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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. While businesses frequently develop five-year plans and government departments look to the immediate future, educational institutions have been slow to adopt forward-looking foci in their curricula. Futures studies is an established global field of study that is now gaining greater prominence and covers a spectrum of practices, ranging from examination of current trends to critically working for the creation of specific futures. It offers techniques, methodologies and concepts that 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 curriculums.

Introduction

In part, this article assumes a commitment to the teaching of futures concepts and a futures orientation in the classroom. This orientation is becoming increasingly important and accepted by educators. For example, the South Australian Curriculum, Standards and Accountability Framework currently being implemented by the South Australian Government, Catholic and Independent School 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' (Department of Education, Training and Employment, 2000, p. 7) Whilst this is a particular state vision, its development has been informed by national goals in Australian education and documents such as the the Delors Report (Delors, 1998).

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 examines three conceptual frameworks for teaching a futures perspective in the classroom, then

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proposes a model using the concepts, knowledge, methods, tools and ethics developed from an examination of the spectrum of work in futures studies.

Conceptual Frameworks for Teaching Futures Studies

Possible, Probable and Preferable Futures

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

Consideration of possible futures requires 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 society, economy or environment. Some will be dystopian and others utopian.

Probable futures, on the other hand, will be fewer in number. Their conception requires some sort of logical and possible connection between current conditions and envisaged futures. Whilst a basic assumption of this work is that the future is not fixed and that a variety of possible alternatives are possible, some futures are clearly more feasible than others. Probable futures require 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 environmental and ecological change.

Preferable futures require 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 value 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’, ‘problem-centred’, ‘critical’ and ‘epistemological’ futures studies (Slaughter, 1993, 1996a), identified in his study of the work of a range of futurists. Table I lists examples of futurists whose reports indicate work primarily at a particular level.

Table I: Analyses linked to levels of futures work

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

(Slaughter, 1993, p. 842)

The criterion separating the layers is the depth of analysis in the development of futures images. Pop futurism is seen to be popular, shallow, 'technophilic, conservative and diversionary' (Slaughter, 1996a, p. 150). Problem-centred futures studies operates at a slightly deeper level and addresses particular problems in society, such as pollution or sustainability. Unlike pop futurism, 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. The study of critical futures exposes and examines assumptions and worldviews underpinning problems facing humanity and the planet. The fourth level of analysis, epistemological analysis, looks at the deeper structures embedded in worldviews that 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 three dimensions on the basis of their epistemologies; predictive, cultural/interpretative and critical. Predictive futures view 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, the cultural view of the future, sees reality as constructed through language and experience. Within this framework, the emphasis on knowing 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.

Inayatullah has delineated three different dimensions in the futures field - a convenient way of conceptualising its breadth. He also comments that

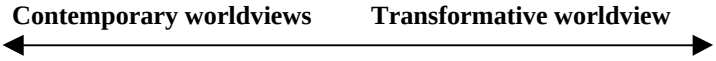
> Ideally, one should try to use all three types of futures studies. If one makes a population forecast, for example, one should then ask how different civilisations approach the issue of population. Finally, one should deconstruct the idea of

> 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 common dimensions of the futures field presented by these two futurists are a representation of orientations within contemporary worldviews and some attempt to change the world. For example, Slaughter's pop futures and Inayatullah's predictive futures operate from within contemporary worldviews. On the other hand, futures movements (eg. 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 do not 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

It is consequently proposed that a simple conceptualisation of the futures field - one that is suitable for secondary students - uses the criterion of the worldviews from which 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 (ie. *existing contemporary world views* as they are commonly understood), or are new directions for society (ie. the degree to which they *transform* society). At a more complex level, criteria can include the distinctions made by Slaughter and Inayatullah, which range through interpretation, critical futures and epistemological layers. Each of these layers offers differing and complementary aspects of a transforming worldview. However, the simple conceptualisation, presented in Figure 1, is proposed as useful and effective in the secondary school context.



Worldview assumptions	modernist, economic, rationalist, industrial, scientific, western	seeks to change the ways in which society views itself

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 worldview. 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 current

paradigms. Much of the futurist writing within the media, particularly the print media, also operates from this orientation.

Work such as that of *Beyond the Limits* (Meadows, Meadows and Randers, 1992) is at the other end of the spectrum. This starts with an examination of current trends, evaluates their likely end-scenarios, and then explores alternative values and actions which could lead to more desirable futures. The work has a critical component and includes decisions between alternative futures based on what the authors consider to be preferable. The values underpinning their choices are made explicit. For example, in discussing our use of resources, and thereby limiting what is available to future generations, Tough (1998, p. 12) 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.

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

By 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 only through current mindsets, assumptions and values, usually at both the personal and 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 want to highlight and debate the assumptions behind current (Western) thinking and its dominance and limiting nature (Beare & Slaughter, 1993; Inayatullah, 1996, 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 effects of the Western focus of futures (Masini, 1996; Sardar, 1992, 1996; Sogolo, 1996; Wilber, 1996). This focus 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 worldview (Sardar, 1992, 1996; Slaughter, 1995a, 1996a; Sogolo, 1996; Wilber, 1996). A third group of writers identifies the gender bias inherent in the dominant male, Western worldview, and advocates more female input into futures discourse (Jarva, 1996; Milojevic, 1996, 1998; Wertheim, 1997).

Within the classroom, the same critique and debate needs to occur. Students are frequently presented with futures scenarios developed by other people, such as

those in the media, films, novels and artwork, or scientific, government and economic reports. These scenarios need to be critiqued and debated. Alternatively, a useful exercise is for students to develop their own futures scenarios at any or each of the layers of possible, probable or preferable futures.

However, the concept of a worldview is not easy for secondary students to appreciate and requires careful development in the classroom. It is hoped that the layers of depth provided in this paper will develop a conceptual framework to aid teachers in such classroom work.

Examination of futures for humanity and for the 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, values, forms of knowledge, tools and methodologies, and differing ethical positions. This paper explores this framework, addressing each of the layers in turn.

Ways of Knowing the Future

Obviously, 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 work located at differing positions on the above spectrum usually incorporate different ways of knowing, each with its own test for 'truth'.

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

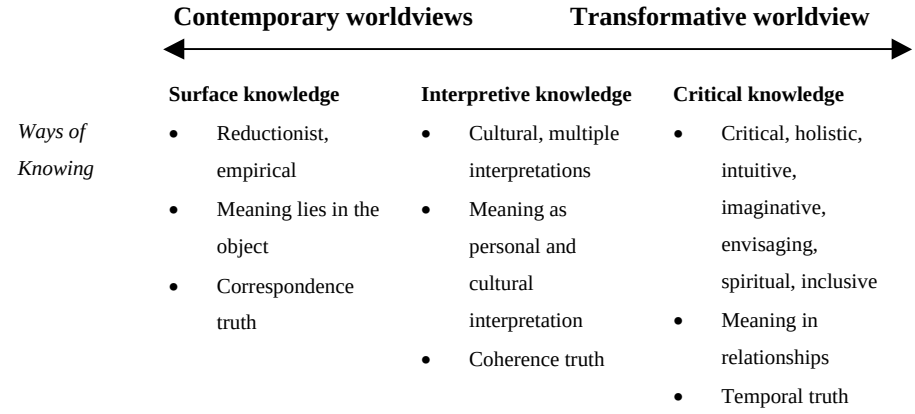


Figure 2: The futures field - ways of knowing

Surface-level Knowledge

This is the level of knowledge with which students are most familiar. It is primarily descriptive knowledge of observable, evidential phenomena. It may take the form of a series of factual, or allegedly factual, statements. At this level of knowledge,

meaning lies in the 'facts' or phenomena themselves. Reality is assumed to have an independent, fixed existence, which can be described.

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

In a review of school textbooks, Hutchinson (1996) found that texts are 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). Hutchinson noted 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 determined that students are unaware of the selective nature of their texts; of those he surveyed, 40% agreed and only 20% disagreed with the statement that 'generally school texts are very objective sources of facts about the world, especially in science and social science' (p. 169). Hutchinson also observed that: 'Where (textbooks) contain diagnosis of particular problems of humanity… they rarely combine the language of critique with the language of active hope' (1996, p. 160). The selectivity within texts, the failure of schools and texts to address deeper issues of underlying assumptions, causation and morality, and their failure to develop critical discourses suggest that knowledge gained in education is often at the surface level.

Surface-level knowledge is also evident in media presentations such as news stories and advertising. Whether in population statistics, stories on polluted waterways, or advertisements about the latest technologies, the level of knowledge presented in much of the media, particularly commercial, is usually at the descriptive, surface level. Furthermore, the television media frequently present 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 any implications from them. Consequently, the knowledge gained through the media is often divorced from social action.

Surface-level knowledge lacks: the deeper analysis of causation and 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 reality are made problematic by our culture.

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 contemporary worldviews frequently uses this knowledge level. In operating from contemporary worldviews, futurists usually implicitly accept prevailing conditions and ideologies, and focus on description of trends, the present and the future, thereby assuming the independent, fixed reality described in their work.

Bloom’s (1976) taxonomy of cognitive skills places description at 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 transcended by other levels of thinking which include it, but expand beyond it. While surface knowledge, which is primarily descriptive rather than analytical, is important in futures studies, it needs to be deepened with other ways of knowing.

Interpretive Knowledge

Interpretive knowledge recognises that meaning is constructed by individuals and communities of people as they ‘know’ their lived experiences. It suggests that there is no single fixed, describable reality; 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 open-ended nature and the absence of a clear right or wrong answer make it more difficult to grasp. Interpretive knowledge takes surface knowledge and locates it within a community or culture. It recognises that knowing ideas and phenomena involves linking them with existing schema, and that different communities and cultures operate from different schema.

The study of other religions is a ready example common to most school situations. 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 for Buddhists; the cross for Christians. 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. It might entail drought and bushfires for Australians. 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 analysis of population trends in

various countries around the world. However, at the interpretive level, it is important to recognise that population growth carries different meanings, for example, in Roman Catholic and non-Roman Catholic cultures. The same can 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 worldview evident in the development of surface-level knowledge. It involves the recognition, and acceptance as legitimate, of other interpretations and future perspectives. 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 perspectives. In addressing particular issues, such as pollution, it necessitates appreciating the various interpretations of contributing factors such as economic growth, job creation and industry, and the views of people living in the affected areas.

This form of knowledge is frequently evident in Slaughter's 'problem-centred' and Inayatullah's 'cultural/interpretive' futures. In addressing a specific problem, communities or individuals may focus on solutions for the future that lie within their cultural interpretations of the problem. For example, in addressing the pollution of a river system, technophilic communities may focus on technological solutions, while an agricultural community might focus on chemical uses and discharge, perhaps looking for an organic solution. The disinterest required for an analysis of the issues beyond cultural interpretation is missing. 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 making decisions beyond culturally accepted values and understandings. The critical approach to futures studies recognises this and encourages students to examine how values and power relationships are framed and maintained, together making cultures predisposed to particular futures.

Consideration of poststructuralist binaries (Western/non-Western, men/women, whites/blacks (or coloureds), abled/disabled, good/bad, object/subject, mind/body) provides ample opportunities for students to deconstruct, examine, analyse and interpret competing views of the present and of future possibilities. Deeper than the interpretive level, the critical view asks students to deconstruct and 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 sweeps of knowledge. Postcolonial emphases on indigenous and colonised

people, race, ethnicity, gender and the knowledge of colonised people are also 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 aspect for addressing what has been marginalised involves recognising value in things or practices that have often been overlooked. Slaughter (1993; 1995a), for example, has pointed out that one aspect of the critical perspective in critiquing the modern worldview is the reclaiming of the sacredness of nature. Critical knowledge goes beyond interpretation to examine meaning and the deep structures that form or maintain knowledge. As students construct their knowledge, they can be encouraged to appreciate the origins of values in different cultures and the structures that 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 used by futurists 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 timeframe of classroom work, having more direct relevance.

An overarching methodology of futures studies 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 of the future. Coates (1996, p. 67) cites Warfield's definition of 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.

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. This link is being considered, although it does not necessitate a high probability of eventuating. In describing scenarios, De Jouvenel (1996, p. 11) 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.

De Jouvenel (1996) and Coates (1996) delineate between two fundamental types of scenarios: exploratory and strategic (also called 'normative'). Both forms involve envisaging a particular future. However, the thinking in exploratory scenarios moves in a direction from the present towards futures that 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 worldview, 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.

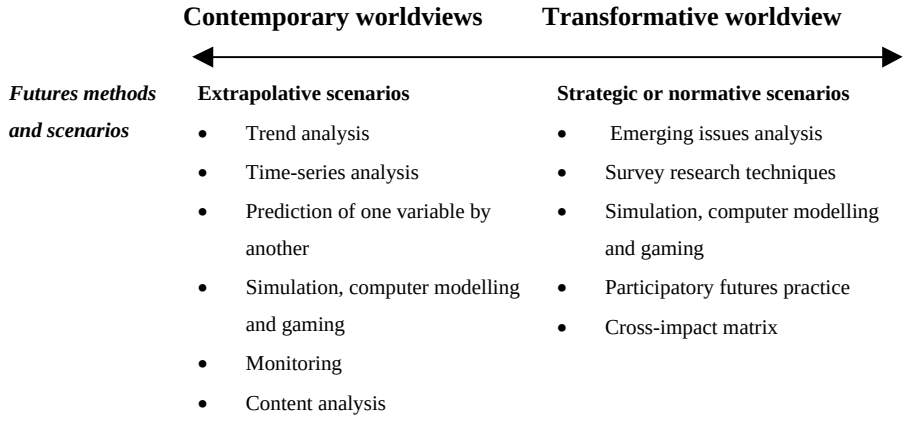


Figure 3: The futures field - futures methods and scenarios

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 methodologies for gathering data. 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 that place them at other points on the spectrum. Their placement in particular columns reflects the main emphases and particular strengths of each methodology. The list should be seen as neither 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 include an extended research essay in their Diploma requirements and an extended interdisciplinary project as part of the program for middle years. 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 for 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, and in the process, usually highlight assumptions underpinning societal and environmental change. This use 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, with the goal of improving life for future generations. It also 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, at least attempts to place its values up-front. These are open to scrutiny. For many critical futurists, these values are frequently centred on a consideration of the rights and quality of life of future generations; not necessarily considered at the expense of current generations, but alongside them. These values also centre on voices frequently drowned out in the course of world-events; voices 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 at least lead to 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)

Dror has also noted the necessity of improved moral reasoning skills to deal with the discussion of values. In its mission statement, nearly every school has a concern to educate and develop the 'whole person'. This means that educators are concerned with more than academic knowledge. They are also concerned with moral and spiritual development, and with contextual reasoning and thinking skills. Such broader concerns can 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 possible positions 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 extrapolation. They are unlikely to use methods requiring 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 contemporary 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 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 underpinning 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 the ethics and criteria necessary 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.

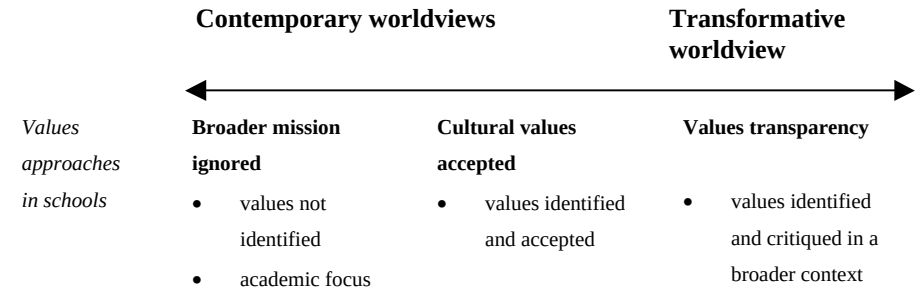


Figure 4: The futures field – values approaches in schools

Modern industrialism is built on the utilitarian view of nature. The 1700s agricultural revolution in Britain and the subsequent industrial revolution saw improved living standards, linked with a presumed increase in human happiness, as a worthy goal. The revolutions also viewed natural resources as an unlimited supply of materials for this end. With the by-products of industrialisation - such as the accumulation of chlorofluorocarbons in the environment, and the near-depletion of many resources such as fish stocks - the utilitarian view is now being questioned. Slaughter (1993, p. 846) has 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.

Much of the traditional writings on ethics has focused on individuals and their rights and relationships 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. To denote the interconnectedness between ideas or 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’. 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 should 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 context in which the situation is located. Situational ethics, popularised in the 1980s, might belong under this banner. Further examples of a more holistic approach to ethics may include: ethical issues within industries where workers are replaced by technology; the replacement of body parts using biogenetic engineering in medicine; or perhaps the creation of new crops through genetic manipulation in agriculture.

An ecological approach takes an even broader perspective, locating 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, p. 37) has commented:

> 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.

Stewardship, intergenerational 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, the deep ecologists 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. Ethicists occupy the other end of the spectrum, accepting the primacy of human survival but also recognising 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 scrubland. In contrasting the two ends of the environmental spectrum, Capra (1997, p. 7) has 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.

Outlined below, four principles are useful in a classroom situation for students to develop a framework by which they can make decisions about preferable futures.

Firstly, intentions are important. There is a 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 a high quality of life for the planet's inhabitants. Secondly, any ethical framework cannot be entirely anthropocentric. Even at the level of utilitarian survival, consideration must be given to the thriving of non-human life, in order for humanity to continue existence.

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. Evidently, consequences cannot be known with certainty in advance. However, any ethical framework should involve identifying likely consequences and work to minimise ill effects and maximise good

effects. Failure to do this is failure to fully consider and implement 'what ought to be'.

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. Although 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 the values found in the statistics of Gross National Product. Ethics should involve addressing a range of values in the spiritual domain; values in the areas of personal freedom and dignity, education and health.

Figure 5 is a depiction of the final layer outlining ethical positions on the conceptualisation of futures work.

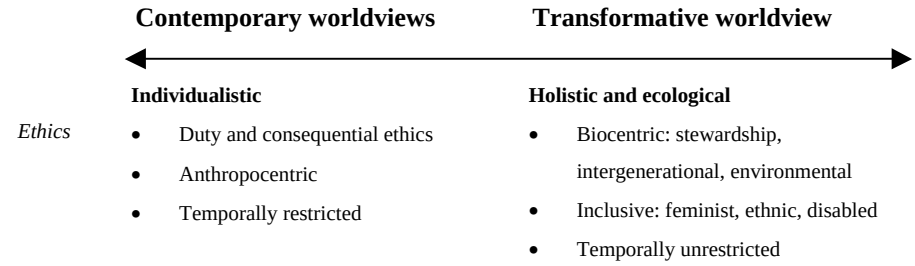


Figure 5: The futures field – ethics

Conclusion

The conceptualisation presented here provides a framework for the development of futures work in classrooms. Students should be aware of the orientation of the futures ideas 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, forms of knowledge, methods, tools and ethics informing their understanding. This will more likely lead to the forward mindset and critical and creative understanding necessary to take humanity forward to develop a wise culture (Slaughter, 1995b) than will the automatic acceptance of extrapolated futures.

References

Aburdene, P. & Naisbitt, J. (1992) *Megatrends for Women*. New York: Villard Books.

Beare, H. & Slaughter, R. (1993) *Education for the Twenty-First Century*. London: Routledge.

Bloom, B. (1976) *Human Characteristics and School Learning.* New York: McGraw-Hill.

Capra, F. (1997) *The Web of Life, a New Synthesis of Mind and Matter*. London: Flamingo.

Coates, J. (1996) An overview of futures methods. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 2: Organisations, Practices, Products*. Hawthorn, Victoria: DDM Media Group.

De Jouvenel, H. (1996) The Futuribles Group. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 2: Organisations, Practices, Products.* Hawthorn, Victoria: DDM Media Group.

Delors, J. (1998], *Learning, the Treasure Within.* Paris: UNESCO.

Department of Education, Training and Employment (2000) South Australian Curriculum Standards and Accountability Framework: Curriculum Scope and Curriculum Standards – Middle Years Band (Trialling Draft – March). Adelaide: Curriculum Resources Unit.

Dror, Y. (1996) Futures Studies for Contemplation and Action. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 3: Directions and Outlooks*. Hawthorn, Victoria: DDM Media Group.

Hutchinson, F. (1996) Educating beyond violent futures in children's media. In R. Slaughter (Ed.) *New Thinking for a New Millennium*. London: Routledge.

Inayatullah, S. (1996) Methods and epistemologies in futures studies. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 1: Foundations*. Hawthorn, Victoria: DDM Media Group.

Inayatullah, S. (1998a) Causal layered analysis. Poststructuralism as method. *Futures*, Vol. 30, No .8, pp. 815-830.

Inayatullah, S. (1998b) Deconstructing the future. In S. Inayatullah & P. Wildman (Eds.) *Futures Studies: Methods, Emerging Issues, and Civilisational Visions*. Brisbane: Prosperity Press.

Inayatullah, S. (1998c) Listening to non-Western perspectives. In D. Hicks & R. Slaughter (Eds.) *World Yearbook of Education 1998, Futures Education.* London: Kogan Page.

Jarva, V. (1996) Towards female futures studies: From preventative research to enabling tools design. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 3: Directions and Outlooks*. Hawthorn, Victoria: DDM Media Group.

Masini, E. (1996) International futures perspectives and cultural concepts of the future. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 1: Foundations*. Hawthorn, Victoria: DDM Media Group.

Matathia, I. & Salzman, M. (1998) *Next, Trends For The Future*. Sydney: Pan Macmillan.

Meadows, D., Meadows, D. & Randers, J. (1992) *Beyond the Limits*. London: Earthscan.

Milojevic, I. (1996) Towards a knowledge base for feminist futures research. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 3: Directions and Outlooks*. Hawthorn, Victoria: DDM Media Group.

Milojevic, I. (1998) Learning from feminist futures. In D. Hicks & R. Slaughter (Eds.) *World Yearbook of Education 1998, Futures Education*. London: Kogan Page.

Naisbitt, J. (1982) *Megatrends: The 10 New Directions Directing Our Lives*. New York: Warner.

Naisbitt, J. & Aburdene, P. (1990) *Megatrends 2000: 10 New Directions for the 1990s*. New York: William Morrow.

Ogilvy, J. (1996) Futures studies and the human sciences: The case for normative scenarios. In R. Slaughter (Ed.) *New Thinking for a New Millennium*. London: Routledge.

Sardar, Z. (1992) When the pendulum comes to rest. In S. Moorecroft (Ed.) *Visions for the 21st Century*. London: Adamantine Press Limited.

Sardar, Z. (1996) Other futures: Non-Western cultures in futures studies. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 1: Foundations*. Hawthorn, Victoria: DDM Media Group.

Slaughter, R. (1993) Looking for the real 'Megatrends'. *Futures*, Vol. 25, No. 8, pp. 827-849.

Slaughter, R. (1995a) *Futures Tools and Techniques*. Hawthorn, Victoria: Futures Studies Centre.

Slaughter, R. (1995b) *The Foresight Principle: Cultural Recovery in the 21st Century*. London: Praeger, Adamantine.

Slaughter, R. (1996a) Critical futures study as an educational strategy. In R. Slaughter (Ed.) *New Thinking for a New Millennium*. London: Routledge.

Slaughter, R. (1996b) Implementing foresight for future generations. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 3: Directions and Outlooks*. Hawthorn, Victoria: DDM Media Group.

Sogolo, G. (1996) The idea of progress and the future of Africa. In R. Slaughter (Ed.) *The Knowledge Base of Futures Studies, Volume 3: Directions and Outlooks*. Hawthorn, Victoria: DDM Media Group

Tough, A. (1998) The future of human civilisation: Caring for future generations. In S. Inayatullah & P. Wildman (Eds.) *Futures Studies: Methods, Emerging Issues, and Civilisational Visions*. Brisbane: Prosperity Press.

Wertheim, M. (1997) *Pythagoras' Trousers: God, Physics and the Gender Wars*. London: Fourth Estate.

Wilber, K. (1996) *A Brief History of Everything*. Melbourne: Hill of Content.

Wilber, K. (1998) *The Marriage of Sense and Soul, Integrating Science and Religion*. Melbourne: Hill of Content.