

# A FUTURES PERSPECTIVE IN THE SCHOOL CURRICULUM

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## **Abstract**

The future has captivated many people from astrologers to trendsetters. However, it is rarely explicitly studied in the school setting. Whilst businesses frequently develop 5 year plans and government departments look to the immediate future, educational institutions have been slow to adopt forward looking focuses in their curricula, either at the local or at the global level.

Whilst the future cannot be known with any degree of certainty, possible futures can be creatively explored, probable futures can be identified, and attempts made to either avoid or encourage specific scenarios in seeking a preferred future. Two important rationales exist for examining futures. The first is that humanity is poised on a global brink of immense changes in a broad range of social, technological and environmental areas. The second is that educating students about the future will assist them to anticipate, prepare for, and possibly direct, humanity's and their individual futures.

Futures Studies is an established global field of study which is now emerging into greater prominence, and covers a spectrum of practitioners ranging from examiners of current trends to people critically working for the creation of specific futures. It offers techniques, methodologies and concepts which have relevance in the classroom. This paper is an exploration of the need for education to be more futures oriented and of ways in which established futures concepts and methodologies can be incorporated as part of a futures perspective across the curriculum.

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## **Introduction**

This article assumes in part a commitment to the teaching of futures concepts and a futures orientation in the classroom. This is an orientation which is becoming both increasingly important and increasingly accepted by educators. For example, the South Australian Curriculum, Standards and Accountability Framework currently being trialed by the government, Catholic and independent sectors has included 'Futures' as one of its five areas of 'essential learning'. It argues that students should develop, "a sense of optimism about their ability to shape the future (and) the capacity to contribute to and shape possible futures". Whilst this is a particular state vision its development has been informed by national goals in education, and documents such as the DETE Foundations for the Future and the DELORS report.

Whilst many publications support a futures orientation in education, few documents have been produced which provide an overall conceptual framework for learning and developing ideas at the classroom level. This paper will provide a conceptual framework for teaching for the future in the classroom using the concepts, knowledge, methods and tools, and ethics developed from an examination of the spectrum of Futures Studies work.

## **A conceptual framework for teaching futures studies**

### *Possible, Probable and Preferable futures*

Whilst the work of examining future scenarios can be summarised in many ways, a common working framework is to see the work of futurists as examining *possible*, *probable* and *preferable* futures.

Possible futures require a sound examination of current trends as well as the ability to think creatively, and imaginatively. Creativity and imagination are necessary because futures which emphasise differing aspects of continued existence can each be considered possible. Some possible futures will focus on technology, others on social, economic or environmental futures. Some will be dystopian and others utopian. Limits to possible futures are only found in inadequate levels of creativity.

Probable futures, on the other hand, will be fewer in number. They require some sort of logical and possible connection between current conditions and envisaged futures. Whilst a basic assumption of futures work is that the

future is not fixed and that a variety of possible alternatives are possible, some are clearly more feasible than others. Probable futures requires the drawing out of perceived connections between the present and envisaged futures so that an assessment of their likelihood can be made. Imaginative, creative thinking skills are obviously still required, as is an understanding of social change in its various forms (such as the understandings found in History, Geography, or Economics for example), and, of course, environmental and ecological change. Preferable futures requires choosing between alternative futures. In making such choices, students or decision-makers need a clear understanding of the criteria used to differentiate between alternative futures. Criteria, however, are usually based on values and values systems. Ethics involves the study of choosing between competing values. Consequently, ethical positions need to be clearly understood as part of any study of preferable futures.

*Pop, Problem, Critical and Epistemological futures*

Slaughter has conceptualised the futures field with his layers of ‘pop-centred futures studies’, ‘problem centred futures studies’, ‘critical futures studies’, and ‘epistemological futures studies’ (Slaughter, 1993, 1996a). These layered levels of futures work were identified in his study of the work of a range of futurists. Examples of futurists whose reports indicate, according to Slaughter, work primarily at a particular level are shown in Table 1 below.

Table 1 Analyses linked to levels of futures work.

1	Pop futurism:	Naisbitt, Popcorn. Centron and Davies
2	Problem-oriented:	Coates, OECD, Feather, Halal
3	Critical:	Henderson, Meadows
4	Epistemological:	Berman, Wilber, Harman, Ogilvy, Inayatullah

(Slaughter, 1993, p. 842)

The criterion is the depth of analysis in the development of futures images. Pop futurism is seen to be popular, shallow, "technophilic, conservative and diversionary" (1996a, p. 150). Problem centred futures studies operates at a slightly deeper level and addresses particular problems in society. These could include problems such as pollution, population, the environment or sustainability. Unlike the pop futures, it goes beyond extrapolation and prediction to address a problem in its social context. However, it falls short of the critical theory base from which the third level, critical futures studies, operates. Critical futures looks critically at the assumptions and world views underpinning problems facing humanity and the planet. The fourth level of analysis, epistemological analysis, looks at the deeper structures embedded in world views which allow people to know the future in particular ways.

*Predictive, Cultural/Interpretive and Critical futures*

A similar conception of the futures field has been suggested by Inayatullah (1996, 1998a, 1998b) who separates futures work into 3 dimensions on the basis of their epistemologies; Predictive, Cultural/Interpretative, and Critical. Predictive futures views the extension of the present into the future as usually linear and largely deterministic. Reality is seen to exist separately from language and experience. Predictions are usually used for the purpose of strategic advantage.

The second view, the cultural view of the future, views reality as constructed through language and experience. The emphasis on knowing within this framework is through interpreting cultural experiences, rather than predicting. Truth may vary from one context to another, or from one culture to another.

Critical futures studies "seeks to make the units of analysis problematic" (Inayatullah, 1996, p. 193). It tries to identify underlying assumptions and to question these, particularly where they hegemonically embrace power relations of one group over another. Language is seen as constituting reality rather than being symbolic of it.

Inayatullah is delineating three different dimensions in the futures field and it is a convenient way of conceptualising the breadth of the field. However, he also comments that,

Ideally, one should try to use all three types of futures studies. If one makes a population forecast, for example, one should then ask how different civilisations approach the issue of population. Finally, one should deconstruct the idea of population itself, defining it, for example, not only as an ecological problem in the Third World, but also relating it to the First World consumption patterns. Empirical research must then be contextualised within the type of science used within the civilisation from which it emerges. It must then be historically deconstructed to reveal what a particular approach is missing or ignoring.

(Inayatullah, 1996, p. 193)

The dimensions of the futures field presented by these two futurists have in common that they represent orientations within the existing world view or that they are in some way trying to change the world. For example, Slaughter’s pop futures and Inayatullah’s predictive futures operate from within the existing world view. On the other hand futures movements (e.g. environmental, feminist and peace movements), and futurists operating from a critical or epistemological view usually seek to reconceptualise the future, rather than see it as a linear extension of the present.

Problem centred futures may have a foot in both camps. They sometimes examine problems in a culturally interpretative way and sometimes in an extrapolative manner. However, they don't always address the deeper assumptions and issues necessary to bring about change. Inayatullah's cultural/interpretative layer also falls into this category.

*Spectrum of futures orientations*

Consequently, it is proposed that a simple conceptualisation of the futures field which is suitable for secondary students uses the criterion of the world views from which the participant organisations and individual futurists operate. At its simplest level the criterion becomes the degree to which the futures images are extensions of the present, (i.e. *existing contemporary world views* as they are commonly understood), or new directions for society, (i.e. the degree to which they *transform* society). At its more complex level, the criterion can include the distinctions made by Slaughter and Inayatullah, ranging through interpretation, critical futures and epistemological layers. Each of these layers offers differing and complementary aspects of a transforming world view. However, it is the simple conceptualisation, presented in Figure 1, which is proposed as useful and effective in the secondary school context.

**Contemporary world views Transformative world view**

<i>World View Assumptions</i>	Existing world view: modernist economic, rationalist, industrial scientific, western.	Transformative world view: seeking to change the ways in which society views itself.
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*Figure 1 Spectrum of Futures Orientations*

Matathia and Salzman's (1998) book *Next Trends for the Future* is an example of the work of futurists who operate primarily from the left end of the spectrum; from within an existing world view. Their book identifies trends in society from the point of view of the advertising industry to enable those trends to be used in marketing. There is little attempt to analyse the trends in any depth, and they are mostly extrapolative in nature. Naisbitt's (1982) *Megatrends*, Naisbitt and Aburdene's (1990) *Megatrends 2000*, and Aburdene and Naisbitt's (1992) *Megatrends for Women* are further examples of futurists operating within the current paradigm. Much of the futurist writing within the media, particularly the print media, also operates from this orientation.

At the other end of the spectrum is work such as Meadows' et.al. (1992) *Beyond the limits*, which started by examining current trends, looked at their likely end scenarios, evaluated them, and then explored alternative values and actions which would lead to more desirable futures. It has a critical component and makes decisions between alternative futures based on what the authors consider to be preferable. The values underpinning their choices are made explicit. Tough (1998), for example, in discussing our use of resources, and thereby limiting what is available to future generations comments,

we must also leave future generations better off in certain other ways, such as fresh goals and solutions, flourishing institutions, enhanced knowledge and technology, more efficient agriculture, better ways of making global and regional decisions, reduced prejudice and discrimination, and reduced emphasis on the military and armed violence. Just to select a few more examples from the multitude of possibilities, we could aim for a world in which solar power and sustainable organic farming are widespread, population growth has virtually ceased, food and opportunity are much more equally distributed than now, war is considered absolutely unacceptable regardless of the provocation (except in true self defence), and virtually no nuclear or biological weapons remain in existence. (p. 12)

Such a view clearly seeks to transform society, rather than accept current directions.

In the activity of drawing out and critiquing possible futures, the present is often seen in a new light. One of the concerns of any futures work is that possible futures are viewed through current mindsets, assumptions and values, usually at both the personal and at the cultural levels. Current mindsets have led humanity to the brink of environmental and ecological disaster. It is no longer appropriate to simply reproduce these values, most of which have their origins in the industrial, scientific and economic growth of Western society of the past few hundred years. Consequently, many futurists are wanting to highlight and debate the assumptions behind, and the dominance and limiting nature of, our current (Western) thinking (Beare & Slaughter, 1993; Inayatullah, 1996a, 1998c; Slaughter, 1995a, 1996a, 1996b). Criticisms of the dominance of Western thinking fall into three main areas. Firstly, a number of writers are concerned about the colonising and imperial affects of the Western focus of futures (Masini, 1996; Sardar, 1992, 1996; Sogolo, 1996; Wilber, 1996). It is often seen to ignore other cultures and discount the significance of their input into world affairs, either now or in the future. The second area of concern is the dominance of the industrial nature of the Western view; the scientific, rationalist world view (Sardar, 1992, 1996; Slaughter, 1995a, 1996a; Sogolo, 1996; Wilber, 1996). A third group of writers take up the gender bias in the male dominance of the Western world view, seeking feminine input into futures discourse (Jarva, 1996; Milojevic, 1996, 1998, Wertheim, 1997).

Within the classroom the same critique and debate needs to occur. Students are presented with futures scenarios developed by other people such as those in the media, films, novels, artwork, or scientific, government, and economic reports. Alternatively, they may develop their own futures scenarios at any or all of the levels of possible, probable or preferable futures.

However, the concept of a world view is not easy for secondary students to appreciate. It requires careful development in the classroom. It is hoped that the layers of depth provided in this paper will develop a conceptual framework for aiding teachers in their classroom work in this area.

Examination of futures for humanity and for our physical and biological environment can be conceptualised on a continuum ranging from extrapolative to transformative futures. The different ends of the spectrum reflect differing assumptions and values, differing forms of knowledge, differing tool and methodologies, and differing ethical positions. This paper will explore this framework, addressing each of the layers in turn.

### Ways of Knowing

The future cannot be known with certainty. Consequently, students need to be aware of the ways in which differing futures work uses the concept of knowledge. It is a contention of this paper that futures works located at differing positions on the spectrum above usually incorporate different ways of knowing.

Figure 2 shows the three types of knowledge reviewed in this paper and their relative positions on the spectrum of futures work.

	Contemporary world views	Transformative world view
<i>World View Assumptions</i>	Existing world view: modernist economic, rationalist, industrial scientific, western.	Transformative world view: seeking to change the ways in which society views itself.
<i>Ways of Knowing</i>	<p><b>Surface knowledge</b> Reductionist, empirical.</p> <p>Meaning lies in the object Correspondence truth</p>	<p><b>Interpretive knowledge</b> Cultural, multiple interpretations.</p> <p>Meaning as personal &amp; cultural interpretation Coherence truth</p>
		<p><b>Critical knowledge</b> Critical, holistic, intuitive, imaginative, envisaging, spiritual, inclusive.</p> <p>Meaning in relationships Temporal truth</p>

Figure 2. The futures field showing ways of knowing

#### Surface level knowledge

This is the level of knowledge with which students are most familiar. It is primarily descriptive knowledge; it is descriptive of the observable, evidential phenomena. It may take the form of a series of factual, or allegedly factual, statements. Meaning, at this level of knowledge, lies in the 'facts' or phenomena themselves. Reality is assumed to have an independent fixed existence which can be described.

In History classes in schools it would be typified by the teacher who taught 'names and dates' history. In the Sciences it would be represented by the memorising of equations and formulae, whilst in the languages, frequent translations and vocab tests would typify this level of knowledge. This form of education offers a fixed description of reality and imparts to students the notion that the meaning of the knowledge is for passing tests. Fortunately, current educational theory has moved beyond this level of teaching, although elements can still be observed in text books and schools.

Hutchinson (1996), in his review of school textbooks, found that texts were selective in the traditions of knowledge presented. For example, the moral dimensions of the nuclear industry are frequently ignored in physics and chemistry texts, whilst the same occurs for the implications of the human genome project and technology based medical advances in biology texts. He comments that, "The strength of selective traditions on war and conflict resolution, gender relations, humanity's relation to other species, and science, technology and human development are much in evidence" (p. 159). He found that economics books do not question current assumptions about the use of the world's resources, and ignore ethical concerns of intergenerational ethics. He also found that students were unaware of the selective nature of their texts with 40% agreement and only 20% disagreement with the statement that, "generally school texts are very objective sources of facts about the world, especially in science and social science" (p. 169). A second observation by Hutchinson was that, "Where (textbooks) contain diagnosis of particular problems of humanity identified as important in UN/INGO discourses, they rarely combine the language of critique with the language of active hope" (p. 160). The selectivity within texts and the failure of schools and texts to address

deeper issues of underlying assumptions, causation, and morality, and to develop critical discourses means that the knowledge gained in education is often at the surface level.

Surface level knowledge also is evident in presentations by the media in news stories and in advertising. Whether it be population statistics, stories on polluted waterways, or stories or advertisements about the latest technologies, the level of knowledge presented in much of the media, particularly the commercial media, is usually at the descriptive, surface level. Furthermore, the television media frequently present their information in disconnected, edited segments of a few seconds duration in order to maintain viewer interest. Meaning usually lies in the images presented, rather than in any implications which may flow from them. Consequently, the knowledge gained through the media is often divorced from social action.

Missing from surface level knowledge is the deeper analysis of causation, the recognition of various interpretations of 'reality', the linking of meaning with people and their vicarious and lived experiences, and the epistemological questions of what aspects of our reality our culture makes problematic.

In the context of the futures field, surface level knowledge is called 'Pop Futures' by Slaughter and 'Litany' by Inayatullah. Futures work which grows from the existing world view frequently uses surface level knowledge. In operating from existing world views, futurists usually accept the prevailing conditions and ideologies and focus on the description of the present, of trends, and of the future, assuming an independent fixed reality which their work describes.

Bloom's taxonomy of cognitive skills places description as the base level of thinking from which the higher levels of application, analysis, synthesis and evaluation develop. It is not a level to be discarded, rather it is a base level which is transcended by other levels of thinking which include it, but expand beyond it. Similarly, surface knowledge is important in Futures Studies, but it can be deepened with other ways of knowing.

#### *Interpretive knowledge*

Interpretive knowledge recognises that meaning lies with individuals and with communities of people as they 'know' their lived experiences. It suggests that there is no single fixed describable reality, rather individuals and cultural communities will interpret experiences in different ways. Reception Theory (Ogilvy 1996) is important, as are the multiple interpretations evident in the social sciences. Truth is seen more in terms of coherence than correspondence.

In educational terms students are familiar with this form of knowledge. However, its more open-ended nature and the absence of a clear right or wrong answer makes it more difficult to grasp. Interpretive knowledge takes surface knowledge and locates it within a community or a culture. It recognises that knowing ideas and phenomena involves linking them with existing schema, and that different communities and different cultures operate from different schema.

A ready example which is common to most school situations is the study of other religions. Knowledge about religious worship, ritual, symbols and beliefs often goes beyond the surface knowledge and is linked to specific cultures. Students are expected to appreciate the ways in which other cultures may place different meanings on particular objects or events: the land for Aborigines; cows for Hindus; various animals to Buddhists; the cross to Christians. What may have meaning as a food source in one culture may have sacred meaning in another.

Another example might be the differing meanings and interpretations given to the weather phenomenon known as El Nino. To the people on the west coast of South America it may mean increased rainfall. To the people of New Guinea it may mean the loss of exports of cocoa beans, and hence a threat to their livelihood. To Australians it may mean drought and bushfires. To the New York investor it may mean a rearrangement of the share portfolio to take advantage of changing investment opportunities.

The interpretive level of knowledge is important in studying possible futures in schools. For example, world population can be described at the surface level of knowledge through the use of extrapolated data and trend analysis of populations in various countries around the world. However, at the interpretive level, it is important to recognise that population growth would carry different meanings, for example, in Roman Catholic and non Roman Catholic cultures. The same could be said for associated concepts such as the family unit, and the meaning of children within the family.

Interpretive knowledge involves more than an acceptance of the current world view which is evident in the development of surface level knowledge. It involves the recognition, and acceptance as legitimate, of other interpretations, and of other perspectives on the future. It recognises multiple interpretations of reality.

For example, in addressing future societies in religion classes this perspective would encourage an appreciation and understanding of the futures envisaged by different religious groups, as interpreted from their cultural perspective. In addressing particular issues, such as pollution, it would necessitate appreciating the various interpretations of contributing factors such as economic growth, job creation, industry, and the views of people living in the affected areas.

Slaughter's 'problem-centred futures' and Inayatullah's 'cultural/interpretive futures' frequently are this form of knowledge. In addressing a specific problem, a community, or individuals, may focus on solutions for the future which lie within its cultural interpretation of the problem. In addressing pollution of a river system for example, technophilic communities may focus on technological solutions whilst an agricultural community may focus on chemical uses and discharge, perhaps looking for an organic solution. Missing is the disinterest required for an analysis of the issues beyond cultural interpretation. Truth is determined by the coherence within the developed knowledge and the evidence for it.

#### *Critical knowledge*

One of the limitations of the interpretive level of knowledge is that, while it includes the important dimension of meaning, it does not provide clear criteria for decision making beyond culturally accepted values and understandings. The critical approach to Futures Studies recognises this and encourages students to examine how values are framed and maintained, how power relationships are framed and maintained, and how, together, this makes cultures predisposed to particular futures.

The binaries of poststructuralism (Western/non Western, men/women, whites/ blacks (or coloured), abled/disabled, good/bad, object/subject, mind/body) provide ample opportunity for students to examine, analyse, and interpret competing views of the present, and of future possibilities. The critical view goes deeper than the interpretive level and asks students to analyse the structures in societies and cultures which privilege one group of people over another, and which frequently define an 'other', not by difference, but by the ways in which its members are inferior or lack what the main group possesses. It also provides a mechanism for students to locate their own views within their broader sweep of knowledge. Postcolonial emphases on indigenous and colonised people, race, ethnicity, gender and the knowledge of colonised people also are important and complementary aspects of the critical knowledge of Futures Studies.

For example, non western economies are frequently 'othered' in schools in comparison with western economies. History is infamous for its 'othering' of women, racial minorities and the working class. Science and technology frequently marginalise spirituality, community and the environment. Western (particularly male) values, practices and understandings are frequently seen as the benchmark in learning about other cultures, rather than a perspective to be considered with other cultural perspectives.

One of the aspects of addressing what has been marginalised involves recognising value in things or practices which have often been overlooked. Slaughter, for example, points out that one aspect of the critical perspective in critiquing the modern world view is the reclaiming of the sacredness of nature. Critical knowledge goes beyond interpretation to examine meaning and the deep structures which form or maintain knowledge. Students will find such an examination difficult. However, gently guided, they should be able to appreciate the origins of values in different cultures and the binaries which serve to maintain them. An extension is to see the differences in origins of the possible, probable and preferred futures of 'other' cultures and to recognise the ways in which the term 'other' is problematic.

#### **Futures tools and methods**

Futures Studies has its origins in the strategic planning of corporations and governments. Consequently, many of the methods which futurists use are not easily amenable to classroom use. They require larger timeframes and greater resources than are available in schools. However, modifications of them are useful in some circumstances. Tools, on the other hand, are ways of developing understandings of aspects of futures studies in the shorter classroom timeframe and have more direct relevance.

An overarching methodology is the development of futures scenarios. Mention has already been made of the levels of possible, probable and preferable scenarios. A scenario is simply an envisaged situation in the future. Coates (1996) cites Warfield as defining scenarios as;

a narrative description of a possible state of affairs or development over time. It can be very useful to communicate speculative thoughts about future developments, to elicit discussion and feedback, and to stimulate the imagination. Scenarios are generally based on quantitative expert information, but may include qualitative information as well. (p. 67)

To be meaningful the future 'possible state of affairs' needs to have a conceivable link with the context of the present time and the system which is being considered, although this link does not have to have a high probability of eventuating. In describing scenarios, H. de Jouvenel (1996) comments that they consist of three elements;

- 1 a representation of the phenomenon and the dynamics of the system under study;
- 2 pathways constructed by advancing the system along a given time scale in the knowledge that, as it advances, questions will arise...; and
- 3 the final images obtained of various periods at the end of the processes referred to above. (p. 11)

H. de Jouvenel (1996) and Coates (1996) delineate between two fundamental types of scenarios; exploratory and strategic (also called 'normative') scenarios. Both forms of scenarios involve envisaging a particular future. However, the thinking in exploratory scenarios moves in direction from the present to futures which could conceivably evolve from the present. On the other hand, the thinking in strategic or normative scenarios moves from an envisaged desirable future back to the present to determine what current action could lead to the envisaged scenario.

The exploratory study looks into the future from where we are now. What could happen in terms of the forces at work in the system under consideration? In contrast, the normative study asks what would have to occur were we to try and achieve some specific goal. (Coates, p. 58)

Exploratory and strategic or normative scenarios occupy the two ends of the spectrum of the Futures Field as shown in Figure 3. Exploratory scenarios usually explore from the current world view whereas normative scenarios are more commonly used to explore a range of possible futures which are not merely anticipated extrapolations from the present.

Figure 3 presents some of the methodologies used by futurists in the generation of extrapolative and normative scenarios.

### Contemporary world views Transformative world view

<i>World View Assumptions</i>	Existing world view: modernist economic, rationalist, industrial scientific, western.	Transformative world view: seeking to change the ways in which society views itself.
<i>Ways of Knowing</i>	<b>Surface knowledge</b> Reductionist, empirical.  Meaning lies in the object Correspondence truth	<b>Interpretive knowledge</b> Cultural, multiple interpretations.  Meaning as personal & cultural interpretation Coherence truth
<i>Futures Methods</i>	<b>Extrapolative scenarios</b> Trend analysis Time series analysis Prediction of one variable by another Simulation, computer modelling, and gaming Monitoring Content analysis	<b>Strategic or normative scenarios</b> Emerging issues analysis Survey research techniques Simulation, computer modelling, and gaming Participatory futures practice Cross impact matrix
		<b>Critical knowledge</b> Critical, holistic, intuitive, imaginative, envisaging, spiritual, inclusive.  Meaning in relationships Temporal truth

Figure 3. The futures field showing futures methods and scenarios

Scenarios have obvious relevance for educators in the classroom. They provide an excellent framework for exploring 'continuation of the present' futures as well as encouraging students to think creatively, and perhaps strategically, about other possibilities. Scenarios can be used effectively in most subject areas, although not always in the same way. Scenarios were referred to above as an umbrella or overarching methodology because they are frequently accompanied by, and perhaps rely on, other data gathering methodologies. The most useful of these in the classroom setting are shown in Figure 3. It is important to note that although the methodologies are listed in two columns, they can often be used in differing ways which would place them at other points on the spectrum. The placing of them in particular columns reflects the main emphases and the particular strengths of each methodology. The list should not be seen as definitive nor exhaustive.

Futures methodologies have particular use where students are able to engage in futures work over an extended period of time. Many schools offer independent study electives, gifted and talented programs, and interdisciplinary units. International Baccalaureate schools offer an extended research essay as part of the Diploma and an extended interdisciplinary project as part of the Middle Years Program. Each of these options provides an excellent opportunity for students to use futures methodologies.

Futures tools, however, can be incorporated into much smaller units of work. Slaughter (1995b) provides an excellent presentation of these in his book *Futures tools and techniques*. Many of the tools and techniques are not new but have been adapted or developed with a futures concepts focus. For example, timelines have been developed to emphasise Boulding's notion of the 200 year present which extends from great grandparents to great grandchildren. This personalises futures for students and encourages them to think beyond the momentary present.

Futures wheels and concept maps encourage students to develop possible futures and to see connections between ideas.

Tools and techniques for examining futures can frequently be used in different ways at points along the spectrum outlined in Figure 1. Timelines, for example, can be developed as extrapolation or as new possibilities. Consequently, futures tools need to be used thoughtfully and tailored to particular purposes. When used in a transformative way they produce a number of possible futures, usually highlighting in the process assumptions which underpin societal and environmental change. This provides an excellent opportunity for students to debate alternative values positions and the likely outcomes of adopting particular values or policies. It opens the door for transformative futures to emerge which will have as their goal the improvement of life for future generations. It provides a futures perspective which can balance the consideration for current generations in decision making.

### **Ethics**

All futures work is values driven. However, the end of the Future Studies spectrum which operates from a transformative perspective does at least attempt to place its values up front. They are open to scrutiny. For many critical futurists, these values frequently centre around a consideration of the rights and quality of life of future generations, not necessarily at the expense of current generations but considered alongside them. These values also centre around voices which are frequently drowned out in the course of normal world events; they are unheard in the din of the modern call for growth and progress. These voices often come from women, the disabled, non-westerners, environmentalists, and peacemakers who want the future to be different from the past. The fact that their values are evident in their work is not usually contested. Dror (1996) has noted the inevitability of values dependency and argues that this must lead to at least values transparency.

But discussions of possible and likely futures, however detached from explicit desires and dislikes, are also (often unconsciously) conditioned by the values of the author. The values dependence of Futures Studies is both legitimate and largely unavoidable. Therefore explication of value positions, or at least value transparency permitting the reader to identify underlying values, is a minimum requirement. But often more is needed such as improved moral reasoning and values discourse. (p. 90)

He also noted the need for improved moral reasoning skills to deal with values discussions. Nearly every school has in its mission statement a concern to educate and develop the 'whole person'. This means that educators are concerned with more than academic knowledge. They also are concerned with moral and spiritual development, and with contextual reasoning and thinking skills. Such broader concerns can of course be overlooked in the academic focus of preparing students for exams and university entry but this may short change students in preparing them to take their place in the adult world.

There are three main positions which are possible for educators to adopt. Firstly, teachers can choose to ignore the broader mission statement of the roles of schools. They can treat the examination of possible and probable futures as an academic exercise, perhaps in creative thinking or in extrapolation. They are unlikely to use methods which require a critical examination of envisaged futures. This style of futures examination resembles the pop futures category outlined by Slaughter earlier. It is a surface level treatment of futures.

A second position is to examine futures and make choices between them on the basis of existing world values. This corresponds to Slaughter's problem-centred futures or Inayatullah's interpretive/cultural futures. Issues are examined, perhaps even holistically, but are interpreted within the context of current cultural norms. Values positions, whether they are secular or religious in origin, are left unquestioned. The broader ecological paradigm of situating the futures within wider cultural contexts is left untouched.

Thirdly, futures can be located within a critical framework in the classroom which examines the assumptions and values which underpin different possible futures. Winners and losers in various scenarios can be examined. The criteria for determining winners and losers can be made problematic. Educators who take their role seriously cannot easily separate discussions of possible, probable and preferable futures from a discussion of ethics and criteria for choosing between alternative futures. These three possible approaches are shown in Figure 4 which also illustrates their positions on the spectrum of futures work.

Modern industrialism is built on the utilitarian view of nature. The agricultural revolution in Britain of the 1700s and the subsequent industrial revolution saw improved living standards, linked with a presumed increase in human happiness, as a worthy goal. The revolutions also saw natural resources as an unlimited supply of materials for this end. With the by-products of industrialisation such as CFCs and PCBs accumulating in the environment and many of the resources such as fish stocks nearing depletion the utilitarian view is beginning to be questioned. Slaughter (1993) commented that;

While industrialism was built on a utilitarian view of nature, this view has now ceased to be credible. Instead we are seeing the rise of a stewardship ethic and a view of human beings as part of a wider biotic community. (p. 846)



### Contemporary world views Transformative world view

<i>World View Assumptions</i>	Existing world view: modernist economic, rationalist, industrial scientific, western.	Transformative world view: seeking to change the ways in which society views itself.	
<i>Values Approaches in Schools</i>	<b>Ignore broader mission</b> Values not identified, academic focus	<b>Accept cultural values</b> Values identified and accepted	<b>Values transparency</b> Values identified and critiqued in a broader context

Figure 4 Values approaches to futures.

Much of the traditional writings on ethics have focused on individuals, their rights, and their relationship to society. The debate between duty ethicists and consequentialists shows an underlying acceptance of the linear position that intentions lead to actions which lead to consequences. Such a position is no longer tenable.

Many writers critique a linear view of cause and effect events. Chaos and systems theory are replacing older understandings of the relationship between events. Historians talk of a 'web of causation', biologists talk of a 'web of life', scientists talk of 'the new paradigm' (holistic rather than mechanical) and organisations talk of 'systems theory' denoting the interconnectedness between ideas or events. Discussions of ethics for the future must also be located within a broader conceptual framework than the traditional linear cause effect model.

The anthropocentrism of traditional ethics needs to be replaced by a more biocentric ethic, and individual ethics needs to be replaced by more holistic or ecological ethics. A more holistic approach would focus on a much larger picture than the individualised approach, perhaps viewing the broader specific context in which the situation is located. Situational ethics, popularised in the 1980s, might belong under this banner. Ethical issues within industry where workers are replaced by technology, in medicine where biogenetic engineering can replace body parts, or perhaps in agriculture where geneticists can create new crops through genetic manipulation, may be further examples of a more holistic approach to ethics.

An ecological approach takes an even broader perspective and locates the holistic entity within the broader relational environment. Whilst the holistic approach emphasises the relationships between internal parts, the ecological approach also emphasises the relationships between holistic entities. The move from traditional approaches to ethics is a move from reductionist individualistic ethics to broader holistic and ecological ethics which focus on relationships. Capra (1997) commented that;

Ultimately - as quantum physics showed so dramatically - there are no parts at all. What we call a part is merely a pattern in an inseparable web of relationships. Therefore, the shift from the parts to the whole can also be seen as a shift from objects to relationships. In a sense this is a figure/ground shift. (p. 37)

Stewardship ethics, intergenerational ethics and environmental ethics each contribute new emphases in this area. Environmental ethicists, for example, represent a spectrum of views which each incorporate valuing life for its own sake. At one end are the deep ecologists who accord all sentient life forms, or even all life forms, with rights and deny the moral superiority of the human race. For example, Lovelock's Gaia hypothesis promotes an understanding of the interconnectedness of life to the extent of seeing the planet as a living organism. The other end of the spectrum is occupied by ethicists who accept the primacy of human survival but also recognise intrinsic, as opposed to utilitarian, value in non human life. Such a position favours the human species in ethical dilemmas but might highlight and contrast the 'needs' of animals in terms of their habitat, with human 'wants' in terms of forest timber from cleared scrub land. Capra (1997), in contrasting the two ends of the environmental spectrum, observed that,

Shallow ecology is anthropocentric, or human-centred. It views humans as above or outside of nature, as the source of all value, and ascribes only instrumental value, or 'use', value to nature. Deep ecology does not separate human beings - or anything else - from the natural environment. ... Deep ecology recognises the intrinsic value of all living beings and views humans as just one particular strand in the web of life.

Ultimately, deep ecological awareness is spiritual or religious awareness. (p. 7)

Some principles which are useful in the classroom situation for students to develop a framework by which they can make decisions about preferable futures are outlined below. Firstly, intentions are important. As humanity considers the question of *What ought to be* there is general agreement in most cultures, at least at the philosophical level, that humanity's intentions ought to be to preserve human and planetary existence, and to preserve a high quality of life for the planet's inhabitants.

Secondly, any ethical framework cannot be entirely anthropocentric. Even at the utilitarian survival level consideration must be given to the thriving of non human life in order for humanity to continue to exist.

Thirdly, any ethic for the future must consider consequences. It is not enough to act with good intentions if by-products of that action militate against a high quality of life for people in the future. Consequences, of course, cannot be known in advance with certainty. However, any ethical framework should involve identifying likely

consequences and working to minimise ill effects and maximise good effects. Failure to do this would be to fail to fully consider and implement *what ought to be*.

**Contemporary world views Transformative world view**

<i>World View Assumptions</i>	Existing world view: modernist economic, rationalist, industrial scientific, western.	Transformative world view: seeking to change the ways in which society views itself.
<i>Ways of Knowing</i>	<b>Surface knowledge</b> Reductionist, empirical.  Meaning lies in the object Correspondence truth	<b>Interpretive knowledge</b> Cultural, multiple interpretations.  Meaning as personal & cultural interpretation Coherence truth
<i>Futures Methods</i>	<b>Extrapolative scenarios</b> Trend analysis Time series analysis Prediction of one variable by another Simulation, computer modelling, and gaming Monitoring Content analysis	<b>Strategic or normative scenarios</b> Emerging issues analysis Survey research techniques Simulation, computer modelling, and gaming Participatory futures practice Cross impact matrix
<i>Ethics</i>	<b>Individualistic</b> Duty and consequential ethics Anthropocentric intergenerational, environmental, Temporal restrictions	<b>Holistic and Ecological</b> Biocentric; stewardship, intergenerational, environmental, Inclusive, feminist, ethnic, disabled Temporally unrestricted

Figure 5 Conceptual Overview of the Futures Field

Finally, students can identify criteria and indicators of ‘quality of life’ or ‘ill’ and ‘good’ effects. Ethics involves making choices between competing values. Students should examine what is involved in measuring quality of life. Whilst universal absolutist answers are not likely to be found, students should examine values which lead to a basic quality of life for all people. These should include more than Gross National Product statistics. Ethics should involve addressing a range of values in the spiritual domain, in the areas of personal freedom and dignity, in education and in health and not just in the more traditionally accepted economic terms.

The final layers outlining ethical positions on the conceptualisation of futures work is shown in Figure 5.

**Conclusion**

The conceptualisation presented here provides a framework for the development of futures work in classrooms. Students should be aware of the orientation of futures ideas which they examine. Whilst continuation of the past is sometimes important, it should not happen automatically, particularly when the values of the past have brought humanity and our biospheric environment to the edge of disaster.

Students should be encouraged to examine and develop ideas about the future and an awareness of the values, knowledge forms, methods, tools and ethics which inform their understanding. This is more likely to lead to a forward mindset and a critical and creative understanding which can take humanity forward to the development of a wise culture (Slaughter, 1995b) than automatic acceptance of extrapolated futures.

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