based education (Delors, 1996, p. 94). This book discusses the findings of these two leading education reports and other relevant UNESCO publications insofar as they relate to ESD.

In writing about UNESCO's purpose and philosophy after its founding in 1946, UNESCO's then Director-General Mayor cited Huxley, who argued that values must consciously guide the work of the organisation:

UNESCO cannot be neutral in the face of competing values ... any ... system (of values) which is unconsciously assumed is less likely to be true than one which is consciously sought after and studied. (Mayor, 1995, p. 79)

It is argued that the conscious and explicit choice of global values are needed in education for a sustainable World, without which: (a) market-based and media-imposed values might continue to dominate without regard for human well-being or environmental concerns; (b) scientists and bio-geneticists might continue their developmental research untempered by ethical or environmental considerations; and (c) the homogenising impact of communication technologies might reduce the world's rich and diverse tapestry of cultures and languages to a handful that hold economic and technological sway.

A founding and active member of UNESCO, Australia is a young nation that has not experienced war within its borders, is located on an island continent in the southernmost part of the globe, and is seemingly sheltered from global vicissitude. Nonetheless, the reality of global interdependence has now reached its shores. The inter-related issues of climate change, environmental degradation, the global financial crisis (GFC), growing intercultural and inter-religious conflict in a multicultural society, increasing pressure from asylum seekers, the constant threat of terrorism and growing social concerns and inequities internally, present education in Australia with many complex challenges and competing priorities. A consistent national approach to education for a sustainable society across the Australian States and Territories is required to address these challenges. Such an imperative applies to all nations for addressing respective local challenges linked to global concerns.

Towards a National School Curriculum

There has been a tradition of innovation in education in Australia dating back to the mid-1960s when the first ideas for a National School Curriculum were being explored by educational pioneers ahead of their time. Although the six separate colonies had formed a national Federation of States in 1901, the Australian States and Territories retained legislative control over public education and the school curriculum, as they do today, making consensus difficult (Reid, 2005, p. 15). The only effective national forums for professional exchange in the 1960s and early 1970s were the education conferences organised under the auspices of the Australian National Advisory Committee for UNESCO, since official curriculum cooperation was difficult. It was not until 1973 when the Commonwealth Schools Commission was established, followed by the Curriculum Development Centre (CDC) in 1974, that national cooperation in education officially began (Keeves, 1999, pp. 120-121). There were repeated attempts at establishing a national curriculum by several Federal Education Ministers, beginning with Fraser in 1968 with the Australian Science Education Project (ASEP), Dawkins between 1988 and 1993 and by Nelson in 2003. Efforts were also made by Skilbeck from the CDC in 1980 and by the Curriculum Corporation with the production of national learning materials from

1997. But it was not until mid-2010 that the first national curriculum documents were officially released for implementation. After a journey of more than 40 years, the Australian National School Curriculum had finally arrived. It had been helped along the way by the first statement of the National Goals for Schooling in 1989, which was revised in 1999 and again in 2008 and by the development of the Core Curriculum for Australian Schools by the Curriculum Development Centre (CDC) in 1980 and the mapping of the Mathematics Curriculum across all States and Territories in 1988, followed by Science and Technology (Keeves, 1999, p. 122).

Until very recently values and moral reasoning were not explicitly evident in Australian school curricula or in the various learning domains, except for a sub-area of personal development (Keeves, 1999, p. 122), since education was for a long time considered to be either values-free or values-neutral (Keown, 2005, p. 1). The Values Education Study commissioned by the Australian Government in 2003 found that schools were not values-free and that formal and hidden curricula were in fact based on values (DEST, 2003). The Australian Government then established the National Framework for Values Education in Australian Schools (NFVE), conducting trials in selected Australian schools and documenting case studies of good practice, leading to quality criteria for values education. This work provided the foundation for the systematic integration of values in Australian schooling.

Although the development and integration of values in education can trigger the necessary personal and societal changes of attitude and provide the intrinsic motivation to adopt sustainable lifestyles, values alone are insufficient to create the extent of transformation required for a sustainable society. A paradigm shift is needed that includes values, but that also alters systems of thinking by critically examining underlying assumptions, challenging old habits and developing a systemic global consciousness that understands the interconnections between the local and the global. Trans-disciplinary and transformative learning are vital for enabling critical systems thinkers to find innovative, ethical solutions to complex, inter-related and multi-dimensional problems from diverse perspectives and with equitable outcomes.

Given the urgency of current problems that threaten our socio-cultural, environmental and economic systems, learners and educators need not only to undergo a personal transformation of values and systems of thinking, but also need to understand the holistic processes of personal and societal transformation that engage the whole person. By understanding personal change processes, learners acquire the tools to develop themselves continually throughout life. Furthermore, by understanding social change processes they are empowered to become agents of change in their school, community and work place. In addition to acquiring values and transforming thinking, learners therefore also need to develop the functional skills to apply knowledge and values in practice for collective benefit.

These are just some of the factors that need to be considered when developing educational programs and curricula for sustainability. Although the Australian National Curriculum is used as a case study in this handbook, the principles, features and processes outlined here may be applied to ESD programs and curricula in any country adapted to local concerns.

Conclusion

From an extended text analysis of international documents and relevant literature, this book examines the values, knowledge, skills and quality features of Education for Sustainable Development (ESD) and considers how values can best be taught and learned for a sustainable future. Downey (1965) claimed that schools operate in three ways: by what they teach, by how they teach and by the kind of place the school is. These three areas are investigated to propose a coherent approach to values-based ESD, built upon a comprehensive review of scholarly writing and international documents that set the standards required. In addition to the values, skills and knowledge for ESD, the quality features of ESD are advanced to form of a set of evaluative criteria, tested against the developing Australian National Curriculum as a case study - the first Australian curriculum deliberately to include 'sustainability' as a cross-curriculum priority (Commonwealth of Australia, 2010, p. 5).

This handbook emphasises the need for education at all levels to enable learners to become responsible and ethical global citizens, equipped to contribute to the societal transformation needed for sustainable human development. Such an education would ideally be based on the shared global values derived from the UN system that can foster a peaceful, just and sustainable World. Since international consensus has already been reached regarding the nature of education needed to respond to current circumstances, termed Education for Sustainable Development (ESD), this study therefore begins with the background to ESD and the International Scheme (IIS) proposed for its global implementation, hereafter referred to respectively as ESD and the IIS.

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ACRONYMS

AARE	Australian Association for Research in Education
AAS	Australian Academy of Science
ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum Assessment and Reporting Authority
ACCU	Asia Pacific Cultural Centre for UNESCO
ACER	Australian Council for Educational Research
AEC	Australian Education Council
AGPS	Australian Government Publishing Service
AI	Amnesty International
APCEIU	Asia Pacific Centre for Education for International Understanding
APNIEVE	Asia Pacific Network for International Education and Values Education
ARIES	Australian Research Institute for Environment and Sustainability
ASEAN	Association of Southeast Asian Nations
ASEP	Australian Science Education Project
ATSI	Australian Aboriginal and Torres Strait Islander peoples
AuSSI	Australian Sustainable Schools Initiative
BBC	British Broadcasting Commission
BCE	Before the Common, Christian or Current Era
CAP	Canadian Association of Principals
CCWA	Curriculum Council of Western Australia
CDC	Curriculum Development Centre (Australia)
CEL	Center for Ecoliteracy (USA)
CIRET	International Centre for Transdisciplinary Studies and Research
CPWR	Council of the Parliament of the World's Religions
DECS	South Australian Department of Education and Children's Services
DEET	Northern Territory Department of Employment, Education and Training
DEETYA	Department of Education Employment Training and Youth Affairs
DEEWR	Department of Education, Employment and Workplace Relations
DEH	Department of Environment and Heritage (Australian)
DESD	United Nations Decade of Education for Sustainable Development (2005-2014)
DEST	Department of Education Science and Training
DET	NSW Department of Education and Training
DETA	Department of Education Training and the Arts, Queensland

DEWHA	Department of the Environment, Water, Heritage and the Arts
DIC	Department of Immigration and Citizenship
DNA	Deoxyribonucleic Acid (i.e. genetic code for all life forms)
DoE	Department of Education, Tasmania
ECI	The Earth Charter Initiative
EE	Environmental Education
EFA	Education For All
EfS	Education for Sustainability
EIU	Education for International Understanding
EPD	Environment, Population and Information for Human Development Project
ESD	Education for Sustainable Development
ESF	Education for a Sustainable Future
GFC	Global Financial Crisis
HDI	Human Development Index
HDR	Human Development Report
HENT	Holistic Education Network of Tasmania
HIV/AIDS	Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome
HPI	Human Poverty Index
HRE	Human Rights Education
IBE	International Bureau of Education
ICE	International Conference on Education
ICES	International Conference on Environment and Society
ICT	Information and Communication Technology
IEEP	International Environmental Education Programme
IIS	International Implementation Scheme for the United Nations Decade of Education for Sustainable Development (2005-2014)
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature and Natural Resources
MCEECDYA	Ministerial Council, Education Early Childhood Development and Youth Affairs
MCEETYA	Ministerial Council for Education Employment Training and Youth Affairs
MDGs	United Nations Millennium Development Goals
NCB	National Curriculum Board
NFVE	National Framework for Values Education in Australian Schools
NGO	Non-Government Organisation
OECD	Organisation for Economic Cooperation and Development
OHCHR	Office of the UN High Commissioner for Human Rights

PDF	Portable Document Format
SACSA	South Australian Curriculum Standards and Accountability Framework
SD	Sustainable Development
SEMP	School Environment Management Plan
SOSE	Studies of Society and Environment (Learning area in Australian schooling)
TELS	Tasmanian Essential Learnings
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	International Centre for Technical and Vocational Education and Training
UNHCHR	United Nations High Commission for Human Rights
UNLD	United Nations Literacy Decade
USA	United States of America
VCAA	Victorian Curriculum and Assessment Authority
VEGPSP	Values Education Good Practice Schools Project
WCCD	World Commission on Culture and Development
WCED	World Commission on Environment and Development
WCEFA	World Conference on Education for All
WPHRE	World Programme for Human Rights Education
WSSD	World Summit on Sustainable Development
WVS	World Values Survey
WWF	World Wildlife Fund

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ABOUT UNESCO APNIEVE Australia

UNESCO APNIEVE Australia is the Australian Chapter of the Asia Pacific Network for International Education and Values Education. APNIEVE has as its principal objectives the promotion and development of international education and values-based education for peace, human rights, democracy and sustainable development.

The Regional network was established in 1995 under the auspices of UNESCO while the Australian Chapter was established in Adelaide in May 2000. Since that time APNIEVE has been active in conducting professional development for educators and in developing a series of source books for teachers.

More information about UNESCO-APNIEVE Australia may be found at the national website:

www.unesco-apnieve.edu.au

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Other books produced by UNESCO APNIEVE

APNIEVE. 1998. *Learning to Live Together in Peace and Harmony. A Sourcebook for Teachers.* Bangkok: UNESCO Publishing.

APNIEVE. 2002. *Learning to Be. A Holistic and Integrated Approach to Values Education for Human Development.* Bangkok: UNESCO Publishing.

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APNIEVE. 2009. *Learning to Know for a Peaceful and Sustainable Future.* Korea: UNESCO APCEIU.

Paperback copies of this book may be purchased from UNESCO APNIEVE Australia by ordering online at: www.gesd.org