Millennium Project South African Node
International Futures Conference

Building Futures Intelligence Capacity through education: developing a generic undergraduate futures education sequence and its application to business and teacher education

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Abstract

In times of relative stability, the lessons of the past may well apply to understanding and managing the present. But in times of rapid social, political, economic and environmental change, being proactive rather than reactive about the future is critical. In one of its recent reports, *State of the Future, Futures Research Methodology,* the Millennium Project drew on Futures Studies to demonstrate the importance of an explicit futures perspective in making critical decisions and clarifying choices about the future. Futures Studies is a broad and complex field, with its own developing knowledge base, concepts and methodologies. More recently, concepts and techniques from the field have been adapted to education (Futures Education) in a number of ways from primary to tertiary settings across the globe, but the applications remain few and far between and field still remains, as Slaughter puts it, 'the missing dimension in education'. However Futures Education is critical to the long-term development of futures intelligence capacity (FIC).

In 2006 the World Futures Studies Federation called for the development of a generic Futures Education curriculum for use in undergraduate courses globally, and the authors took up the challenge. The curriculum, currently in its development stages, is based on current knowledge and practice in the general field of Future Studies. It is designed to be generic rather than focus on any specific area, making it applicable and accessible to a wide range of undergraduate courses. It is also flexible in that it includes capacity for specific and local contexts to be explored. This paper outlines the thinking and proposed content areas that have gone into its development to date, and gives examples of how it has been adapted to two specific fields - business education and teacher education, with background rationale for each case.

Introduction

"Students learn that future paths, whether considered personally, locally or globally, are not fixed but are the result of actions and decisions taken now…..putting a futures perspective….is an exciting perspective which appeals to both staff and students. It allows for creativity, critical thinking, analysis and synthesis of ideas: at the same time it is exploratory, proposing possible, probable and preferable futures"

David Rawnsley, Curriculum Co-ordinator, St. John's Grammar School

At the beginning of the 21st century we find ourselves in a space and time in human history unlike any other. Rapid global change, whose dimensions are encapsulated in the eight UN Millennium goals, means that there is an urgency about the way we need to position ourselves in order for the human project to succeed. Part of this

success lies in being decidedly proactive about the world we live in and want to live in. This means the active creation of what Slaughter (2004) calls social foresight, in other words, futures intelligence capacity (FIC), across a range of social, economic and environmental sectors. It is timely that this conference be held in South Africa as the country in many ways represents a microcosm of the globe.

Thinking about the future has in some ways always been part of the human condition, such as preparing for food shortages, or selecting building materials that will last. All cultures have their sooth-sayers, their oracles and their crystal ball gazers. However, the notion of the Future as a serious field of study and the Futurist as a professional is a relatively new one. From its beginnings after WW2 in the fields of strategic planning, forecasting, trend analysis and scenarios, Futures Studies (FS) has developed and evolved into a broad and complex field whose main project is now an emerging meta-discipline. It integrates a range of tools, methods and concepts for FIC building from a variety of sources to open up an exploration of possible probable and, most importantly, preferable futures (Slaughter, 2004).

FS offers a continuously developing knowledge base, concepts and methodologies that can be harnessed to develop FIC that may be applied in any field of endeavour. FS reminds us that the future is not something that merely happens to us, rather it is actively created and shaped by a range of actors and decision makers. It reminds us that while the future can never be known with any certainty, humans have the capacity to exercise what Slaughter (2004) calls the 'speculative imagination' where we can begin to explore the 'not-here and the not-yet' (p. 15). At the same time, Futures studies makes it clear that our explorations are shaped, limited and clouded by our prevailing cultural contexts and assumptions, and seeks to unmask these so that different, imaginative and other futures can be brought to mind. In short, Future Studies seeks explicitly to consider not *The Future* but *Many Futures*.

A key text for FS is the Knowledge Base of Futures Studies (Slaughter, 2005). As well, authoritative global publications such as the Worldwatch Institute's *State of the World 2007: Our Urban Future* (Brown, 2007) and The Millennium Project's *State of the Future* report (Glen and Gordon, 2005) represent example of Futures methodologies and ideas being applied to building FIC in development issues, particularly in the formulation of scenarios describing possible, probable and preferable futures. The perspectives and methodologies employed position these institutions as Institutions of Foresight (Slaughter, 2004).

Futures in Education

The maturity of the FS field has meant that aspects of it are available for adaptation to begin to build FIC in the broad education sector. Indeed Beare and Slaughter (1993) have described FS as the missing dimension in education. Situating Futures in education, particularly at the tertiary level, is a key and critical step if a broad FIC is to emerge. Recently one of the peak bodies representing Futurists, the World Futures Studies Federation (WFSF), called for the development of a generic futures education sequence at the undergraduate level that could be adapted for use by any university Faculty that wished to develop a futures capability and capacity within its curriculum. The authors took up the challenge, firstly considering the nature and

scope of the sequence in general terms applicable and accessible to a wide range of undergraduate courses and sufficiently flexible to include capacity for local contexts to be explored. The authors then adapted aspects of the sequence to two quite different educational contexts within two universities – Swinburne University's Faculty of Business and Enterprise and Australian Catholic University's Faculty of Education. The next section describes the development and content of the generic sequence.

Developing a Generic Futures Education Sequence

The foundational concepts underpinning the sequence are that while 'the future' cannot be absolutely known, possible futures can be creatively explored using a range of methodologies and tools. Knowledge of FS allows for the preparation, anticipation and understanding of this in order to become pro-active about creating preferred futures. Futures are shaped by the actors who have a stake in them.

The rationale for this sequence is based on the idea that futures thinking and action begins at home. For many undergraduates, thinking about the future is not something they are familiar with, and in our experience, many find it challenging and sometimes even threatening. The sequence is designed from a constructivist view of learning that begins with the students' existing concepts and values. The thread running though the sequence is the building of FIC through the self, the organisation they are connected with, and society at large. Generally beginning students in FS in Australia tend to hold Western modernist constructs of the future, seeing the future as a taken-for-granted, more-of-the-same trajectory of the past/present. In this thinking, the future can be known through forecasting, scenario planning, trend analysis and other rationalist methodologies. For many students, technology plays a key role in their images of the future, as do dystopian images of ecological and social breakdown. The aim of the FS sequence is to move beyond this to include a more critical, emancipatory, relativistic and creative notions of futures that are less bounded, more open and engage the imagination. The modules are thus design for students to move through these levels.

The sequence was conceived as comprising four modules representing the equivalent of 24-36 hours' teaching/learning, enabling it to be taken up as a minor sequence if desired. The modules are based on the work of British Futures educator David Hicks[1]. They are:

Module 1: Facing the Future
Module 2: Thinking about the Future: Tools, Concepts and the Role of Technology
Module 3: Changing the Future
Module 4: Critical and creative futures

Module 1. Facing the Future

Module 1 assists students to explore their own personal conceptions of the future and of those closest to them. Through this they are introduced to FS as a field of

[1] Based on the David Hicks (2006) Unit ED2013: Education for the Future. University of Bath Spa.

study, and consider the basic concepts and frameworks that underpin futures thought, especially the notion that the future is not pre-determined but open and based on assumptions, and that many futures are possible. The key questions the module seeks to explore are:

- Do people think about the future? If so - what, how and why?
- Why should we think about the future?
- What are some key global issues that make futures thinking important?

Areas covered include:

- How the idea of the future is commonly employed through investigating the idea of the future personally and then with a range of other people;
- Determining how popular images underpin common understanding of the future;
- The State of the Planet:
- Discovering alternative future images:
- Locating the current understanding of FS within its historical development;
- Exploring the role played by technology in futures thought;
- Beginning to uncover the assumptions and worldviews that underpin futures thought;
- Constructing images of preferred futures.

Module 2. Thinking about the Future – Tools, Methods and Concepts

In this module students examine and use a range of futures tools, methodologies and concepts that enable them to develop their futures thinking further. These include tools and techniques such as forecasting, incasting and backcasting, trend analysis, Delphi surveys, scenario building, writing from the future to the past/present, and considering possible, probable and preferable futures in a range of contexts. Sources of material for analysis include the image of the future as portrayed in film, other media, science fiction and popular culture; portrayals of utopia and dystopia. Extrapolation vs imagination are discussed (see Slaughter (1995) for a review of a range of futures tools and techniques). The work of past and present futurists is examined and researched, eg Nostradamus, H.G. Wells, Bertrand de Jouvenal, Herman Kahn, Alvin Toffler, Donella Meadows, Hazel Henderson, Richard Slaughter, Sohail Inayatullah and others. The key questions this modules seeks to explore are:

- How can people think about the future?
- What are the origins of images of the future?
- What are the roles of extrapolation and imagination?
- What do futurists think about the future?

Module 3. Changing the Future, the Role of Technology

In this module students are beginning to relate their learnings in the previous modules to broadening the notion of futures. They have learned that there are many futures, and that some futures are more preferable than others. Now they begin to develop images of preferable futures based on both analytical and imaginative considerations of possible futures. They examine the pivotal role of technology as both shaper of and adapter to the future, and consider technological domination of the future as one type of future. In doing so they explore the notion of science and technology as objective and neutral.

The key questions that shape this module are:

- What is technology?
- Is technology neutral?
- How does technology shape the future?

Module 4. Critical and Creative Futures

This module opens up postmodern perspectives of the future, where futures are seen as post-conventional, critical and actively created. In particular students begin to consider the notion of futures from Other perspectives (non-Western futures, gender dimensions of futures including concepts of time, Gaian futures), and that taken-for-granted futures are bound up with vested power interests. Visioning and creative imagination are key components of this module. Students are supported as they begin to consider deep personal and social issues relating to hope and despair, powerlessness and empowerment. They begin to explore Inayatullah's (1998) Causal Layered Analysis as a tool for understanding the deep structures of worldviews, myths and metaphors that underpin both Western and Other futures. They draw inspiration from examining a range of individuals and groups who in different ways have influenced the future, particular those who have inspired hope, such as Victor Frankel, Martin Luther King and Nelson Mandela.

The key questions that shape this module are:

- Whose views of the future are dominant and why?
- What are other perceptions of the future?
- Who decides?
- Who benefits and who loses?
- Whose interests are embodied in different futures?
- What gives us hope?
- What other futures are preferable and how can they be brought forth?

The next sections discuss various aspects of building FIC in tertiary studies, based on an adapted from the generic sequence. The first examines issues of FS in Business and Enterprise education at Swinburne University. The second discusses

primary and secondary education in Australian schools and outlines a unit developed for pre-service primary teachers at Australian Catholic University.

1. Futures in Business and Enterprise Education

Since 2001 a postgraduate course in strategic foresight has been offered at Swinburne University. Designed by Richard Slaughter, that course has the ambition of:

- Creating the next generation of foresight practitioners in Australia; and
- In doing so support progress towards the development of social foresight (Slaughter, 2006, p.5)

Graduates of that course discover "not merely enhanced clarity regarding the great shaping issues of our time but also the grounds of mature long term purpose, hope and direction for individuals" (Slaughter, 2006, p.6). The typical student in that course was a 'mid-career' professional, someone who was already established in a professional discipline, and who was looking for an 'edge' or an opportunity to transform their professional practice. The Masters of Strategic Foresight was an offering of the faculty of Business and Enterprise and so it sat along other post-graduate courses such as the Masters of Business Administration and Masters of Entrepreneurship. This meant that the course was both conventionally located within a business school and post-conventional in its stated ambition to create individual and socially transformed futures.

The situating of the Masters of Strategic Foresight thus allowed a curriculum and pedagogy that spanned pragmatic, critical and epistemological approaches to foresight. It was also of considerable advantage that the students of that Masters course were not merely seeking a conventional education but that they also were open to post-modern approaches. It was not unusual for units of study to range over such diverse disciplines as psychology, sociology, spirituality, economics, social construction of reality and the latest techno-wiz development. It would be fair to say that the latent capacities of the students have enabled a very ambitious curriculum.

In 2007 an opportunity arose to design a foresight minor sequence that could be offered in the Bachelor of Business degree at Swinburne University from 2009. The curriculum challenge this raised was how much of the learning from the 7 years of teaching the postgraduate course could be brought across to the undergraduate offering. Of particular interest was the extent to which post-modern approaches could be successfully offered to students who would be younger and have much less professional and life experience than was the case with the postgraduate course.

The design of the undergraduate foresight minor drew from the findings of doctoral research that was undertaken into the nature of psychological development in the students studying in the Masters of Strategic Foresight, particularly 'self-sense' development. (Hayward, 2005). The self-sense developmental process occurs

through the individual interpretation of experience and that interpretation acts to create both a sense of the 'self' which is having the experience and of the world from which that experience arose. Self-development occurs in a recurrent pattern of differentiation — where the self-sense was apart from the world — and integration — where the self-sense was in accord with the world — with the overall development of a self-sense that can function effectively in environments of increasingly complexity. The stages that encompass this process of constructing of a permanent, separate self are referred to as 'conventional', meaning that the self-sense operates with highly levels of congruence between social expectations and experience. Postconventional stages of self development reverse the developmental trend of the conventional stages. Rather than constructing a permanent, separate self, the postconventional stages begin the stepwise deconstruction of that permanent self sense.

> At the first postconventional level people come to realize that the meaning of things depends on one's relative position in regard to them, that is, on one's personal perspective and interpretation of them. Although the objects themselves are seen as permanent, their meaning is seen as constructed ...This view of reality is called the systems view because it allows individuals to look at systems of thought or organizations with distance… A main concern of postconventional adults is to lay bare underlying assumptions and frameworks [Cooke-Greuter 2002 p.20].

Based upon that doctoral research it was hypothesised that the postgraduate students represented a predominantly 'postconventional' self-sense and that Slaughter's original design intent of a "program with a heart, as it were, a deep sense of interior awareness and meaning that varies from person to person" (Slaughter 2006 p.5) resonated strongly with such a group. Congruence with social expectations was less important to these students than was a felt sense of personal authenticity. These students were already capable of operating in a social role before studying foresight and so this was not of prime importance to them. Based on this it was thought that the undergraduate course curriculum would have to be more focussed around a 'conventional' self-sense audience that would highly regard congruence with social expectations and the performance of a social role. It was thought important, however, that the undergraduate curriculum remained faithful to the aims of 'enhanced clarity', 'mature long term purpose' and 'social foresight'.

Accordingly the generic sequence was redesigned as an undergraduate minor as follows:

1. Futures Theory and Practice
2. Personal Futures
3. Organisational Futures
4. Social Futures

The premise of this design was to introduce the students to a conventional understanding of futures concepts and tools in the initial unit and then to apply that

theory and practice in increasingly complex domains that will be explored in subsequent units. The three domains – personal, organisation and society – would give students a progressively elaborated social role within which foresight could be practiced whilst also adding the conceptual complexity within which such foresight would be enacted. Such a design would be congruent with a conventional self-sense but would also pace the development of any emerging post-conventionality amongst students. See appendix 1 for details of the minor sequence.

2. Futures Education (FE) in School Education in Australia

Historically the education sector has been slow to respond to changing world conditions. However issues of globalisation, sustainable development and the technoscience revolution are influencing educationalists in forming responses to an education appropriate for the 21st century. The influence of Futurists, particularly Richard Slaughter, Sohail Inayatullah and David Hicks, has been a key element in consciousness raising for the need to build FIC though education in Australia and elsewhere, based on the increased recognition that education in the 21st century necessarily needs to depart from the more subject based approaches that have their origin in the knowledge divisions of the 19th century. As such, education at primary, secondary and tertiary levels has a crucial role to play in the development of FIC through the medium of a strong FE approach. By embedding Futures thinking, tools, concepts and language as a given in students' and teachers' patterns of thinking, they are provided with powerful thinking, development and action tools to imagine, create and understand the future differently. FE opens up the imagination about what is possible and worth working towards. It resists and offers alternatives to the narrowing of the collective imagination and is the basis for the development of FIC For a detailed discussion of Futures in education, see Gidley, Bateman and Smith, 2004).

At present, an explicit Futures Education for Australian Primary and Secondary schools based upon the language, concepts and tools of Futures Studies as outlined above is still in its early stages, with individual teachers adapting the field to their work in a variety of ways. Page (2000) has considered Futures in early childhood work. While new curriculum documents recognise the need for education for the future, indicating that futures thinking has entered some Departments of Education, few offer explicit ways of achieving this based on the knowledge base of Futures Studies. Rather, the notion of the future is unproblematised; remaining implicit within curriculum areas such a global education, science, technology, civics and sustainability as well as careers, vocational education and concepts around life-long learning and personal development. Such approaches tend to be reactive in terms of the future, and more often than not serve to enforce the status quo though an uncritical adoption of a taken-for granted future with a past unexamined in terms of the deeper structures.

However a small and growing number of both primary and secondary teachers have become aware of FE and are using its concepts and tools in various ways in their teaching both within specific learning areas and as integrated approaches that in some cases have involved school-community links. Teachers of FE enthusiastically endorse its adoption in schools, believing that it provides an approach that is

empowering for both themselves and their students in that it offers creative and open-ended ways of considering the future. The most commonly adopted Futures tool in schools is the notion of possible, probable and preferable futures (often referred to as the '3P's).

The curriculum documents of the states of Tasmania, South Australia and Queensland all describe an explicit FE approach that seeks to develop futures thinking, skills and conceptual understandings in a number of ways. Each of these curricula uses 'curriculum organisers'; clusters of connected ideas linked to skills which enable development of futures concepts. These concepts relate to:

- personal futures
- social responsibility
- global futures

In personal futures, life pathways and social futures learning centres around students' life skills, such as cooperation, collaboration and considering possible worlds of work. Through this it is anticipated that students will develop a sense of initiative and enterprise. Multiple literacies are used to encourage students to develop a range of communication skills, based on Gardner's (1999) theory of multiple intelligences.

In developing social responsibility and in global futures, students consider what it means to interact with others within inter-cultural perspectives. Here are some exciting developments in FE as students are encouraged to develop an awareness of local and global economies through CLA approaches and developmental models based on probable, possible and preferable futures scenarios.

FE in Teacher Education

In the case of pre- and in-service teacher education, with few exceptions, tertiary Faculties of Education have been slow to adopt FE in teacher preparation and professional learning courses. At Australian Catholic University an elective subject called *Educating for the 21st Century: Futures Education* is offered to students in the Bachelor of Education (Primary) course.

Though the equivalent of one module only, the subject draws from the generic sequence described above. The objectives of the unit are described as assisting students to:

- Obtain a broad overview of the field of Futures Studies;
- Explore some of the key concepts within the field;
- Explore some of the tools and techniques associated with Futures Studies;
- Become familiar with various literatures in the field;
- Explore applications of Futures Studies to education (Futures Education, FE);
- Examine resources for FS and FE;
- Apply FS to developing education materials appropriate for primary education.

The content covers aspects of all the generic modules. In module 1: Facing the Future, students are asked to describe their images of the future and to collect data from friends and family about how they see the future. In thinking about the future, students select a piece of popular culture – film, writing, Internet sites, advertising and so on to examine it for images of the future. While located in the conventional stage of personal development and awareness, these images provide advance organisers for a later exploration within post-conventional thinking, bringing in the concept of critical futures through questioning whose future is portrayed, whose is omitted, who benefits from the portrayals and what assumptions are made about the trajectory from the present to that future (as in module 4).

Drawing from module 2, students learn how to use FS tools and consider how they can apply them in a classroom situation. The role of technology in their own lives and the lives of the children they teach is discussed and critiqued. Based in modules 3 and 4, students then develop scenarios for education in the future based on a range of possible futures. They consider their preferable future and what might be needed to bring it forth. Lastly they develop a range of teaching approaches and resources within a unit of work appropriate for primary schools based on what they have learned, that are designed to be empowering for children (Hicks, 1996). See appendix 2 for details of the unit.

Conclusion

Futures Studies as applied to education can provide the means to the development of an explicit and powerful FIC. The examples given above may be used and adapted by a range of practitioners to their own situations. The authors welcome further discussion and critique of the sequence, and are keen to see the development of other educational initiatives in similar or new fields.

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Appendix 1.

Futures Studies in Business and Enterprise – Swinburne University. BBus (Enterprise and Innovation)

Proposed Futures Subjects

Core Subject

- HBN330 Futures Theory and Practice (NEW TITLE)

Futures Minor

- HBN330 Futures Theory and Practice (NEW TITLE)
- HBN331 Personal Futures
- HBN332 Organisational Futures
- HBN333 Social Futures

Futures Minor for BBus(&I) Students

- HBN331 Personal Futures
- HBN332 Organisational Futures
- HBN333 Social Futures
- HBN335 Four Technological Revolutions (NEW TITLE)

HBN330 Futures Theory and Practice

Credit Points:	12.5 points	
Contact Hours	36 hours	
Duration	One Semester or Term	
Campus:	Hawthorn, Sarawak	
Prerequisites:	Nil	
Corequisites:	Nil	
Teaching Method:	Lectures: 12 hours	
	Tutorials: 24 hours (Max Class Size 25)	
Assessment:	Individual Assignments	(50%)
	Participation	(20%)
	Group Project - Scenarios	(30%)

Objectives:

At the conclusion of this unit students will be able to:

- Describe what the elements of futures thinking are
- Undertake a trend analysis on a relevant topic
- Apply creative and innovative thinking to selected contemporary issues
- Prepare probable scenarios around a selected issue

Content:

- Time & time frames
- Creativity and innovation
- Trend analysis and forecasting
- Cross Impact analysis

- Scenario thinking

Reading Materials:
To be advised based on updated availability of suitable textbooks

Other suitable reading materials:
To be developed with detailed subject outline

HBN331 Personal Futures

Credit Points: 12.5 points
Contact Hours 36 hours
Duration One Semester or Term
Campus: Hawthorn, Sarawak
Prerequisites: Nil
Corequisites: Nil
Teaching Method: Lectures: 12 hours
Tutorials: 24 hours (Max Class Size 25)
Assessment: Individual Assignments (50%)
Participation (20%)
Team Project – Careers trends analysis (30%)

Objectives:
At the conclusion of this unit students will be able to:
- Gain insight into generational and cultural thinking about the future
- Become sensitive to interpersonal reactions arising from how individuals respond to change and uncertainty
- Develop an awareness of critical trends that will impact on employment in the near future
- Prepare an ethical futures career plan

Graduate Attributes:
Students who complete this subject will
-

Content:
- Personal attitudes to futures and change
- Managing uncertainty and creating hope
- Employment and career trends
- Local choices, global consequences
- Creating your preferred future

Reading Materials:
To be advised based on updated availability of suitable textbooks

Other suitable reading materials:

To be developed with detailed subject outline

HBN332 Organisational Futures Credit Points: **12.5 points**

Contact Hours 36 hours
Duration One Semester or Term
Campus: Hawthorn, Sarawak
Prerequisites: Nil
Corequisites: Nil
Teaching Method: Lectures: 12 hours
Tutorials: 24 hours (Max Class Size 25)
Assessment: Individual Assignments (50%)
Participation (20%)
Team Project- Delphi process (30%)

Objectives:
At the conclusion of this unit students will be able to:
- Develop and apply an environmental scanning framework to an organisational context
- Gain an insight into how futures work produces both opportunities and challenges for organisational strategy
- Apply a Delphi process to generate 'expert' futures data
- Become knowledgeable about Corporate Social Responsibility programs in organisations

Content:
- Environmental Scanning
- Mission, Vision & Values
- Delphi expert futures processes
- Corporate Social Responsibility

Reading Materials:
To be advised based on updated availability of suitable textbooks

Other suitable reading materials:
To be developed with detailed subject outline

HBN332 Societal Futures

Credit Points: 12.5 points
Contact Hours 36 hours
Duration One Semester or Term
Campus: Hawthorn, Sarawak
Prerequisites: Nil
Corequisites: Nil
Teaching Method: Lectures: 12 hours
Tutorials: 24 hours (Max Class Size 25)

Assessment: Individual Assignments (50%)
Participation (20%)
Team Project – Community Visioning (30%)

Objectives:
At the conclusion of this unit students will be able to:
- Analyse contemporary social change processes and identify the opportunities and challenges arising for business, government and society
- Become sensitive to how not-for-profit groups employ futures thinking
- Develop awareness of the challenges in developing future focused government policy
- Evaluate a community visioning process and assess how it balances the different viewpoints of the relevant stakeholders

Graduate Attributes:
Students who complete this subject will
-

Content:
- Social change and innovations
- Grass-roots futures movements
- Public policy and the future
- Community visioning

Reading Materials:
To be advised based on updated availability of suitable textbooks

Other suitable reading materials:
To be developed with detailed subject outline

HBN335 Four Technological Revolutions

Credit Points: 12.5 points
Contact Hours 36 hours
Duration One Semester or Term
Campus: Hawthorn, Sarawak
Prerequisites: Nil
Corequisites: Nil
Teaching Method: Lectures: 12 hours
Tutorials: 24 hours (Max Class Size 25)
Assessment: Individual Assignments (50%)
Participation (20%)
Team Project- SWOT analysis (30%)

Objectives:
At the conclusion of this unit students will be able to:
- Develop knowledge and understanding around a range of critical future technologies

- Prepare a SWOT analysis for an organisation
- Describe the possible risks arising from particular technological developments
- Appreciate the possible social implications across a range of stakeholder groups

Content:
- Energy sources and uses
- Biotechnology
- Sustainable manufacturing
- Robotics & AI

Reading Materials:
To be advised based on updated availability of suitable textbooks

Other suitable reading materials:
To be developed with detailed subject outline

Appendix 2

Futures Education at Australian Catholic University B.Ed (Primary)

Unit outline

Education for the 21st Century (Futures Studies/Education)

Hours: 24 (2 weekends or equivalent)

DESCRIPTION
This unit, Education for the 21st Century, is an elective that investigates the field of Futures Studies and its application to education. Futures Studies is a relatively new field, arising after the 2nd World War and has only recently been applied to formal education. In times of relative stability, the lessons of the past could apply to understanding and managing the present. But in these times of rapid social, political, economic and environmental change, being proactive rather than reactive about the future makes sense. Futures Studies (FS) is a broad and complex field, with its own developing knowledge base, concepts and methodologies. This unit introduces the field, explores some of the concepts and tools, and considers its applications to education (Futures Education, FE).

LEARNING OUTCOMES:
This unit will assist students to:

- Obtain a broad overview of the field of Futures Studies;
- Explore some of the key concepts within the field;
- Explore some of the tools and techniques associated with Futures Studies;
- Become familiar with various literatures in the field;
- Explore applications of Futures Studies to education (Futures Education, FE);
- Examine resources for FS and FE;
- Apply FS to developing education materials appropriate for primary and/or secondary education

CONTENT:
- the nature and purpose of Futures Studies
- the goals and dimensions of Futures Studies
- the knowledge base of Futures Studies
- the tools and techniques of Futures Studies
- Selection, use and evaluation of teaching strategies and resources for Futures Education
- Case studies of schools offering FE
- Planning and implementation for teaching FS

Assessment Tasks

1. Survey

Survey four or more friends or family members about their images of the future. Give them a date to focus on – say 2027 or earlier for younger people:

general images (drawing perhaps)
personal futures

Some suggested questions to ask them are:

Where do your images come from?
If they are different, why?
How do the images affect your everyday life?

Report your findings and draw conclusions about people's views of the future.

2. The future in popular culture

Critically review items of popular culture such as film, print media, video, websites, TV, advertising material for the images and messages they portray of the future. You could refer to a range of images or focus more deeply on one or two.

Consider :

What image(s) of the future are portrayed?
Whose future is portrayed?
What are the dominant themes?
How are the images used?
How might these images relate to people's views of the future?
What are some incongruities or paradoxes in the messages the images are used to portray?

Where possible, attach the images you have discussed to your work. References are required as appropriate.

3. Unit of work

Develop an integrated unit of work with an explicit FE dimension .The unit should cover a minimum of 8 hours' teaching time. The unit should be designed to add a futures dimension to current learning outcomes outlined in a selected area of the current VELS and/or RE guidelines as an integrated unit of work.

Your unit should include:

Integrated unit topic
An indication of your selected level(s)
Relevant VELS domains and dimensions
An overall aim, consistent with the perspectives of FS/FE

A lesson sequence of 6-10 lessons
A clear indication of how you have included a Futures perspective
Clear use of a range of FE tools/concepts
A properly cited bibliography of supporting resources and references.
Any appropriate worksheets
Assessment procedures

4. Resources for FE
Collect a range of resources that can be used for FE. These may be academic literature from the field of FS appropriate for teachers, or other resources that can act as stimulus or teaching materials for students, such as texts, children's literature, journal and selected journal articles, project packages, videos, CDs, websites, excursion venues, corporate materials and so on.

Each resource listed should be accompanied by approximately 150 words of description which includes:

A description of the resource including type, author, publisher etc. where appropriate
How you would use the resource on FS/FE
A critical evaluation of the resource, giving positive and negative features where appropriate
Audience it is aimed at e.g. children (lower/middle/upper primary) teachers
Where appropriate, content areas of FE it can be used with.

5. Literature Review
Choose two or 4 readings from the book of readings and discuss their content (750 words each or equivalent).

6. Using futures tools and techniques
Select a range of futures teaching tools/techniques appropriate for a primary or a secondary school. Discuss each one and suggest conditions and curriculum areas where it could be used.

Unit Content

Imagining the Future
Think-pair-share:
Imagine the year 2027.
(One half) Draw your image of what you think the world might be like (probable future) Share your ideas.
(Other half) Think about how old you will be. Write brief notes on what your own life might be like eg work, family, housing, education etc. (preferable future). Share your ideas.

The year 2017

Postmodern Images of the Future
Negative and frightening

Hi-tech
Ecological degradation
Overpopulation
Overcrowded living
Climate change/global warming

Where do these images come from?
Media, TV, magazines
Films

- The Matrix
- Minority Report
- Terminator
- Bladerunner
- Gattaca

Colonisation of the future
Lack of coherence between the personal and the global
Denial
Disempowerment (Sadar,1997).

But personal futures are different…

My future, 2030

I am still working in my own vet clinic, which I had founded in 2020. I have 2 children, a girl and a boy and I'm still looking after the girl as she is in college. My boy has become a computer technician and I have a grandchild
Year 10 girl

UNEP Youth Futures Survey
18-25 year olds
5,322 questionnaires
30 cities in 24 countries
Results showed concerned but not always educated about issues
Difference between North and South (developed/developing countries)
Hopelessness is the inability to imagine a tolerable future and is a powerful motivator for suicide
The relationship between global futures and personal well-being is mediated through hope
(Eckersley, 2002)

Reponses to global threats
Psychic numbing
Silence
Takes a heavy toll - impoverishing of emotional and sensory life
Energy diverted from creative uses
Denies resilience and imagination
Joanna Macy

Historical views of the future
Up till about 1750 – pre-modern era
future will always be the same, and is out of human hands in any case
1750-1950 – Modern era:
future is about progress through science and technology, life will certainly get better and better
1950-present – postmodern era:
future is less certain, progress less clear, life isn't necessarily getting better
(Heilbroner, 1998)

Why the need for FS?
It was the best of times, it was the worst of times, it was the age of wisdom , it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us. (Charles Dickens, *A Tale of Two Cities,* 1859).

May you live in interesting times
Chinese curse
The future of the earth for the first time in history depends on human decisions and actions
The rules that served us well in the past no longer apply in times of rapid technological, environmental and cultural change

The inability to envision dynamic images of the future will lead to the death of society
Elise Boulding

A sustainable world can never come into being if it cannot be envisioned
Donella Meadows, 1992

FS provides the means to empower people to vision and create a world that is more humane, just, peaceful and beautiful
Kapoor, 2001

What do we know about the 21st century?

- Fossils fuels will become scarcer and more expensive, extraction of oil will peak/may have already peaked
- Population will reach between 9 and 12b by 2050
- Biological extinctions will continue and biodiversity continue to decline
- Water is/will become the most scarce resource
- Food security is already critical for 80% of the world's population
- Climate change is already changing weather patterns - weather events more severe
- China and India will be the new global powers
- War/terrorism will continue into the near future

Telling the future: 4 main types:
Astrology

Prophecy
Forecasting
Futures Studies

A Brief History of Futures Studies

Strategic planning becomes standard in military/government/corporate world after WW2, the forerunner to FS
FS is very new - about 40 years old
1960's 'Towards the year 2000 (Bell)
Inventing the Future (Gabor)
Mankind 2000 (Galtung)
The Art of Conjecture (de Jouvenel)
The Year 2000 (Kahn and Wiener)
1970s The Image of the Future (Polack)
Future Shock (Toffler)
Limits to Growth (Club of Rome – Meadows et al)
The Coming of Post-Industrial Society: A Venture in Social Forecasting (Bell)
1990s consolidation of Futures work
Futures Studies becomes a distinct discipline with scholarship, practitioners and researchers.
Course taught at 3ry level but very few formal degrees in FS.

Forecasting – not the same as Futures Studies

Forecasting for planning and policy:
Predicting the future by analysing variables within a policy
Extrapolation of the present
Short term range
Aids planning for the future within a chosen set of guidelines of policy
Goal orientated
Does not make basic assumptions problematic
Aim is to appear in control of the future

Levels of Futures Work

'Pop' futures – techno-futures, 'Beyond 2000' etc. The future is technological.
Problem-orientated - dealing with problems in society within any critical analysis of underlying assumptions eg water and drought
Critical - assumptions and worldviews underlying problems facing humanity; ethics and values. Challenges to economic and political systems
Epistemological – ways in which people know the future

Scope of Futures Studies

Short term and longer range - next 100 years, 1000 years, sun death, Universe death
Open ended - examines a range of futures
Critical and interpretive dimensions – makes basic assumptions problematic
Examines how people construct the world
Abstract - uses what-if questions and scenarios
Is creative and vision-orientated

Everyone is a Futurist
We all have an inherent capacity to plan forward, anticipate and shape our future
Eg driving a car, looking forward and back, anticipating
Working towards a goal
Weighing up options
Working through scenarios

Key Concepts of FS
While 'the future' cannot be absolutely known, possible futures can be creatively explored using a range of methodologies and tools
Knowledge of FS allows us to prepare, anticipate, understand and become pro-active about creating preferred futures
Futures studies is about imagining, studying and bringing forth preferred futures

Social foresight, social learning and FIC
Unlocking the collective imagination
Exploring options and scenarios
Engaging communities in visioning and working toward the creation of preferred futures
Engaging in praxis (cycles of thought and theory into actions)

This is what most people really want
Safe community
Health, enough to eat
Clean green environment
Good friends and family
Good education
Satisfying work
World peace

Young people's preferred futures
Less emphasis on the individual, material wealth and competition
More emphasis on community, the family, the environment and cooperation
Green, more stable society
Equal distribution of wealth
Greater economic self-sufficiency
ASTEC survey 1995

Young people talking about futures
Idealism and altruism that shone through most young people when they discussed their preferred futures
They enjoyed the experience and would like more of their schooling to be like this
The valued the opportunity think of the future in more than just personal, conventional terms
ASTEC researchers

Futures Education
Critical and interpretive dimensions – makes basic assumptions problematic,
Examines how people construct the world

Abstract - uses what-if questions and scenarios
Is creative and vision-orientated
It provides for action

FS Tools and methods
Exploring probable, possible and preferable futures ('3Ps')
Futures (effects) wheel/mindmap
Y diagrams
Backcasting
Futures scenarios

4 quadrants, 4 futures: Scenario 'incasting'
For your scenario, consider what some of these might be like:

- Education
- Transport
- Family life
- Health
- Natural environment
- Work
- Governance

Not just 2 literacies
Verbal/linguistic
Numeracy
Digital
Scientific
Critical
Ecological (ecoliteracy)
Futures/foresight (Futures Intelligence Capacity)

Applying Futures tools and concepts to primary curriculum
Workshop

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