

Sharpening New Zealand's future focus

A scenaric stance

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KEY POINTS

- *Future focus* is one of the eight principles of the *New Zealand Curriculum*. It is based on the concepts of enterprise, sustainability, globalisation, and citizenship. However, there appear to be some difficulties in interpreting and implementing the *future focus* principle in schools.
- Some of the published literature on the *future focus* principle appears to draw on and accept the idea (which is commonly repeated in public life) that New Zealand's future is as part of a fast-paced, globalised knowledge economy, and that schooling needs to change to reflect this.
- The globalised knowledge economy is only one possible future for New Zealand. There are others. The task of futures education is to help students critically explore a range of possible, probable and preferred futures. This can be achieved through what we call a "scenaric" stance, and each learning area has an important contribution to make.

Future focus is one of the eight principles of the New Zealand curriculum. However, the term is sometimes conflated with the more-expansive term *21st-century learning*, which, this article argues, accepts uncritically dominant assumptions that New Zealand's future is as part of a hyper-globalised, fast-paced, capitalist world. This article insists on *future focus* as a means of developing the curriculum to support pupils as they learn to think critically about globalisation, sustainability, enterprise, and citizenship. Using the example of scenario-building in the context of carbon-based economies and high-consumption lifestyles we emphasise that futures education requires important skills of study, analysis, creation, imagination and interpretation.

Introduction

The curriculum is a message to and about the future
(Inglis, 1985)

This article is about the *future focus* principle in *The New Zealand Curriculum (NZC)* (Ministry of Education, 2007). *Future focus* is one of the eight principles on which *NZC* is based. *NZC* states that: "The curriculum encourages students to look to the future by exploring such significant future-focused issues as sustainability, citizenship, enterprise, and globalisation" (p. 9).

Future focus is to be delivered through existing learning areas, which are categorised as English, the Arts, Health and Physical Education, Mathematics and Statistics, Learning Languages, Science, Social Sciences, and Technology. There is some evidence that schools and teachers are currently finding it difficult to do this. For example, a recent Education Review Office (2012) report stated that *future focus* was: "the least evident of all the principles at school curriculum level in classrooms' curricula. It had not been adequately examined and discussed with teachers by school leaders and therefore most of its aspects were not understood" (p. 21).

This may reflect the complexity of the four terms that comprise the *future focus* principle. Bolstad's (2011) report on NZCER's *future focus* research projects states that: "When we have asked teachers, students and other people to tell us what the words sustainability, enterprise, globalization or citizenship mean to them, many have struggled to articulate their thoughts" (p. 11).

The Ministry of Education's (2011) brief guidance document on the *future focus* principle offers little practical support in conceptualising these terms. Without such a conceptual understanding, the danger is that the *future focus* principle will either be ignored or that

teaching will be fragmented and misinformed. There is, therefore, an urgent need to enable school leaders and teachers to develop informed approaches to "futures" work in curriculum planning. This article is offered as one starting point. It begins by summarising the background and concepts of futures education and how this relates to New Zealand. It then focuses on scenario building as a flexible approach for school leaders and teachers to build the *future focus* principle into school professional development and curriculum work.

What is futures education?

One starting point for guidance on developing the *future focus* principle in school curricula is the field of futures education (for a brief but authoritative introduction to the field, see Sardar, 2013).

Futures education was closely linked to the emergence of "new social movements" that challenged the direction of Western modernity and overlapped with an ensemble of "adjectival studies", such as world studies, global education, peace education, development, and environmental education (Dufour, 1990). Important and representative texts include Pike and Selby (1988), Hicks (1988), Beare and Slaughter (1993), and Hutchinson (1996). These books reflect the concerns of the 1980s around nuclear war, environmental threats, and demographic change. They accepted the arguments of the "new social movements" about the need to integrate the "personal", "political", and the "planetary", and argued that schools should explicitly teach with a futures perspective since, paradoxically, schools did not provide students with the intellectual resources to think about, and actively create, "futures" (Slaughter 1988). An important feature of this literature concerned the role of teachers in curriculum change, finding ways to teach about possible, preferred,

and probable futures in principled and engaging ways (for a more recent statement, see Hicks 2012a).

In the 1990s, the influence of futures education waned in the face of school reforms geared towards producing human capital and economic growth. However, recent years have seen a revival of interest in the idea of futures education, or what we prefer to call “second-wave” futures education. This is reflected, for example, in the OECD’s “scenarios” for the future of schools, and texts such as Facer’s (2011) *Learning Futures*.¹

There are some important differences between first- and second-wave futures education. While early futures education originated in classroom practices and was closely linked to teachers’ work, second-wave futures education is more concerned with imagining alternative organisational and system changes. This change is reflected in Beare’s (2001) *Creating the Future School*, which effectively links the “new age” rhetoric around networks and systems with the aspirations and visions of school reform. Second-wave futures education assumes that epochal shifts in the nature of economy and society mean that schools created for the “industrial age” are no longer “fit for purpose” for the 21st century. In the next section we argue that much of the work that characterises futures education in New Zealand to date shares this assumption.

New Zealand’s futures

In our view, the interpretation of “futures” work in New Zealand education has been shaped and constrained by a powerful unfolding narrative about the future that exists in wider political and cultural debates. This is essentially a fast-paced capitalist future. In this section, we argue that developing a future focus in school curricula will need to go beyond this powerful but limiting discourse.

In New Zealand, policy makers’ concern with the “future” can be traced to the economic crises of the 1970s. The end of the Long Boom of the period following World War Two prompted debate about New Zealand’s future. In the early 1970s, the Muldoon government commissioned *New Zealand at the Turning Point* (Task Force on Economic and Social Planning, 1976) (the Holmes Report), and subsequently established the New Zealand Planning Council and the Commission for the Future. This concern with New Zealand’s future has intensified, with the McGuinness Institute noting 16 major initiatives that focus on New Zealand’s future between 1990 and 2008 (McGuinness et al., 2011). Some of these are highly significant, such as the Porter Project of the early 1990s (Crocombe, Enright, & Porter, 1991) and the Knowledge Wave initiatives of the early 2000s (University of Auckland Business Review, 2001). Both initiatives focused on ideas about the need

for New Zealand to improve its competitiveness and develop innovation, and had important ramifications for education. The notion of competitiveness underpinned the 1993 national curriculum (Ministry of Education, 1993) and stressed the importance of entrepreneurialism and the need to produce human capital). The Knowledge Wave was based on the idea that advanced western economies have qualitatively and quantitatively shifted towards post-industrialism and that New Zealand must find ways to encourage innovation. In education, interest in these ideas was prompted by Jane Gilbert’s (2005) influential book *Catching the Knowledge Wave?* which documented the contours of an epochal shift in the nature of economies and explored their implications for schooling and curriculum.

The argument (daily repeated in the media) that New Zealand’s future will be closely linked to the emergence of a “knowledge society” inevitably shapes educational discussions. We argue that much of the work of the NZCER around educational futures is clearly linked to second-wave futures education because it starts from the assumption that education is not fit for purpose for the 21st century, and then sets out to indicate the forces that are shaping the future and show how schools need to change to reflect these developments. Such work broadly accepts the argument that “current schooling approaches are not sufficient to address and support 21st century learning needs” (Bolstad, 2011–12) and seeks to find ways to help policy makers and school leaders re-invent their practices. This is not simply a New Zealand phenomenon: the work draws upon influential international commentators such as Charles Leadbeater who have a clear view of how education needs to change, and organisations such as the Global Education Leadership Programme (GELP) which is part of a wide network of powerful corporations who are insistent on the need to bring about “system wide innovation and change”. Thus, New Zealand futures education is linked to a global network of think-tanks, policy makers and corporations who seek to reform education in ways that are in line with how they imagine the world to be in the future (e.g., Cisco Systems, 2010; Hannon, Gillinson & Shanks, 2013).

As educators, we think it is important to critically examine this “imaginary future” and the values and assumptions that underpin such work. Our concern is that such work can too easily accord with the views of global capital and corporations (Goldman & Papson, 2011). This version of educational futures suggests that successful schooling will enable New Zealanders’ to play their part in a globalised knowledge economy which is predicated on high levels of mobility and travel, and participate in an economy geared to personal and collective consumption. This is a future where the state

plays a minimal role in collective provision and where both nation-states and individual are compelled to “compete and thrive”. It is this vision that helps explain the intense focus on achieving NCEA credentials, maintaining the nation’s standing in international league tables, and the (perhaps apocryphal) sign on the entrance to one school in Auckland which reminds students: “No pressure, no diamonds”.

Such high-stakes models of schooling are effectively preparation for life in the consumer society. They encourage us to think of ourselves as individuals who have succeeded or failed according to our own merits while downplaying the role of social class, race, and gender as determiners of material rewards. The rewards are expressed through having access to the products and choices of the consumer society. Of course, this does not presume narrowly materialistic lifestyles, but that is the model of the “good society” that is implied.

To clarify our argument: the problem with the type of future-oriented discourse that has developed in New Zealand is that it does not explicitly encourage schools or teachers to provide young people with the opportunity to envisage and imagine alternative futures, and as such goes against the spirit of first-wave futures education which was characterised by a concern to imagine and critically examine a wide range of societal futures. In this sense it is useful to think of futures as “invented traditions”. This was the term used by Eric Hobsbawm (1983) to describe the ways in which nations use symbols, myths, emblems, and stories to construct a sense of historical tradition. Hobsbawm’s approach points to the ways in which influential groups and classes get to define what the past means and therefore can shape the future. By the same token, nations, powerful groups, and classes also seek to construct or invent the future. Thus, in considering any representation of the “future”, it becomes important to ask: who is asking us to imagine the future, in what ways, and why?

We realise that for some readers this criticism of the direction of New Zealand futures education may seem too harsh, especially as we write as relative “newcomers” to the country. We should make it clear that we are not suggesting that individuals or organisations have contrived or conspired to promote a singular view of New Zealand’s future. Instead, we are suggesting that, at the present time there is a powerful discourse or narrative about that future which understandably shapes discussions within education.

A note on post-carbon social theory

Against this powerful narrative about New Zealand’s future, we argue that educational work should help pupils to understand there is no single and set trajectory for

New Zealand’s future. Indeed, New Zealand, as part of the global capitalist economy, faces an uncertain future. Its trajectory in the period following World War Two was linked to American Fordism which set it on the path to high levels of material consumption, easily visible in the landscape in the form of housing and car ownership (Rolfe, 1999). A consumer society promotes social norms of privatisation and individualisation, and the concomitant speed-up and de-traditionalisation of social relations. These forces, which were growing in influence from the late 1960s and throughout the 1970s, were unleashed in the last quarter of the 20th century in the form of the “neoliberal experiment” which fundamentally altered the economic and cultural landscape of New Zealand (Kelsey, 1995; Le Heron & Pawson, 1996). However, the period since 2007 has seen relatively low levels of economic growth and low wage growth. This increases social tensions and requires high levels of household debt to maintain cultural expectations of consumption and travel. On a broader scale, the continued sustainability of highly mobile societies based around steel and oil is increasingly questioned, and the viability of such societies is uncertain (Urry, 2011; Elliott & Urry, 2010).

The idea of a post-carbon society is associated with the sociologist John Urry and his collaborator Anthony Elliott (Urry, 2011; Elliott & Urry, 2010). The assumption is that most social theory has developed and proceeded on the assumption of carbon-based modernity. Thus, the social sciences emerged to describe and explain societies that were experiencing the “shock of modernity” as they went from agrarian (rural) to industrial (urban) modes of organisation. Urry and Elliott argue that we can no longer take for granted the continuance of a carbon-based modernity, and social theory needs to “factor in” the decline of a carbon-based way of life.

The implications of post-carbonism for schooling are potentially profound given that the current curriculum is based on a carbon-blind model of society and culture. School learning areas, to a greater or lesser extent, assume the continuance of a carbon-based society and are oriented towards that future without an understanding of how a carbon future is now compromised by the evidence of climate change and the pressures of carbon energy shortage as peak oil production is reached. These factors need to be considered as main drivers in curriculum work on futures.

In our recent work (see Matthewman & Morgan, 2013; Matthewman, 2010; Morgan, 2011) we have argued that all curriculum subjects need to find ways to teach about post-carbon futures. Bolstad’s (2011) research on future focus and reports by ERO (2012) show that *future focus* in schools has been based on cross-curricular project work and seen as an opportunity to integrate authentic learning contexts. This might involve sustainability work, such

as restoring local areas, or enterprise projects with local business involvement. However, while action competence is undoubtedly valuable in developing students' ability to problem solve and work collaboratively, this does not necessarily translate into an understanding of how action fits into different perspectives on the possible, probable, and preferred scenarios of the future. Learning areas can provide the critical framing, knowledge, and representational tools for thinking about the future from different perspectives. For example, English lessons might involve writing future vision stories based on scenarios of future citizenship; science lessons might focus on the science of climate change as part of sustainability; technology might consider enterprising and innovative future designs. The following section sets out some ideas for scenario work within the framework of the *future focus* principle of *NZC*.

A scenario approach to futures education

Futures education has developed a variety of “tools” and methods which allow teachers and students to explore futures in manageable ways. Readers of this journal may be aware of materials developed to support the Secondary Futures project in the 2000s (see, for example, Moore & Robinson, 2008). One of the simplest tools is the futures wheel, which starts with a single event and then works to explore all the possible consequences of this event; a second is the futures tree, which branches into probable, possible, and preferable futures; and the third, more complex tool (which we discuss in detail here), is that of scenarios which describe a set of different futures and ask students to examine how these might have come about, who are the winners and losers in such scenarios, and which are most likely or preferable. A key principle of futures education is that it insists on the openness of the future while being based on an understanding of existing trends within the present. Facer (2013) defines this as a “scenario stance” which entails: “An orientation towards the future that restlessly resists closure and that systematically seeks to open up awareness of and routes towards multiple futures” (p. 138).

Scenario building involves setting out various scenarios for a future year based on known social, economic, political, and environmental trends and “drivers of change”, establishing a plausible timeline of events, as well as playing out the implications of so-called “wild cards”—the unpredictable factors which may occur and impact on possible, probable, and preferable futures. A recent example of a wild card was the global financial crisis of 2008, whilst future wild cards might include the discovery of cheap renewable energy, the opportunities

for new forms of social relations afforded by digital technologies, or the impact of a major global pandemic. It is important to stress that scenarios are not forecasts of the future—since the future cannot be known—but are ways of imagining how different forms of action and events have linked consequences and implications for future outcomes. Scenarios therefore seek to build representations that are internally consistent and convincing.

One of the advantages of scenarios is that they allow teachers to provide some context to the abstract notions of globalisation, sustainability, citizenship and enterprise found in the *future focus* principle of *NZC*. Scenarios offer the potential to explore these different aspects of the future focus principle in a way that is coherent and linked.

Scenarios are a powerful thinking tool for professional development in future focus and school curriculum planning. In the next section we want to explore the potential of using scenario building as a method of opening up the curriculum to alternative futures. We will provide some examples of scenarios and then offer some practical activities which can be developed around scenario building.

Examples of “authored” scenarios

All scenarios are authored. That is, they represent the interests, beliefs, and experience of particular individuals or teams. This can be made explicit and analysed in classrooms, and schools can build scenarios around their own interests, concerns, and focus.

For our interest in post-carbon futures, a challenging set of scenarios is provided in Newell and Paterson's (2010) *Climate Capitalism*. The authors' acknowledge that in the foreseeable future there is no credible alternative to capitalism. However, they argue that current forms of “carboniferous capitalism” (i.e., economies that are based on the sequestration of carbon from rocks) are unsustainable, and that the next 50 to 100 years will be characterised by moves to “de-carbonise” existing economic and social relationships. The future will be a post-carbon one. Whilst their scenarios focus on the economics and politics of climate change, the sociologist John Urry offers an account of “post-carbon” futures that explores social and cultural dimensions of these developments:

It is now clear just how energy is crucial to this new century: without sufficient energy and harnessed in the right long term way, many societies and many lives will reverse from their apparently inevitable high carbon trajectories. We all need to be thinking futures even if doing so is immensely difficult. (Urry, 2011, p. 139)

Urry describes four scenarios: *perpetual consumerism*; *local sustainability*; *regional warlordism*; and *low carbon/digital networks*. The scenarios are summarised in Box 2 as they

provide powerful models for schools and teachers to work with and adapt.

Post-carbon Futures (after Urry 2011)

1. Perpetual consumerism
In the perpetual consumerism scenario, the discovery of a technological fix for cheap emission-free energy facilitates a society based on high levels of consumption, connectivity, and mobility. The downside to this scenario is that perpetual consumerism will involve unequal access to resources and will create high levels of stress due to the pressure of hyperconnectivity. This is a scenario that feels familiar to us and also possible because it is based on our rapidly evolving experience of digital technology. However, Urry insists that it is dependent on the improbable discovery of cheap and emission-free energy, and therefore unlikely to eventuate.
2. Local sustainability
The scenario of local sustainability involves a reversal of all the social and economic trends and systems of the twentieth century as local communities reduce their carbon footprint and learn to live in sustainable, tight-knit, and self-sufficient communities with limited mobility and consumption. Given the extent to which we have become accustomed to current high-carbon lifestyles, this would be the least likely outcome of any global crisis in energy supply and climate change effects.
3. Regional warlordism
In the regional warlordism scenario, society and nation-states become increasingly unstable, with breakdowns in global and local infrastructure as climate change and peak oil effects cause damage to food, water and energy supplies, and infrastructure. The rich insulate themselves from environmental and social breakdown in gated communities. Resultant struggles over resources lead to civil unrest and tyrannical forms of governance and/or competing communities against a backdrop of general chaos and lawlessness. There are signs that this is already happening in parts of the poor South, and Urry regards this as a likely outcome of “business as usual” combined with climate and energy crisis.
4. Low carbon/ digital networks
Urry describes the low carbon/digital networks scenario in some detail as a preferable and possible future. It would involve digital management and coordination of transport and high levels of connectivity capable of simulating face-to-face contact. Low-carbon lifestyles would be facilitated by alternative forms of technological innovation. Communities would be compact and self-reliant but networked to be efficient in the use of resources. This scenario would require significant investment and innovation, and a downside is that it could involve high levels of digital surveillance.

BOX 2. POST-CARBON FUTURES

Urry’s scenarios discuss the global aspects of change, but were developed out of his work commissioned by the government of the United Kingdom on the future of infrastructural projects. New Zealand’s situation is, of course, different, and its uniquely isolated geographical position permits the imagination of a separated future capable of self-sufficiency and cushioned from global disorder (at least in the short term). This “isolationist imaginary” is reflected and challenged in the Sustainable Futures Institute’s (2008) *Four Possible Futures for New*

Zealand in 2058. The report is focused on the response of New Zealand to sustainability in social, cultural, economic, environmental, and political dimensions and raises important questions about New Zealand’s relation to the rest of the world. The four scenarios are as follows.

1. *Power to the People*: New Zealand and the world solve the sustainability challenges of the present.
2. *An Island Paradise—but back to the Jungle*: New Zealand solves the sustainability challenges of the present, but the world does not.
3. *Missed the Global Bus*: New Zealand does not solve the sustainability challenges of the present, but the rest of the world does.
4. *All Over Rover*: New Zealand and the world fail to solve the sustainability challenges of the present.

As an aside, it is worth reflecting on a comment by a reviewer of this article that the pessimistic scenarios are too bleak and alienating for pupils in schools. This is a long-standing issue in futures education (see Hutchinson, 1996). In our experience, teachers often seek to provide sources of hope and optimism, often at the cost of simplifying models of social change and downplaying issues of structural power. The scenarios in Box 2 offer positive as well as negative representations of the future. Students need to be supported in thinking through how preferable futures can be made more possible.

In the development of these scenarios, timelines, and stories for each of the scenarios were developed and refined through a process of workshop collaboration, a process that could be adapted by schools. One important starting point is the question of *When does the future begin?* Today? Tomorrow? Five years? Fifty years? A hundred years? Five hundred years? In practice, many scenarios seem to be based around a 50-year timeframe, perhaps because this is sufficiently near to make us care about what will happen to our children and grandchildren or those who are near to us, but also distant enough to be seen to involve significant and wide-reaching change from the conditions of the present (what futurists call “the 100-year present”). In thinking about the scenario of New Zealand as an isolated island paradise, the scenarios put forward a case for the increasing pressure of global collapse over time and therefore the need to think globally as well as well as nationally.

Professional development

Hicks’ (2012b) experience of more than three decades of work in futures education leads him to conclude that many teachers and educators find it challenging to teach about the future, and this suggests the need for professional development within schools. Some suggestions for this are provided in Boxes 3 and 4. The *future focus* principle can be addressed both within and across subjects. It is therefore up to school leaders,

in consultation and collaboration with teachers, to determine how the curriculum integrates the future focus.

This could involve examining a range of scenarios (such as the ones in Box 2) and their implications in terms of how they relate to sustainability, enterprise, globalisation, and citizenship. (For instance, Urry’s scenarios imply very different models of what it means to be a “citizen”, and are based on different interpretations of “globalisation”.) Whilst these are general scenarios,² they can be used to think about national contexts, such as: *What would these scenarios look like if applied to the New Zealand context?* Box 3 provides some suggestions for professional development activities and questions.

Professional development: Activities and questions

- Introduce examples of built scenarios (e.g. such as Urry’s (2011)). How are these scenarios relevant to the New Zealand context?
- Consider a selection of “drivers of change” and select which ones to work with according to the interests of the group. Examples are climate change, population, and ecosystems (see Sustainable Futures Institute, 2008).
- Randomly introduce two or three wild cards—such as global pandemic, technological breakthrough, terror attack, new forms of identity and collective protest, and the like.
- Each group to build a scenario which addresses the aspects of future focus—for example, enterprise, globalisation, sustainability, citizenship.
- Groups construct a possible timeline with key events to this future in 2063.
- Critique one another’s scenarios. Which scenarios are preferable? Most likely? What changes and developments are needed to help to build that future? What is the relevance of future focus for work in each learning area?
- Plenary activity: How can creativity, adaptability, imagination, and innovation in relation to multiple futures be kept in play within the curriculum? A map of how each learning area contributes to the aspects of future focus could be produced with decisions made about which learning area could lead in which aspect of future focus.

BOX 3. PROFESSIONAL DEVELOPMENT: ACTIVITIES AND QUESTIONS

Developing *future focus* within learning areas

Scenarios can be written in different ways to reflect the concerns of different learning areas. Scenarios can also involve audio, visual, spatial, mathematical, and artistic forms of representation as ways of imagining and making “real”. For example, the art installation *Greenhouse Britain: Losing Ground, Gaining Wisdom* (Harrison & Harrison 2008) presented a room-sized sculpted map of the United Kingdom that altered its filmic borders

according to the flooding effects of different scenarios of sea level rise. This was accompanied by aural commentary in the form of a haunting reporter voiceover (“the news is bad and it’s getting worse”), poster displays and maps of different regional effects, imagined historical accounts of the process, ideas for sustainable farming projects, poems “written by survivors” and scientific information and disaster videos (see <http://greenhousebritain.greenmuseum.org>).

Starting points for learning areas

English: Future scenarios could be used as the basis of creative writing projects, perhaps as part of collaboration with social science. Informed research about society, the economy, and the environment could inform fully fleshed-out future visions which could involve writing in a range of genres. Models of literary work could be sampled from science-fiction writers such as Margaret Atwood, Cormac McCarthy, George Orwell, and John Wyndham. (See, for example, *Teaching Secondary English as if the Planet Matters* (Matthewman, 2011) which includes a chapter on “Future Visions: Merging fact and fiction” that provides further lesson ideas and resources. Work could also focus on the present, as in “What stories can we tell about how we live our lives in relation to our place?”)

Mathematics and Statistics: Data, tables, and graphs can be an important part of the representational resources of future scenarios. What mathematical data could support and clarify written scenarios? How could maths be used to understand the probability of particular futures? What data can be accessed? The book *Teaching Secondary Mathematics as if the Planet Matters* (Coles et al., 2013) provides a range of useful resources and lesson ideas, such as Barwell’s discussion of climate change (Barwell, 2013, pp. 31–49.)

Social Sciences and Science: In geography, scenario building is already part of geographical thinking and the operation of different scales of analysis is strongly highlighted. *Teaching Secondary Geography as if the Planet Matters* (Morgan, 2012) has a range of future-oriented approaches and the scenaric approach is developed from a specifically geographical perspective in Chapter 8, “Climate Change, Mobile Lives and Anthropocene Geographies” (pp. 132–147). Futures thinking is also highly relevant to history, although this may initially appear to be the antithesis of futures-thinking. For instance, how does the history of New Zealand help us to understand how change happens? What were the drivers of change in the past? Research on how we used energy in the past can be brought to life through interviews with the older generation. What are the drivers of change in the present? There is also a growing interest in counterfactual history, which can provide a sense of how the future is contingent and open-ended. In biological and physical sciences a key question might be: How can science help us to understand the changes that are happening in the environment now and how is that likely to impact on the future?

The Arts and Technology: How can we represent different future scenarios to make them more accessible and visible? What role has art played in imagining future worlds? Innovation is crucial to the success of preferable futures. How can innovation and creativity be encouraged and linked to preferable and possible scenarios? Could low-carbon constraints on design push creative and disruptive innovation? See the innovative Open University project *Creative Climate* which invites diary entries in text and video formats to collate creative responses to climate change around the globe (Smith, 2009).

BOX 4. STARTING POINTS FOR LEARNING AREAS

Conclusion

In this article we have argued that it is important for educators to offer young people in New Zealand an analysis which challenges a singular future—that based on a model of carbon-dependent, mobile, and high-consumption lives. A truly educational approach to futures is to explore a wide range of possible, probable, and preferred futures. To this end, we discussed the value of a “scenaric stance” in futures thinking. The main point we would emphasise here is that futures education is not (nor should it be) a “technocratic” exercise that seeks to provide a set of techniques for teaching about the future. Instead, futures education requires important skills of study, analysis, creation, imagination, and interpretation—in short, the skills of curriculum-making. We hope that the ideas and resources provided in this article will be useful for teachers and schools in developing futures education in New Zealand.

Notes

- 1 Keri Facer’s *Learning Futures* is reviewed in this issue of *set*.
- 2 Urry’s scenarios were developed from his work on “Intelligent Infrastructure Futures” commissioned by the United Kingdom’s Office of Science and Technology.

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