

***Transforming teachers' temporality –  
futures in curriculum practices***

***Submitted by***

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## *Statement of sources*

This thesis contains no material published elsewhere or extracted in whole or part from a thesis by which I have qualified for or been awarded another degree or diploma.

No other person's work has been used without due acknowledgement in the main text of this thesis.

This thesis has not been submitted for the award of any degree or diploma in any other tertiary institution.

All research procedures reported in this thesis received the approval of the relevant Ethics/Safety Committees (see Appendices 1, 2, 3 and 4).

Signed: ..... Date: ...../...../.....

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## *Abstract*

There is much rhetoric around the notion that schools educate for the future. This research is an interrogation of the ways in which explicit futures time perspectives exists within school practices. This study investigates the ways in which these perspectives appear within curriculum documents and do/do not influence the ways that teachers think about, and plan for, student learning. Moreover, through ongoing and supported professional learning, this research identifies the ways in which teacher practice and student learning is transformed through increased temporal consciousness.

This study has sought to identify and examine the ways in which futures and temporality influence schools and school curricula and the ways in which schools and school curricula influence teachers' perceptions and enactment of futures and temporality. It was framed within the contexts of:

- Invisible fields of study within mainstream educational practices: futures education and futures studies
- Psychological understandings about how human capacities of temporality and time perspectives develop
- Curriculum documents which demonstrate temporal bias in the ways they are traditionally oriented towards the past, yet simultaneously claim a role in educating for the future
- A school with a time machine which did not go to the future (Wooranna Park Primary School).

This research is based on an individual case study undertaken at Wooranna Park Primary School, Dandenong North, Victoria, Australia. It incorporates the perspectives and experiences of six teachers situated within the Grade 5/6 Autonomous Learning Unit [ALU]. In this study, the participant action researcher facilitated two types of targeted professional learning to increase the teachers' futures consciousness and understandings of how futures studies could occur within a learning environment. In the first instance, through directed Professional Development [PD] the teachers were introduced to the field of futures studies. Through this PD

they participated in focused activities intended to raise their futures consciousness and in turn their capacity to reflect upon their teaching through these increased futures perspectives. In the second instance, the teachers participated as a professional learning team [PLT]. With ongoing support, as a PLT the teachers collaboratively planned and reflected upon what occurred as they enacted their futures learning within their classroom practices. They also participated in cyclical action research and evaluative interviews in identifying the ways in which futures time perspectives affected their curriculum practices.

Analysis of the data in this research has been undertaken through analytic brackets which identified the ways teachers spoke about the future (discourse-in-action), in comparison with the ways in which they 'did' the future within their work (discursive practices). It is clear from this research that, prior to the commencement of this study, the teachers had given little thought to the ways in which they 'educate for the future'. Further, amongst the 25 key findings which have emerged from this research, there can be little doubt that the introduction of futures time perspectives within the classroom curriculum was transformative.

This research suggests many directions for further research, much of which has not been undertaken previously. Most of the research previously undertaken in regard to futures education has been completed by people from outside the school environment noting what should be done. In contrast, this study draws upon practitioner as well as theoretical understandings in order to explore what can occur in educating for futures.

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## *Pre-empting the thesis: an introduction*

In this thesis I critically explore the nexus between futures, temporality, the school as a learning environment and curriculum. Specifically, this thesis aims to examine the ways in which futures and temporality influence schools and school curricula and the ways in which schools and school curricula influence teachers' perceptions and enactment of futures and temporality. The interplay of these concepts is explored within the context of a particular school: Wooranna Park Primary School in North Dandenong, Victoria. This thesis is therefore a site study exploring the possibilities for futures education in school settings. This chapter presents a rationale for the study and provides an overview of the underpinning conceptual framework. The research questions that drive the study are subsequently introduced. Additionally, the genre of the thesis is explained and an outline of the chapters is presented.

This is new research, offering insights into the ways which schools consider their role in educating for the future. Previous studies which explored futures in education have typically been undertaken from outside the schools, often by people with little experience at the coalface of classroom practice. Whilst my role as researcher has occurred from outside the school, it is informed by pedagogical experience as a primary teacher over many years. This research incorporates theoretical understandings of futures discourse whilst simultaneously drawing upon the lived experiences of teachers as they participate in professional learning activities which enable them to explicitly develop futures practices within the context of their own classrooms.

This study is significant for educational and futures fields, as it explores connections between the futures engagement of learners, the futures practices of schools, and the futures initiatives of departmental curriculum documents and advisors. Traditionally, research undertaken in futures education has looked at futures dimensions in isolation. For example, previous studies have highlighted the way in which children and students view the future (Gillespie & Allport, 1955; Livingstone, 1976; Boulding, 1978). These views are commonly referred to as images of the future. Similarly, Gillespie and Allport (1955, as discussed by

Hutchinson, 1998) considered cultural influence upon someone's ability to look towards the future, set in the context of the Cold War when images of the future were predominantly bleak. More recently, the research on student images of the future has incorporated notions of education seen, for example, in David Hicks' (1996b) Global Futures Project. Similarly, Elise Boulding (Polak, 1973a; Slaughter, 1996), the World Images 2000 Project (1976, as discussed by Hutchinson, 1998) and the Ontario 2000 Project (Livingstone, 1976, as discussed by Hutchinson, 1998) emphasise the importance of a futures dimension in education. "These studies highlight the need to explore the notion of futures and associated concepts such as 'broadened social literacies', 'resources of hope' and 'young people's empowerment', rather than focusing narrowly on student attitudes via their concerns for the future" (Hutchinson, 1998, p. 135).

There is a paucity of research beyond the reporting of findings of a few isolated studies. For example, as a result of studies of students' images of the future, curriculum development remains unaffected by the need to address and critically investigate student thinking about the future through learning experiences. Similarly, whilst I have located various resources which clearly develop the case for futures education in classrooms, I have been unable to locate research which reflects the views of those involved in education regarding their role in 'future preparation'. Additionally, much of the research undertaken about constructing a notion of the future is predominantly from the 1960s and 1970s, and is therefore dated. This study addresses these gaps and explores the potential of futures education within curriculum, through the actions of teachers.

Four particular concepts are fundamental to this thesis – futures, temporality, curriculum and schools. My orientation to these four central concepts is influenced by Piaget's notion of disequilibrium (1997). This refers to an individual's inability to adapt what is known to new contexts, or alternatively where the attempted synthesis of concepts do not resonate (Good, 1995). In this context, the disequilibrium encompasses my inability to synthesise or make sense of the ways in which futures, temporality, curriculum and schools do or do not interact within the daily practices of teachers. In this thesis, I am interested in what emerges when these concepts are explicitly interwoven.

In this thesis, I will refer to what emerges in the interplay of concepts as a co-emergence, as described within enactivism. Enactivists view the world as a series of autopoietic systems<sup>1</sup> in which concepts and contexts “must be dynamically related in a network of ongoing interactions” (Maturana & Varela, 1992, p. 62). Within these interactions, the components are continually changing, whilst at the same time allowing for the continuation of interactions so that the systems continue to exist. Arising from these interactions are new interactions, new components and new ways of knowing (Begg, 2002). These new aspects are referred to as evidence of co-emergence (Davis, Sumara & Luce-Kapler, 2000). This thesis is interested in examining the interplay of four central concepts (futures, temporality, curriculum and schools) and the resultant co-emergences when a group of teachers within the context of a particular school reflect on their perceptions and understandings of futures education and attempt to transform their teaching practice through the enactment of explicit futures time perspectives within their school. These four central concepts are shown in Figure 1. I represent them as discrete, yet connected. The single lines which connect them are over-simplified, yet still represent the connectedness which exists between the concepts.

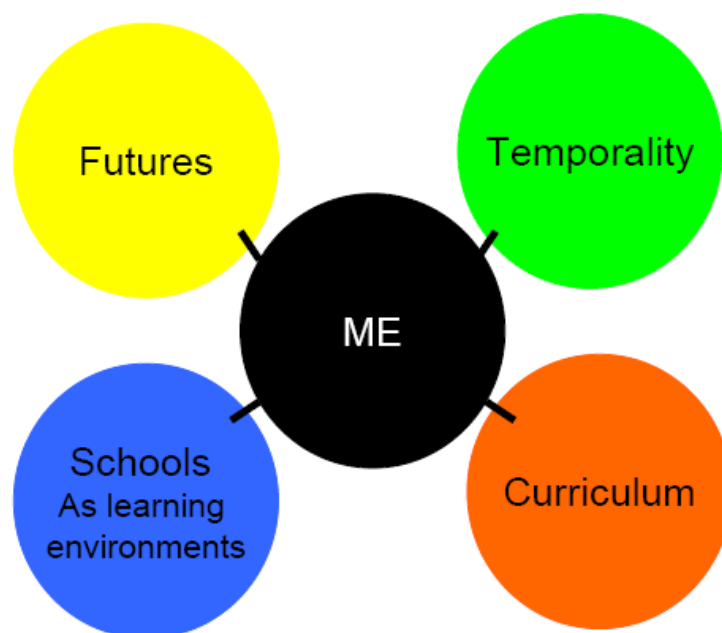


Figure 1 – The four central concepts

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<sup>1</sup> Autopoietic systems will be broadly defined on page 102.

This study aims to further explore the nature of these complex interwoven connections. For the purpose of this introduction, I am simply presenting the key concepts which will be explored through this thesis. As will become apparent, I suggest that the current interplay between them presents some macro co-emergences. In later chapters, micro co-emergences through the complex interplay of further concepts and contexts will be presented through a series of diagrams and further theorised. Initially, I will explain these concepts.

### ***An overview of the four central concepts***

*Futures:* The first core concept is futures. In this thesis, I suggest that the image of the future currently held by most educational policy makers, principals and teachers is limited, singular and informed by outside forces and agencies. There are similar claims made by others (see for example Hicks, 2008; Milojevic, 2005), but there is a paucity of empirical research evidencing this claim. The notion of a singular future is contrary to constructs of futures studies (to be discussed in Chapter 1) which promotes the idea that there are multiplicities of future scenarios (Börjeson et al., 2006) which can, and should, be considered in responding to the challenges of unknown and uncertain times. Further, the premise of futures studies is that by engaging in explicit futures thinking, we increase the agency of individuals and collectives to contribute to possible, probable and preferable scenarios (Slaughter, 2004b). This is not aligned to the future of education, but rather in increasing futures capacities within educators and learners through education. These are temporal capacities, to think about the future as one does about the past. This ability is often referred to as a capacity of foresight (Hayward, 2004).

*Temporality:* The second concept – temporality – is a human ability to think about and conceptualise time (Fraser, 1992). Time perspectives are the different reference frames for what point in time we are discussing, in past, present and future (McInerney, 2004). Temporal orientation is the specific thinking towards one of those frames being undertaken at any time (Holman & Cohen Silver, 1998). From soon after birth, people are developing their conscientisation of time and their capacities to shift their temporal thinking between different time perspectives (Bell, 1996; Friedman, 1982a). In this thesis, I will name this capacity as *temporal mobility*. Temporal bias is what occurs when our human capacity is undeveloped, or our time perspectives are directed towards one frame (Zimbardo & Boyd, 1999).



*Curriculum*: The third key concept – curriculum – is a highly contested term within academia and schools, as it is understood by different people to mean different things. In some contexts it refers to the planned learning opportunities which are constructed for learners within a particular site (ACT Department of Education and Training, 2008). Elsewhere this is referred to as the formal or written curriculum (Bentley, 2000). The written curriculum does not account for the unplanned learning responses and activities which emerge through the enactment of the written curriculum. It mainly reflects content which will be taught and learned, and is often governed by requisite curriculum documents or guidelines from the state or nation state. In this way, curriculum documents may be regarded as statements of intended learning (Davis & Sumara, 2003). In this thesis, I am interested in the written or intended curriculum and the ways in which a specific set of teachers enact this within a specific learning environment.

In Australia, responsibility for the construction of curriculum is vested in the states and territories, hence curriculum structures and foci vary across jurisdictions, but the federal government has increasingly sought to influence state education policy (Harris, 2002, p. 20). At the time of writing, there is a push towards the generation and implementation of a National Curriculum (National Curriculum Board, 2009; Reid, 2005). Australian curriculum guidelines are usually organised around traditional learning disciplines such as Maths, English, Science, History, Geography, Economics, Visual Arts, Drama, Dance, Media and Languages Other Than English (LOTE), to name but a few. Attached to the content to be developed, there are usually learning outcomes or measurable learning standards.

*Schools*: The final concept is the school. In the first instance, the school is recognised as an organisation which has been created, and is united, for the specific purpose of education (Dewey, 1903). Its organisation is administrative and pedagogical. The administration of a school ensures that fiscal resources are available and that its economic viability is sustainable. The pedagogical management occurs within structuring of learning groups, teaching teams, as well as documentation (Heck & Hallinger, 2005). In the second instance, the school is also perceived as the buildings and grounds in which education and learning occurs. Thirdly, schools are deeply ingrained as a custom (Goodlad, 1984) or traditional place, and almost as a rite of passage in Australian society and culture. Much cultural, social and economic capital is strongly linked to

this tradition of schooling (Bourdieu, 1986), and specifically how far through the system one travels, or in which setting education has occurred.

In this thesis, I am particularly interested in the school as a place of learning. In this, I acknowledge the various factors which will affect the practices of teachers and the learning of students. However, I am specifically interested in the ways that learning theories, represented through teacher practice and planning, and the enacted curriculum will come to being within the environment intended for learning – the school.

### ***Identifying ME in this thesis in my thinking at the outset***

As indicated in Figure 1, my role as teacher and researcher is central to this thesis. By overtly positioning myself within the research project and indeed within this text, I am reminding the reader that this research has arisen as a result of my inability to equilibrate these core concepts. At the centre of the four key concepts framing this study is ME. Since becoming a teacher in the early 1990s, I have progressively become more conscious of the different aspects of my own life and learning, and a need to reconcile or integrate each of them. I will further elucidate my role in this research project and thesis in Chapter 1.

The aim of this thesis is to explore the synthesis and interplay of the central concepts – futures, temporality, curriculum and schools – to identify and explore the resultant co-emergences and to examine how these co-emergences shape teachers' perceptions and enactment of futures education in their curriculum practice. It is through these co-emergences that I am able to theorise and enact the possibilities of futures perspectives within the everyday practices of a school, through the interactions of teachers, students and their learning.

Alongside the theorising, I will engage in a specific context: a primary school in the south-eastern suburbs of Melbourne, in a socio-economically challenged population. Within this context, I focus on the educational perspectives and curriculum practices of six teachers who regularly meet to collaboratively plan and teach a group of 10-12 year old students (Grades 5-6). Interestingly, for this study, this school is also the site of a 'time machine'. At the outset of this

project, the machine is unable to 'travel to the future'. I suggest that it is metaphorically representative of the ways in which schools lack directionality and movement in educational travels to the future.

Arising from these central concepts and co-emergences, four specific research questions guide this study:

- What is the role of a school in preparing students for their future?
- How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?
- How can we empower and develop teachers' capacities to develop futures perspectives within pedagogy and curriculum?
- How do futures perspectives transform teacher practice in learning environments?

This research is new and important because it has not been previously attempted. Schools claim to have a role in educating for the future. Indeed, there have been studies investigating images of the future. There is ongoing discourse about curriculum and the ways in which learning occurs. Further, there have been numerous publications theorising the benefits of futures in curriculum. What is lacking from all of these studies is research about what actually occurs when teachers become more reflective about the role of the school in educating for the future, and the ways in which these teachers think about the future, as well as the ways in which they are enabled to enact explicit futures understandings within classroom practices. Simply stated, this thesis goes beyond the rhetoric about futures in schools by providing empirical data describing what will later be referred to as temporally balanced approaches.

### ***Grounding my writing as academic text***

I have struggled with how to represent ontologies, epistemologies, data and the many contributing voices to this work, giving them the required attention whilst still explicitly making links between those elements described in Chapter 1. This struggle is what Tierney (2002) and Denzin and Lincoln (2000b) have nominated as a 'crisis of representation'. The crisis in

representation of this research arises from my discomfort in representing complexities within data through the writing of a traditional doctoral thesis texts (such as those described in Burns, 1990; Creswell, 2002; Evans, 1995; Wiersma, 1995). These works are often based within a scientific paradigm which cannot easily structure my work.

I will represent my research in this thesis in similar ways to those employed during the project. This means using an enactivist<sup>2</sup> and participatory mode approach that encourages “ethnographers to demonstrate both their observational skills and their social participation by producing radically different forms of writing” (Tedlock, 2003, p. 181). And whilst I do not consider this thesis to be radical in its representation, it is indeed what Tedlock (2003) and Denzin and Lincoln (2000a) refer to as a ‘blurred genre’. I also refer to it as a ‘problematised narrative’. It is problematic in that it seeks to represent the relationships between the elements described in the first section, that is, me and my research interests, the possibilities of futures education, and an exemplar of a school with a time machine that does not go to the future. It is narrative as “it attends to the temporal dimension of human existence and shapes events into a unity” in creating meaning (Tedlock, 2003, p. 190). Similarly, it:

displays the goals and intentions of human actors ... makes individuals, cultures, societies, and historical epochs comprehensible as wholes; humanizes time; and it allows us to contemplate the effects of our actions and to alter the directions of our lives (Richardson, 1997, p. 27).

Below I discuss the writing style I have employed throughout the thesis. This is important as my writing style encompasses several unique structural elements that require some familiarisation. This thesis is a multivocal text. The strategy of multivocality consists of the delineation of different voices in texts (Amos Hatch & Barclay-McLaughlin, 2006). In this thesis, the voices contained apart from my own are those from the literature, the site of research, and those which emerge from document analysis. This strategy is based on the discourse analytical premise concerning intertextuality, which consists of “the premise that all utterances inevitably draw on, incorporate or challenge earlier utterances” (Jorgensen & Phillips, 2002, p. 115). Intertextuality always involves the reproduction and transformation of different voices in new articulations, producing multivocal texts.

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<sup>2</sup> Enactivist theory will be examined later in this thesis. In short, it is a learning theory in which knowledge is produced through intended and unintended interactions.

In this thesis, there are multiple articulations of many voices, especially my own. As well as the main text, I will use a series of footnotes, writer's notes and interjections to convey complementary and competing views to the reader. The writer's notes provide extra justifications and insights to theoretical points which have been made. The footnotes are used in a conventional mode, giving extra contextual information for an 'outsider' to my thinking and experiences. Other articulations are 'Interjections'. These are intended to provide insight into the ways in which the thesis is progressing or the ways that the author's thinking is developing. In some cases, these interjections are extra pieces of information which I consider significant to share with the reader, differentiated from the main text. It is the choice of the reader in regard to the various voices with which you will interact.

To this end, I make use of Tierney's (2002) ideas which describe the shift in qualitative methods away from 'static' narrative forms to more 'dynamic' representations which explicitly locate the author in the text. Tierney acknowledges a "corresponding movement towards texts that use the active voice, utilize the first person, and aim for a more dramatic retelling of events" (p. 385). Similarly, as Tedlock (2003) suggests, narratives of women's lives "are often neither chronological nor progressive but disjointed, fragmentary, or organized into self-sustained units rather than connecting chapters" (p. 186).

### ***Moving beyond the introduction***

In this introduction, I have outlined four central concepts and four key questions which drive this research. In later chapters, I will explore each concept in detail. In Chapter 1, I will examine my role in this research and provide an overview of literature which describes futures studies and futures education. In Chapter 2, I will outline theories of temporality and time perspectives. In this chapter, I also consider curriculum, identifying the ways in which futures time perspectives are explicitly or implicitly present. In Chapter 3 I explore notions of the school as a place of learning. In particular I will examine the ways that teachers and students learn, with interest in those learning theories contribute to this study. Chapter 4 outlines the research

methodologies which underpin this research design. It also describes the array of data collection techniques employed, as well as the modes of analysis which have been undertaken.

Chapters 5 and 6 present significant data which has been developed through this project. Chapter 5 focuses on the teachers' thinking about the future, and the subsequent professional development which was undertaken. Chapter 6 recalls the ways in which they performed as a professional learning team to engage in futures curriculum development and enactment. In Chapter 7, I revisit the theorising commenced in this introduction in considering what emerges between the central concepts explored within this study. I draw upon the data described in the previous chapter, as well as the literature, to respond to the key questions posed within the research. Chapter 8, whilst providing concluding comments, suggests some possibilities for research and curriculum practice with regard to futures time perspectives.

## ***Chapter 1 – In the beginning: an interest in futures***

The beginning refers to the journey on which I have embarked in coming to write this thesis. This chapter further explores one of the four key concepts driving this thesis – that of ‘futures’. The purpose of this chapter is multiple. First, it introduces the reader to the contexts from which this research project and thesis emerged: ME and my interest and growing expertise in futures education. Second, it critically reviews literature pertinent to futures education. Third, and most importantly, this chapter clearly establishes the relevance and importance of futures education to teacher and student learning. It therefore provides greater insight into the rationale underlying the study which explores the possibilities of developing explicit futures perspectives within the everyday practices of schools, but specifically through the enacted curriculum.

### ***Introducing me***

#### ***Writer’s note***

A question asked of me when defending my research proposal was why I had to be included in this thesis. Tedlock (2003, p. 181) argues that “we cannot study the social world without being a part of it”. Developing this argument further, if I consider myself as part of the ‘study’, then I must be reflected within the representation of my research. As Richardson (1997, p. 19) argues, “by objectifying ourselves out of existence, we void our own experiences. We separate our humanity from our work. We create the conditions of our alienation”.

In the beginning there was me. This narrative begins in 1993 three years into my career as a primary teacher in Victorian schools. As a graduate teacher I was surprised by the frequent changes to various aspects of education, but especially with regard to curriculum. Australia’s curriculum documents are constantly being reviewed, and new directions are generated at national and local levels. I had spent my pre-service education and first year as a teacher coming

to know and being guided by my state Ministry of Education's Frameworks<sup>3</sup> documents (Ministry of Education (Office of Schools Administration) Victoria, 1989; Ministry of Education (Schools Division) Victoria, 1987). Within the next two years, I was introduced to the National Statements and Profiles<sup>4</sup> (Department of Training and Education Coordination New South Wales, 1997) which would supersede those earlier documents, and differed in a number of ways. Whereas the first documents provided broad guidelines to teaching in the specific content areas, the newer ones introduced tools which would focus on student achievement and how this could be recorded across time. The reshuffling of curriculum documents over time has often made me reflect upon the purpose of education, but in this particular instance there were two things which happened simultaneously. These events appealed to, and stimulated, my thinking process about the functional role of education and my role as a teacher within that wider context.

### ***My introduction to 'futures'***

The first event was the completion of a core unit for my Master of Education. This engaged students in thinking about 'Educating for the Future'. The facilitators urged us to develop a temporally balanced<sup>5</sup> perspective in our roles as teachers, responsible for planning and implementing learning opportunities in a variety of environments. The teachers taking this unit were from a different background, or culture, and engaged with the unit content in a variety of ways for multiple purposes. In this unit I encountered the writing of Richard Slaughter (see, for example 1996) who became a reference point for later study. In assessment tasks, I investigated the practical applications of the futures field through the readings of Hicks (1994) and Page (1996), challenging me to change the way I viewed education and to reassess it using the lenses of the possibilities and multiplicities of futures scenarios (Neilson & Stouffer, 2005).

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<sup>3</sup> The ten Frameworks documents were: The school curriculum and organization framework, P-12: a curriculum for all; The arts framework, P-10: for total growth; The commerce framework, P-10: tomorrow's skills for young Australians; The English language framework, P-10: language for living; The LOTE framework, P-10: talking with the world; The mathematics framework, P-10: a forward look; The personal development framework, P-10: deciding and acting in everyday life; The science framework, P-10: science for every student; The social education framework, P-10: effective participation in society; and The technology studies framework, P-10: thinking, making, doing.

<sup>4</sup> National Statements and profiles are available for the eight key learning areas: English, Mathematics, Science, Technology, LOTE (Languages Other Than English), HPE (Health and Physical Education), SOSE (Studies of Society and Environment) and the Arts.

<sup>5</sup> Temporality and time perspectives will be discussed in Chapter 2. I will look at the work of Zimbardo and Boyd (1999) who refer to having a balanced time orientation, or a mental framework that allows flexibility in the temporal orientation a person operates within, depending upon contexts, resources and personal and social assessments.



Personally, I felt the need to reflect on my own engagement with ‘the future’ at various stages of my life. There were many nexus points in which I had ‘uncritically’ ventured along roads to the educational pathway which I would ultimately follow. As a young child, I saw my future through the eyes of the job I wanted to do. As a young adolescent, I identified my future through the eyes of what I didn’t want to be. As a young adult, I lost sight of planning for a future and was interactive only with my immediate present. Entering adulthood and experiencing a range of challenging experiences, including life-threatening injuries as a result of a car accident and, ten years later, the sudden death of my husband, my present and possible futures suddenly seemed uncertain. My expectations of ‘what would be’ were constantly confronted by realities which changed ‘what was’. For example, the death of my husband changed the way I looked at the same future I had assumed would include shared parenting, shared dreams, and the ongoing development of our friendship.

The opportunity to make sense of multiple futures, not only within my personal realm but within the actions of my students, began to emerge alongside my understanding of futures education. Futures education draws upon/is founded on a rich multidisciplinary field of theory and methodology. The futures field is the collaboration of knowledge, tools and concepts developed through futures studies. Futures studies involves systematic and explicit thinking about alternate futures. It aims to:

Demystify the future, to make possibilities for the future more known to us, and to increase human control over the future. In the broadest sense, futurists hope to inform people’s expectations of the future and to help make their efforts to shape the future to their worthy values and purposes more effective. In some sense, then, futures studies helps us to ‘prepare for the unpredictable’ (Bell, 1996, p. 2).

As my own personal learning journey was challenged and complemented by my engagement with the futures field, my knowledge of the available futures education tools and concepts grew. Moreover, my awareness and understanding of how futures education could be enacted in schools was stimulated by my engagement in classrooms putting these theories into practice (Gidley, Bateman & Smith, 2004). Having completed my Masters course, I returned to classroom life with a different perspective on teaching and learning and adopted some futures dimension within the curriculum.

The addition of futures education as a dimension to learning was not to be without some struggles. Changing government agendas and social pressures meant that teachers were bombarded by ‘new’ and ‘important’ things to add to the curriculum, The tension between effective and innovative teaching was often burdened with greater complexity in planning and in monitoring the learning achievement. To many, futures education seemed like another one of those new things or as an area which is largely unknown – just too hard! Developing transformative curriculum which contained explicit futures education stimulated me to undertake this doctorate, and to explore the ‘real’ relevance and possibilities for other schools.

In the next section, I will describe the field<sup>6</sup> from which futures education draws its methods and knowledge bases, beginning with a brief introduction to futures studies and how it has developed. Next, I summarise the purposes of futures studies. I then describe dominant approaches or levels of engagement with futures studies, before concluding with some considerations regarding critiques or challenges to the field. I begin with an exposition of futures studies, as it provides the fundamental understandings which are adapted for use in classrooms.

### ***Futures studies***

For Nandy (as described by Slaughter, 2002a), futures studies is an attempt to widen human choices:

by re-conceptualising political, social and cultural ends; by identifying and merging or previously ignored social pathologies that have to be understood, contained or transcended; and by linking up the facts of different politics and society is through envisioning their common fears and hopes (p. 505).

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<sup>6</sup> The term ‘field’ is problematic for Marien (2002). He suggests that future studies, as it is, is not a field, but a fuzzy ‘multifield’. “The so-called field has always been assumed to be a distinct entity, with no attention paid to the immediate periphery, or to how the field relates to other fields of learning” (Marien, 2002, p. 274). I will use ‘field’, ‘dimension’, ‘domain’ and ‘area’ interchangeably to represent the body of literature and research which relates to the areas encompassed within futures studies.

This is what Bell (1996, p. 73) refers to as “prospective thinking”.<sup>7</sup> Through prospective thinking, futurists aim to contribute to the well-being of presently living people and of those who will live as future generations, who are voiceless in the present. Guiding questions contributing to futures thinking consider the procedures utilised for thinking about the future. These include: preparations necessary for enacting plans and projects that arise from futures thinking; the prospects of success in shaping, or adapting to, emerging futures; alternative courses of actions for different purposes; consequences of decision making and actions; and a critical engagement with how the future is, and ought to be, perceived.

Central to this discussion are time perspectives. The concepts of temporality and time perspectives are discussed in depth in Chapter 2; however, there are some aspects which will be briefly addressed with regard to futures studies. Each culture has its own perceptions about time and the future. Bell (1996) suggests that “time, like space, is an inevitable aspect of individual experience and social interaction” and that, in one way or another, there is always the notion of past, present and future, and a sense of the dynamic nature, and movement, of time. These time perspectives alert us to important assumptions of futures studies, aptly summarised by Masini (2006):

The future is the only temporal area over which people have power: the past and present are always beyond control. These areas may offer knowledge, but no more; they are the facts that can be utilised for futures, which in their turn are built by human will – meaning that the future emerges from choice among the various models of reality that humans wish to build (p. 1165).

As more widely and deeply explored by Bell (2005b), assumptions which underpin all futures studies are numerous. The first is that time moves unidirectionally and irreversibly from the past. Another highlights the continuities and discontinuities which exist within the flow of time, that “not everything that will exist has existed before, or does exist now”, thus the future may contain things which have never existed before. The assumption that futures thinking is essential for human action differentiates between our reactive human capacities and our proactive capacities, and it is these capacities which move our actions beyond the present and reactive moment. Perhaps, the most significant assumption is that the future is not

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<sup>7</sup> The term ‘prospective’, as it began to be used in Europe, referred to making decisions based not only on immediate needs but also long-term consequences (Masini, 2006).

predetermined, but rather it is open and future outcomes can be influenced by individual and collective action, and by the choices people make: “in making one’s way in the world, the only really useful knowledge is knowledge of the future. This assumption follows from the fact that the past no longer exists: it is closed” (Bell, 2005a).

### ***An interjection***

One of the major critiques of futures studies which will be addressed a number of times throughout this chapter is the privileging of the Western construct of time. The Western linear model of time acknowledges past and future as categories ordered in relation to a continually shifting reference point, which is the present. The past and future are exclusive, in that they neither overlap nor interchange. However, Harner (1982, p. 143) adds that “even though the temporal dimensions of past and future are conceptually distinct, the events we experience are not completely independent of each other”. An example of this temporal interaction is the use of past events to influence present decisions and to make future predictions. Similarly, cognitive specialists such as Fraisse (1982), Piaget (1969), Harner (1982) and Friedman (1982a) all describe a young child’s first understanding of the future as a recurrence of the past.

In short, there are seven distinctions which categorise the Western model of time:

- Temporal sequencing of two events in relation to one another
- Past and future as mutually exclusive categories
- The duality of the present as both a reference point and an expandable category of experience itself
- The shifting boundaries between the past and present as well as between the present and the future
- The continually changing nature of the present and the shifting contents of each of the temporal categories, past, present, and future
- The existence of three times, as the conceptual system intersects the linguistic system – event time, speech time and reference time
- The need to decentre and consider a reference time other than one’s own immediate present (described by Harner, 1982).

### ***The origins of futures studies***

Historically, in the Republic of Plato, the vision of a future society is one based on justice; St Augustine's City of God is based on love and pitted against the city of man based on pride; the New Atlantis of Francis Bacon reflects a society based on human greatness in which communal ownership of goods is central and the individual is subordinate to the community (Masini, 2006). Sir Thomas More's Utopia reflects an ideal world of unison between people and a strong connectedness with natural systems, and has since spurred thinking about dystopias. All these visions of a desirable future are in some way embedded in the social structures from which they emerge and linked to the needs and hopes of the people living at the time.

The Great Depression of the 1930s contributed to the belief that something had gone wrong with the economy, and that something should be done about it through governmental intervention. Bertrand de Jouvenel (1948, 1951, 1967, 2002) and others in Europe began addressing the philosophical and sociological dimensions of futures studies, stressing the importance of forecasting alternative possibilities, considering in detail the long-term consequences of current policies and actions. Around World War II, the United States attempted to develop systems in order to anticipate events through scientific analysis of trends and indicators of change. This initiated the technological forecasting component of modern futures studies (Bell, 2005b; Masini, 1999, 2006; Slaughter, 1998). The variety of futurists in the United States and Canada, from both historic and contemporary perspectives, may be tentatively divided into the categories of technological, sociological and global futures.

Futures studies has simultaneously become strongly affiliated with political and social movements. In the 1950s, Gaston Berger, enacting his growing interest in the study of the future, founded a centre for prospective studies (Bell, 1996), later known also as futures studies (Gaspar & Novaky, 2002). With time, it became apparent that foresight was important not only in order to know where one was going and how, but also to choose where one wanted to go (Hayward, 2004). Hence, more recently, futures studies has become increasingly linked to philosophic choices, to choices of principle and to choices of how one is to regard reality, people

and society. Some futurists<sup>8</sup> credit the writing of Fred Polak (1948, 1951, 1957, 1973a, 1973b, 1983), who theorised futures research from an epistemological point of view, with an increasing awareness of political and social agencies. His approach was that the future is based on images of the future that are related to historical situations, belief and desires.

Bell (2005b) and Gaspar and Novaky (2002) suggest that the futures field is still young and developing, though some writers fear that it is too fragmented to be called a ‘field’ at all. It is diverse in terms of its subject matter and in the background of its practitioners. It has been suggested that futures studies is in a transition paradox: where there is a demand for renewal of futures methodologies, and simultaneously, a need for central pooling of those methodologies and tools, in use. Furthermore, Bell (2005a, p. 75) suggests a challenge to furthering the field: “for any field of inquiry to flourish it must have cadres of new recruits, new personnel to carry on its activities”. Today, futurists have formed themselves into loose communities of full-time scholars and professionals. Their activities have been institutionalised within hundreds of organisations such as companies, government agencies, centres, institutes, universities and professional societies (Bell, 2005b; Gaspar & Novaky, 2002). These include the Club of Rome,<sup>9</sup> the International Futuribles Association of France,<sup>10</sup> and two other futures groups of international interest from Europe: Mankind 2000<sup>11</sup> and the World Futures Studies Federation (WFSF)<sup>12</sup> (Masini, 1999). Another important group, the World Future Society,<sup>13</sup> originated in the United States, and subsequently, different futures -oriented groups internationally, such as Nodo Futuro Mexico, the Nihon Mirai Gakkai (Japan Society of Future Research)<sup>14</sup> and the

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<sup>8</sup> “Futurists aim to teach the insights and tools of futures studies so that both ordinary people and key decision makers will make more effective decisions, thereby improving their individual lives as well as the public good. Futurists aim to educate, too, as they attempt to promote greater futures consciousness among individual throughout society and to futurize the thinking of other people, including professionals” (Bell, 2005b, p. 75). At the AusForesight 2006 conference, the keynote speaker asked participants to raise their hands if they considered themselves a futurist. Of the 200 people in the room, at least 75 per cent raised their hands. I did not, for although I am writing my thesis and drawing from futures studies, I do not consider myself a futurist. Rather, I refer to myself as a futures educator, with a specific agenda, which is to develop futures thinking for and within educational practice.

<sup>9</sup> <http://www.clubofrome.org/>

<sup>10</sup> <http://www.futuribles.com/home.html>

<sup>11</sup> International Future Research Conference, 1969

<sup>12</sup> <http://www.wfsf.org/>

<sup>13</sup> <http://www.wfs.org/>

<sup>14</sup> <http://imcbook.net/JDPApro0/JPY82622.HTM>

Visionscentret Framtidsbygget™ (Sweden)<sup>15</sup> have joined the movement. In Australia, the prominent group is the Futures Foundation.<sup>16</sup>

Insofar as this field is growing, through the literature it is apparent that there are various ways in which futures studies is implemented and understood. In the following section, I will highlight approaches to futures studies, and the different levels of engagement. This is important in this study, as in taking futures studies to the classroom I want to go beyond the superficial layers in which the future can be addressed through curriculum. Moreover, it is important to draw upon a number of approaches in order to provide teachers with choices in which they can own and develop futures based pedagogies within their classrooms.

### ***Levels of engagement with futures studies***

Classical futures research aims to reduce the risk and unexpectedness of the future and to outline the possibilities of change and development (Bell, 2005b). It is to be considered be scientific (Masini, 2006), based on a universal-modernist conception, and connected to an industrialist paradigm in which the natural world could be controlled by humans. The exploration of the most probable future is based on the assumption that, provided the laws of reality are perceived in the right way, correct predictions can be made. A classical futures approach also followed that only one type of future could be outlined, because of monocultural patterns (Gaspar & Novaky, 2002, p. 372). Clearly, as our worldview changes, this singular view of the future is not adequate.

As events and phenomena have become more complex in our world, so too the alternative nature of the future has grown stronger. New approaches and methods address more subjective techniques, as well as complexity models which embrace empirical, interpretive, critical theory, causal layered analysis and action learning. Thus, futures studies no longer strives to be as classically scientific (Bell, 2005b), nor singular in its outlook. Given these multiplicities and complexities, it is important to consider the various approaches which are employed.

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<sup>15</sup> [www.framtidsbygget.se/E/index.htm](http://www.framtidsbygget.se/E/index.htm)

<sup>16</sup> [www.futuresfoundation.org.au/](http://www.futuresfoundation.org.au/)

***Different approaches to futures studies***

Futures studies involves the possibility of looking into the future at various levels, in order to better understand the changing interrelations between people, society and the environment (Masini, 2006). As there are many references to levels of engagement within futures studies, and the various approaches across futures studies, I have developed Table 1 to try and conceptualise the major approaches and levels (Masini, 2006; Slaughter, 2002b).

**Table 1 – Approaches to and levels of futures thinking**

<b>Masini’s 3 approaches to futures studies<sup>17</sup> (2006)</b>		<b>Slaughter’s 3 levels of futures studies (2002b)</b>	
Approach 1	Emerges as response to observable rapid change, and need to know about directions of the world. Draws upon data from past and present to develop possibilities.	Pop futures	Referred to as “trite, superficial work” (p. 495). Draws upon media and social culture to trivialise futures thinking <sup>18</sup> and establish trends. Continuity is largely overlooked. Strong emphasis on science and technology.
Approach 2	Linked to preferable, desirable utopian societies. Future is built on the basis of something which is desirable or a need for change.	Problem-oriented futures	Problems are central focus of research and exploration of alternatives. Considers responses of societies and organisations to near-term futures. About practical matters and innovation. Central to ‘mainstream’ futures work.
Approach 3	Project based futures, based on a synthesis of the previous approaches. Projects seek to change reality, drawing upon thinking and empirical data. Approach based on knowledge of possible and probable, as well as preferable, scenarios.	Critical and epistemo-logical futures	“Utilises tools ... to interrogate, disrupt and protect symbolic foundations of social life, and discern grounds of new or renewed options” (p. 495). Trends of interest take place at the level of underlying values, perceptions, traditions etc.

Masini’s (2006) three levels reflect three different philosophical approaches to the future. The first emerges from the need to face rapid change and to gain insight into directions the world is going. It consists of the data of the past and present which point the way towards what is possible and help identify what is probable among what is possible. It is based on the proposition that something is changing (Masini, 1999). The second approach is linked to utopias, or desirable societies. In this approach, the future is built on the basis of something we wish to

<sup>17</sup> Masini also includes approaches through images of the future.

<sup>18</sup> Examples of this are popular animations and television shows, such as *The Jetsons* and *Futurama*.



happen. Whilst the possible and the probable future scenarios are sought, the second approach seeks a preferable or desirable notion of the future. This is based on the belief that something must be changed (Masini, 1999).

The third approach to futures studies is a synthesis of the first and second approaches. It is on the level at which people think about the future in terms of projects, in that they seek to undertake projects that will change reality, according to specific indications directed by utopias, by social ideals, by models and by visions. Simultaneously this approach takes into account empirical data about trends in the past and conditions in the present. It is based on a knowledge of possibilities and probabilities, as well as a vision of desirables, on models and on ideals (Masini, 1999).

There are many similarities or overlaps between Masini's approaches and Slaughter's three levels of futures studies. Whereas Masini talks about the first approach, which responds to a changing world, Slaughter describes pop futures. Pop futures is what can be observed within the world, especially within media. It is engagement with futures thinking at its most superficial level. It is summed up by statements such as how science and technology are improving our lives and creating the future: "It is eminently marketable, but largely bereft of theory or insight" (Slaughter, 2004b). In pop futures, continuity is largely overlooked. The key trends are mainly those revealed by of received wisdom, entertainment, media, marketing and obvious empirical evidence. The main dynamic created is that of fairly obvious external trends, with a strong emphasis on science and technology. Change is a problematic concept, which is both overstated and under-conceptualised. It is restricted to taken-for-granted overviews and snapshots. Slaughter critiques this level as lacking attention to underlying assumptions, containing little critique or present and future, and having a strongly instrumentalist outlook as well as a very thin and unproductive view of the future (Slaughter, 2002a).

For Slaughter (2002a), problem-oriented futures approaches, by contrast, consider the ways in which societies and organisations are responding, or should respond, to the challenge of the near-term future. Problem-oriented futures emerge most typically in environmental legislation and business innovations. This mode of futures studies employs a deeper appreciation of the

complexity of societies and of social change. It involves the careful and sustained study of social or economic phenomena, and the framing of proposals to ameliorate perceived problems. Problems are a central focus, and a detailed analysis of problem area and a broad-ranging exploration of possible solutions, including learning social innovations, are sought. The forward view is generated through the use of appropriate methodologies such as environmental scanning and the analysis of trends. “Sources of inspiration and hope lie in the creation of well-founded responses to well-studied problems” (Slaughter, 2002a, p. 498). Five general themes or observations that emerge from this work are sustainability, economic growth, education, technology and globalisation.

A limitation of problem-oriented futures work identified by both Slaughter (2002b) and Marien (2002) is that the aspiration to engage in futures and global thinking is not matched by peoples’ capacities to do so. The dependence of empirical and social analysis on underlying frameworks of meaning and value is seldom acknowledged. The centrality of interpretation, of the dynamic of deconstruction and reconstruction, of the social construction of reality are all overlooked. “The shallowness of much mainstream futures work means that its offerings cannot escape mundane representations of the world and are hence inadequate to the tasks at hand” (Slaughter, 2002a, p. 503).

To address this, critical and epistemological futures studies probe beneath the surface of social life and discern the deeper processes of meaning-making. This level utilises tools and insights that have emerged within the humanities and which allow the interrogation, disruption and, at times, protection of the symbolic foundations of social life, and hence articulate the grounds of new or renewed options:

Properly understood, the deconstructive and reconstructive aspect of high-quality futures work balance each other in a productive fusion of methods as methodological futures work goes deeper still. Hence, philosophy, ontology, macro history, the study of time, cosmology etc. are all relevant at the steep level. It is here that the deepest and, perhaps, the most powerful forms of futures inquiry can take place (Slaughter, 2002a, p. 496).

Critical and epistemological futures utilise postmodern and poststructural analysis and critique to consider the layers of opinion and discern the foundations of social life: the social construction of reality. Many of these studies are based upon the assumption that nothing

remains the same, and that everything is in constant movement and part of changes, or discontinuities. The studies of alternate futures scenarios can be problematised, re-framed, re-conceptualised, deconstructed and, on the other hand, re-chosen, re-conceptualised etc. The key trends at this level are not those of an objective and empirical world, but rather subjective, intuitive values, perceptions, traditions and reflections.

Change processes are seen as highly volatile, contestant and always powerfully revealing of underlying factors and motivations (Henderson, 1996; Jones, 1998; Slaughter & Inayatullah, 2000). These include social interests, power relations, definitional power and a wide range of civilisational events. Problems always refer back to the social milieu in which they were framed, and are formulated in ways that reflect the constitutive interests of particular groups. Problems, like perceptions and meanings, are inevitably situated and hence are located within a whole host of presuppositions which are invisible until they are critically reflected upon by human minds. Following acts of critique and deconstruction are the grounds of recovery, the renewal of meaning and purpose:

The purpose of futures work at this level is to open out productive mind-spaces, to design in-depth social innovations and prefigure more advanced stages of civilised life. Inherent in this process are many powerful sources of inspiration and hope (Slaughter, 2002a, p. 503).

Unlike mere 'prediction', a comparative analysis of alternatives completes the forecasting activity and forecasting itself, and helps users to gain a better understanding of the differences among them. It can also mean a basis for formulating ways and conditions of changing from one alternative to another. The whole process of futures studies from the objectives to the possible options are among means and ways of accomplishing them. Alternatives can be assigned to tendencies as well as the turning points (Gaspar & Novaky, 2002).

Gough (1990) comments that critical futures are one of the most rewarding approaches to the exploration of futures in education:

by way of critical reflection on the inherited meanings, traditions, values, paradigms, metaphors, concepts and guiding images of various kinds that are embedded in everyday language (and which mediate our interpretations of past and present experience and alternate anticipations of future possibilities) (p. 308).

Such a critique permits deliberation among workers in education in addressing utilities about the validity of emerging meanings and facilitates the search for new and renewed understandings. This then leads to a discussion about the purposes of futures studies in order to consider possible forms of such understandings.

### ***Purposes of futures studies***

Futures studies is located across many disciplines. As a result, information is published broadly, and it is difficult to get a concise overview of the dominant principles and purposes which are addressed. In this section, I will utilise Bell's nine major tasks of futures studies to outline the main foci of study of multiple futures perspectives, as well as providing a brief overview of tools used. Whilst there has been some critique of this list (Marien, 2002), for me, it remains the most concise list, highlighting the central ideas of futures studies across many disciplines.

#### ***1. The study of possible futures***

The study of possible futures involves creative and lateral thinking, as we become creatively involved in constructing images of the future ourselves. These images interpret the world in new ways and direct human effort in new directions. Such studies encourage both investigating and realising futures beyond that which is implied or assumed socially, culturally, or economically, and invite more voices into discourse than currently are engaged. Studying possible futures highlights the notion that present possibilities for the future could be valid,<sup>19</sup> and that thinking of present problems as opportunities and present obstacles and limitations as transcendable is a beginning to expanding human choice.

#### ***2. The study of probable futures***

The study of probable futures focuses on the likelihood of some specified phenomenon occurring within some stated time period and under specified contingencies. This involves tools such as 'incasting', or the study of the present influences, known and unknown, as well as 'present scanning', in order to have a base from which to forecast. The study of probable

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<sup>19</sup> This does not mean that all possibilities are indeed valid. Bell (2005a) and Rogers (1998) suggest that it is equally important to know what is possible, as what is impossible. Slaughter (2002a) would refer to this as critical futures studies.

futures includes a study of the past trends up to the present, in order to get some idea of what has been happening in the recent past. Thus, futurists are interested in the study of cause-and-effect relationships of the phenomena under consideration. “For the most part, as they explore possible, probable, and preferable futures, futurists are consumers and synthesizers of knowledge created by other scientists and scholars” (Bell, 1996, p. 97).

### ***3. The study of images of the future***

A focus of much futures research is people’s images of the future. Some futurists study causes of the images of the future, whereas others study their consequences. An emerging group are interested in studying the images themselves. There is much interest across many fields about the ways in which images of the future influence human behaviour and how that behaviour in turn contributes towards making the future. One link has to do with an individual’s ability to balance present and future gratification (Kauffman & Husman, 2004; Oettingen & Mayer, 2002). Some writers claim that all forms of deviant, criminal and reckless behaviour have the same fundamental cause: the tendency to pursue immediate benefits without concern for long-term costs, and a disregard for inevitable and undesirable future consequences (Bell, 1996; Hirschi & Gottfredson, 1994).

### ***4. Producing futures knowledge through futures tools.***

One of the main purposes of futures studies is to gather and produce information about possible futures, based upon understandings of past and present. This has been traditionally referred to as the ‘knowledge foundation’ of futures studies. Bell (2005b, p. 86) comments that “although the knowledge foundations of futures studies contain some of the most well developed aspects of the field, they also contain, ironically, some of the least developed”. This futures knowledge is developed through multiple methods and tools. Masini (2006) and Novaky (2000) organise these into four categories (new methods, old methods, old methods in new attire, and new combinations of methods) and give examples of each (see Table 2). I will draw upon and adapt a number of these tools in facilitating teacher professional learning for this research. In turn, teachers will subsequently draw upon their developing repertoire of tools for use within the enacted futures curriculum.

**Table 2 – Summary of futures methods**

Futures methods	Example	Description <sup>20</sup>
New methods	Storytelling method <sup>21</sup>	Aims to develop collaborative or shared scenarios <sup>22</sup> for organisation or community, which in turn helps provide vision and leadership. Based on perceived need for change within context (Bullard, 2004; Neilson & Stouffer, 2005).
	Futures workshop technique	Aims to fill a gap in existing democratic systems which fail adequately to involve the people directly affected by political decisions into the decision-making process itself (Inayatullah, 1998; Jungk & Mullert, 1996).
	QUEST techniques (Quick Environmental Scanning Technique)	Watches the environmental effects expected in the future, taking them into consideration in the systematic analysis of the strengths, weaknesses, possibilities and drawbacks of a given organisation. Can be applied as a foresight technique when graded sessions of futures workshops are introduced in the process. This allows the elaboration of institutional foresight, that is, a system of future shapes, strategies and choices that management and staff also accept and prefer (Novaky, 2000; Slaughter, 1990, 1995a).
	Causal layered analysis (CLA)	Does not aim to predict the future but to create transformative spaces for creation of alternative futures. Consists of four levels of social and cultural deconstruction: the litany (quantitative trends, problems), social causes (including economic, cultural, political and historical factors), discourse/worldview and myth/metaphor (deep stories, collective archetypes, the unconscious, often emotive, dimensions of the problem or paradox) (Inayatullah, 1998, 2002).
Old methods	Time series analysis	Identifies phenomenal pattern of time series data. Aims to identify the nature of the phenomenon represented by the sequence of observations, and to forecast (predicting future values of the time series variable) (Blass, 2003; Nagel, 1983; Weigard & Gershenfeld, 1992).
	System dynamics method	Combines the theory, methods and philosophy needed to analyse the behaviour of systems in not only management, but also in environmental change, politics, economic behaviour, medicine, engineering and other fields. Provides a common foundation that can be applied wherever we want to

<sup>20</sup>I am not professing nor claiming any expertise in any one futures method, but attempt to give the reader an overview of some methods used, as contrasted with those conceptual learnings developed in futures education. In the next section, I will further describe ideas such as the 3Ps, the Extended Present, the Foresight Principle and Continuities and Discontinuities which build upon or make some of the complex tools more accessible for younger people. In some respects, this is also a means by which I can elaborate upon my own interpretations of how futures can be enacted in a variety of settings.

<sup>21</sup>Otherwise referred to as futures narrative approach.

<sup>22</sup>Neilson and Stouffer (2005) describe a scenario as a forward-looking story.

Futures methods	Example	Description <sup>20</sup>
		understand and influence how things change over time (Forrester, 1993, p. 15).
Old methods in new attire	Delphi method	A group decision process about the likelihood that certain events will occur. It sheds light on principal trends of growth, expected future events and their order in time. Makes use of a panel of experts, selected for areas of expertise required. Their responses to a series of questionnaires are anonymous, and they are provided with a summary of opinions before answering the next questionnaire. The application of the classic Delphi method comes to an end when the average divergence of opinions remains almost unchanged in consecutive rounds (Gaspar & Novaky, 2002; Novaky, 2000).
	Scenario method	Aimed at the logical exploration, evaluation and subsequent drawing of conclusions of relations between events and trends consecutive in time. Scenarios can provide answers to what kinds of phenomena may arise as a consequence of certain acts, to how a supposed phenomenon may arise step by step and to what alternatives are possible at each step and turning point in order to prevent the process from unfolding, to preempt it or to help it along depending on how we see the arising process in the present (Börjeson et al., 2006; Burt & van der Heijden, 2003; Chermack, 2007).
New combinations of methods	Cross-impact method	Provides an algorithm to calculate the likelihood of a certain event happening in the full knowledge of the probability of other events happening. Also shows how the system reacts if the initial probability value of one of the events changes, to the change of which initial probability value of which event the system reacts most sensitively and how. The cross-impact method allows full-scale development of relations between futures studies methods based on collective expert opinions and the method of chaos theory. This makes it possible to build a wide variety of methods on one another (Gaspar & Novaky, 2002; Novaky, 2000).

There are many other tools and methods which have not been documented here, due to the scope of this study. Individual and collective futures projects will utilise different tools and methods dependent upon the purposes of the study.

### ***5 The study of the ethical foundations of futures studies***

Gaspar and Novaky (2002, p. 370) state that “it is first of all cultural and moral values that determine the tasks and the directions of future studies”. This is extremely problematic within a modern society where there are multiple and competing value sets and, in this thesis, these

multiplicities are assumed throughout. The study of the ethical foundations of futures studies follows directly from the purpose of exploring preferable futures. In order to assess the desirability of alternative futures, futurists must study, evaluate and apply human goals and values. They must concern themselves with the nature of a good society and with the standards of judgement and evaluation that they use. This domain of futures studies includes the exploration of value judgements which underpin these notions of a good society. It includes the construction and justification of some objective standards of value judgements by which values and goals can themselves be evaluated. It includes also the formulation, codification and legitimation of professional ethics for futurists which as yet mostly exist as an informal and often unstated set of guidelines.

### ***6. Interpreting the past and orientating the future***

Futures studies acknowledges the use of the past to guide present behaviour, as well as contributing to the construction of images of the future. In this way, “our beliefs about the past can help shape our beliefs about the future” (Bell, 1996, p. 3). Futures thinking is both indispensable to and consequential for interpreting the past, understanding the present, deciding and acting in the present, and balancing the use of present and future resources (Bell, 2005a; Slaughter, 2002a). Futures studies aims to bring about change in the present through strategic planning. Planning is considered long-range thinking affecting action in the present. The present is where action takes place that shapes the future. For Bell (1996, p. 89), “unless we have some perspective on where we have been, where we are going, and where we want to go in the future, the present is unintelligible”. As with Western time perspectives, the present can be viewed as a transition or turning point where we move between time frames and actions.<sup>23</sup> Futures studies endeavours to further develop our ability to balance the demands of the present against those of the future.

### ***7. Integrating knowledge and values for designing social action***

The purpose of futures studies is to design social action, and thus a futurist must organise and focus a great deal of disparate knowledge whilst critically examining the relevance of many different values. Action, unlike research, is not theoretical and analytic, but immersive, participatory, reflective and holistic. Knowledge which is relevant and needed is strongly related

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<sup>23</sup> Earlier, I referred to this capacity as temporal mobility.



to the nature of a multiplicity of successes and challenges which will be dealt with. In this way, an enormous range of expertise is often involved in designing social action:

In the design of social action, the futurist transforms herself or himself, from a passive observer into an active participant in policy processes, into a synthesiser of knowledge on one hand and a policy formulator on the other, into a social architect (Bell, 1996, p. 92).

Images of the future are involved in designing social action. They provide the goals and the motivation. Starting with a desirable image of the future, some person and place, organisation or phenomenon, futurists sometimes work back to specify the actions necessary to achieve it. Thus, images of the future provide guidance mechanism for social action (Morgan, 2002).

### ***8. Increasing democratic participation in imaging and designing the future***

Futures studies is committed to “the participation of ordinary people in proposing and evaluating alternative images of the future that affect their own lives” (Bell, 2005b, p. 33). There is considerable evidence that such social participation, despite its sometimes frustrating slowness and occasionally paralysing public disagreements and debates, contributes towards human betterment more than authoritarianism. The idea of deliberative and participatory modes of shaping futures, rather than passively assuming them, is an empowering way of seeing a world and its people move forward in these changing and layered times. Introducing explicit futures education and consciousness within the curriculum is a way of increasing wider participation of a broader range of people. In this way, futures studies aims to create and maintain the kind of society in which people are free to do futures research and to discuss openly alternative possibilities and preferences for the future. Envisioning alternative future political, economic or social arrangements almost always involves questioning the existing arrangements of society. Even in democratic societies, questioning the status quo can be unpopular and sometimes efforts are made to suppress it. Futurists clearly have a stake in keeping societies open to free inquiry and to the civil exchange of ideas (Bell, 1996).

### ***9. Communicating and advocating a particular image of the future***

Some futurists aspire to developing overarching visions that have transcendent elements. They may include speculative and creative images of an ‘other’ perfect society, “contradictions of the present, discontinuous futures that foretell the coming of new and different worlds” (Bell, 1996, p. 96). They aim to surpass the limits of the now, the limits of present understanding and

the limits of past experience. Drastic social change is sometimes envisioned. Sometimes, such liberation of human thought comes with a will for rejuvenating the imagining capacity of humankind, for the “creation of new, religion-like, positive, idealistic images of the future that will have the power to galvanize people into taking actions that will change the world” (Mannermaa, 1996, p. 662).

Futurists aim to contribute to human betterment by translating knowledge and values into action. Action means that there may be consequences for people’s lives, therefore making them better or worse than they are. Futurists, thus, must examine goals and values. As educators, their tasks are to help people develop capacities for logical analysis, critical judgement, taking care with choices and moral commitment, with the special obligations to envision and evaluate the consequences of action for the future. The purposes of futures studies are to discover or invent, examine and evaluate, and propose possible, probable and preferable futures. Futurists seek to know what can or could be (the possible), what is likely (the probable) and what ought to be (the preferable) [3Ps]. The people for whom these things are most significant are our future generations – our young learners in schools.

There are critics of futures studies and, as it is a derivative field, by implication of futures education. In the next section, I will briefly discuss some critiques and include my own views. This is important, as in submitting this thesis for assessment, and in claiming new possibilities for futures studies within education, it is significant to address or refute these challenges to the field.

## ***Critiques of futures studies as a 'field', and my responses***

### ***Writer's note: How futures isn't taken seriously***

When I first arrived at Deakin University, I attended a faculty conference. An icebreaker game included in the program offered a prize for the person who could insert a word most frequently across conversations over the days of the conference. On arriving at the venue, I had planned to use trivia about oranges. What happened instead was very interesting to me.

After numerous conversations with various colleagues over two days, I won the prize, for inserting 'futures' into conversations. The sad thing was that this had not been my intention. It was that during every academic planning session, I had seen a place for futures input, and was pushing this barrow. I had taken it for granted that everyone was familiar with this field. To most of my colleagues, the 'futures' was entertaining. Others, who were briefly familiar, were quick to flippantly dismiss any futures input as "futures is tired, and belongs to a period some time ago".

### ***Futures studies as homogenous***

If futures studies is a tool that helps control the future, there is a question of whose interests futurists pursue (Bell, 2005a) and whether what is explored represents a diversity of interests. There is also the question of which groups futurists belong to themselves, and whether there are groups whose interests are not being explored. Gaspar and Novaky (2002) suggest that a critique of future studies is that it is homogenous; it adopts a very linear view and methods, and must become more consultative of other approaches and worldviews.

In this way, homogenous futures studies refer to those which embrace and address the dominant social and cultural paradigm. This is contrary to the way in which I believe futures studies should occur. I contend that the development of futures studies is a means of encouraging all people to disrupt these homogenous views of the world and prescriptive modes of what future is assumed. Similarly, Sardar (1999) says that futures studies:

must work in opposition to the dominant politics and culture of our time, resist and critique science and technology (the most powerful agents of change and thought), globalisation (the most powerful process of homogenisation) and linear, deterministic projections (the official orthodoxy of the future) of the future itself will stop (p. 21).

Further, futures studies must pay greater attention to the many voices which are not apparent in the discourse. They are, if listened to and stimulated, capable of providing visions for a different society from the one in which they live. If they are simply talked to in terms of the social system of which they are a part, with its vocabulary and its frame of reference, they also seem to conform. Thus, it is crucial to develop futures perspectives which invite a much broader audience and participation.

### ***Futures studies as lacking intellectual quality***<sup>24</sup>

Critics of the futures field argue that it is too broad, and lacks a disciplinary base, when compared to a traditional discipline such as economics or science. Furthermore, as a result of this generality, very few futurists are trained, or willing to engage in projects across all or even most disciplinary fields of knowledge. “To read the occasional description of the good futurist, one gets the impression of a super person who jumps all disciplinary buildings, flies like a bullet to the right ideas and lifts all heavy intellectual objects” (Marien, 2002, p. 264).

For this reason, futures practitioners are encouraged to be broad and cross-disciplinary in their thinking. Sardar (1999) says that futures studies must be openly incomplete, unpredictable and thus function as an intellectual movement, rather than a closed discipline. Moreover, it should not stop at the investigation of different and wishful values, but should take an active part in the creation of the alternative visions, otherwise culture, ethics and values remain only a sermon (Novaky, 2000). A challenge, however, of the breadth and transdisciplinarity of futures studies is also ensuring a depth of investigation. Mainstream futures work is of ambiguous value in so far as it supports the operation and current success of dominant entities, which are driving towards futures that are clearly unsustainable (Blass, 2003). Deeper approaches question the wisdom of doing so (Slaughter, 2002a).

Knowledge about reality is a crucial issue in the renewal of futures studies (Gaspar & Novaky, 2002). If the future unfolds as the continuity of the past and the present, then the

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<sup>24</sup> Marien (2002).

possibility of cognition of the future is based on classic, positivist philosophical and methodological principles: the profound study of phenomena of the past and the present may lead to an altogether more thorough knowledge of future phenomena. If the future is not rooted in the past and present, if it manifests itself in a new form, however, this classic course of knowing it will not lead to the exploration of a qualitatively new future. “Cognition requires a new approach that can rely on the crutches of the future-oriented view and a way of thinking that revises and reassesses the past and present” (Gaspar & Novaky, 2002, p. 371).

### ***Futures studies as a loose community***

There are those futurists (Bell, 2005a) who describe a young and developing futures field, which exists currently as a fractured and fragmented field, but based on its youth and newness, has the potential to be original and creative. On the other hand, there are those researchers (Marien, 2002) who describe many communities of overlapping futurists, which lack collaboration and communication, in furthering futures knowledge. As a result, Marien says that futures studies lacks a shared intellectual background, and suggests that this will disrupt the longevity of the futures field. I agree with Marien’s critiques, and his suggestions that:

futures studies, should embrace its distinctiveness and strive to be a horizontal field, connecting all others – a visible, respected and ever-renewing network of humble hubs for integrative talking market (Marien, 2002, p. 261).

### ***Futures studies as arrogant***

The very labelling of the field ‘futures studies’ asserts that there is a group who are empowered to study the future, as they have exclusive ownership of the tools, concepts and knowledge which allow them to do so. In this arrogance, there is a claim that futures studies does what no-one else does. This is an incorrect assertion, as different aspects of the futures field are utilised within different settings for different purposes, often unaware that there is a published approach to studying the future. For example, many social agencies, such as Greenpeace, use a number of strategies to scan the environment and take action to enact a preferable future. Similarly, much of the corporate and political world engages in what is referred to as strategic foresight<sup>25</sup> without necessarily acknowledging futures studies.

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<sup>25</sup> “Strategic foresight is the ability to create and maintain high-quality forward views and to use the insights arising in organisationally useful ways” (Australian Graduate School of Entrepreneurship, 2004).

And, whilst there is an idea that futures studies belongs to those within the field, Marien (2002) refers to unfavourable images of futurists among professionals and the public. This is an exaggeration, I believe, as he embeds a further assumption that futures studies is understood and appreciated by outsiders. I contend that it is futurists themselves who develop these unfavourable images of themselves, amongst themselves, and indirectly outside of their peers. And we cannot assume any familiarity with the futures field, as any one of us interpret it. As discussed previously, the field is a loose community, at best. I certainly have assumed an understanding of futures studies and education on occasions which has excluded others from engaging with the field, and has increased my frustration at not being able to go beyond conversations of what futures is about, rather than actually utilising tools and concepts.

This thesis is concerned with the ways education develops futures consciousness, with a particular focus on the ways that teachers develop curriculum. In this chapter, thus far, I have discussed futures studies, its various interpretations, tools, strengths and challenges. The way in which it is explicitly brought to life within school curricula is referred to as futures education.

### ***Making links between futures studies and education***

There is much publicity and ado regarding the roles of schools, and their centrality in responding to ‘society’s woes’ (Bolt, 2006). In this way, I would argue that the ‘pull of the past’ is more considered than the ‘push of the future’ (Inayatullah, 2006b):

Education systems are rapidly becoming dysfunctional, in part because they lack the means to create and implement viable forward views. If they have to deliver the right kind of services to young people, teachers and schools, they need much more than snapshots and low-level emulations of corporate strategies (which were developed to other purposes) (Slaughter, 2002a, p. 497).

Since the social, economic, environmental and global context in which all education systems are embedded are in rapid change, they need to create a permanent capability to create viable forward views, interpret their significance and use the resulting information as regular inputs to planning, decision-making and operational procedures across the board. “To secure a place in education, futures studies must emphasise its distinctive horizontal approach, playing down the

futures aspect (which still scares a lot of people) and playing up the integration aspect” (Marien, 2002, p. 276).

Futures thinking must be linked to social responsibility and to ethical values that are clearly expressed and defined. Moreover, futures studies must become action for the future. Futurists must learn and help others to learn in future terms. This means learning not only with the aim of preserving the past or perpetuating the present, but learning to anticipate and build the future. This implies the conscious exercise of will and an act of responsibility (Masini, 1999). The continuous and dynamic process of learning to understand is the internalisation of values in an existential way. Values undergo constant change in relation to time and space, and as such are internalised (Masini, 2006). It is at this point that learning is important and crucial to futures thinking, and it is this kind of learning that will give human beings the ability to live in a rapidly changing world which overwhelms their capacities to survive. In this way, futures education encourages the development of learners both mentally and spiritually.

### ***Futures education***

The “impetus for futures education in Australia has come from a growing body of research on the perception of young people about the future” (Gardiner, 1998, p. 36). Toffler (as cited in Hicks, 1994, p. 1) argues that children learn from a young age that they are passive recipients of whatever future arises:

All education springs from images of the future and all education creates images of the future. Thus all education whether so intended or not is a preparation for the future. Unless we understand the future for which we are preparing we may do tragic damage to those we teach.

Futures education however, teaches learners that they do not have to accept what is presented and, rather, that the future is “what people can shape and design through their purposeful acts” (Bell, 1996, p. 3). Futures pedagogies encourage learners to recognise the possibilities and probabilities of future times, as well as to identify their preferable future in

which they may work. They also identify choices and changes which have occurred, and consider the limits and scope of human capacity within these contexts. In this way, as learners become more conscious of their futures capacities not commonly used in everyday life, futures education endeavours to maintain and improve the welfare of humankind and the life-sustaining capacities of the earth (Hicks, 1991, 2002). Along with others, Rogers (1998, p. 203) identifies a “critical need for people to change fundamentally their perspectives, feelings, value priorities and ways of living” (see also Masini, 1999; Shor, 1992). Many of these changes are dependent upon learning.

Futures education is considered an interdisciplinary approach to planning for teaching and learning. Such an approach is defined as “the synthesis of two or more disciplines, establishing a new level of discourse and integration of knowledge” (DeZure, 2003). As an interdisciplinary domain, futures education facilitates an integrative synthesis that often begins under the rubric of a problem, question or issue that allows for and requires a multiple disciplinary output (Bernd, 1971). For example, an interdisciplinary approach would underpin an investigation of the AIDS pandemic, global warming or sustainability, and the shaping of alternate scenarios. Interdisciplinary approaches encourage students to consider the aesthetic, ethical, political, scientific and technical dimensions of human experience and culture and to recognise the commonality and diversity of human experience, beliefs, and practices (Department of Interdisciplinary Studies, 2005).

Futures education is referred to as a transformative style of learning – “learning that challenges and sometimes dramatically changes the personal paradigms of learners” (Rogers, 1998, p. 212). Such an approach places an emphasis on participatory and experiential modes of learning, fostering student autonomy (Hicks, 1991). Hicks (2002) and Gardiner (1998) argue that futures must be explicitly addressed within curriculum. And, whilst elements of the future of learners are related to employment, relationships, leisure and citizenship, the curriculum must directly be focused on the more powerful concept of the future(s) themselves, and make its approach in a structured and systematic way (Gardiner, 1998). Furthermore, futures education highlights the value of placing events within a context of time, and asserts the need for education to become more futures-oriented, rather than working from roots strongly placed in the past.



Futures education encourages reflective participation within learning experiences (Bateman, 2006; Bussey, Inayatullah & Milojevic, 2008; Rogers, 1998). Such reflective capacities are built whilst the students make explicit connections between what has occurred in the past and what currently occurs, as well as what will occur in the future. In this way, they are encouraged to be more mindful of their opinions and beliefs about the world, and to situate them within the contexts of time, culture and space (Hicks, 2008; Milojevic, 2005). Thus, futures education encourages creative and critical thinking about the world in which students live. Slaughter (1998, p. 49) asserts that “the release of human potential is the key to cultural renewal” and that, as the most dominant force on the planet, the human species must take responsibility for its actions. In this way, futures education creates the basis from which students can critically, constructively and creatively move away from negative images and fears regarding the future.

Futures education utilises knowledge, concepts and tools to provide a strong basis for students to more critically and fully participate in the shaping of future personal, local and global scenarios. In the following sub-section, I briefly discuss five futures concepts that are critical to an understanding of the field of futures education and its application/relevance to this thesis.

### ***Key concepts of futures education***

#### ***1. There are different types of futures with which we are concerned***

The future is unknown and will be affected by many contributing factors. As a big idea, the future is difficult to access and constructively think about. Futures education explicitly addresses three types of futures: personal, local and global.

The study of personal futures engages a person in reflecting about how he/she envisages the future, specifically for that person’s lifetime (Hicks & Holden, 1995; Slaughter, 1996). These futures consider aspects of human life regarding health, education, professional life, economy, location, dreams, fears and aspirations. In this arena, a person draws upon his/her personal history and engages his/her understandings of the world in which he/she lives to critically

identify, plan for and shape a range of forecasted futures. In this way, futures education may be observed as a means of constructive personal development, allowing individuals to challenge and explore futures perceived not only by themselves but also others.

In considering local futures (Hicks, 1996b; Slaughter, 1996), a person (or people collectively) draws upon his/her understanding of their local environment and external resources to begin thinking about how this locality will look in alternate futures. A local environment may be understood as many things: a school, a suburb, a state or province or even a continent. It is this aspect of futures education in which people begin to work collectively to envisage and engage in productive planning and discourse about the status of the community being focused upon and possible futures that may be worked towards. Within a school, local futures provides an opportunity for the community connected to that school, including students, teachers, families, councils and other interested parties, to identify changes and continuities and work towards the most suitable scenario. It may form the basis of a shared community project.

As implied, global futures (Hicks, 1996b; Slaughter, 1996) invites participants to explore and understand the world in which they are personally and collectively living. It stimulates students to think about the 'big picture' and explore the deep structures of our world. These include an examination of our physical, spiritual and cognitive world, and how it came to be the way it is presently. Explicitly, a variety of worldviews may be developed and explored. Building on from these deep structures is the understanding that we are connected to those who have come before us, and will be connected to those who come after us. Futures education promotes the idea that each of us, individually and collectively, has a role to play in identifying and contributing to the shaping of the world, our global community.

## ***2. There are different ways of talking about the alternative scenarios we identify in personal, local and global futures***

'Alternative scenarios' is part of the metalanguage futurists and futures educators use to talk about the variety of futures outcomes/developments considered and identified by individuals and groups. Each future envisaged is referred to as a scenario (Chermack, 2007; Schwartz, 1991). We manage our thinking about these scenarios by identifying how possible,

probable or preferable they are. Possible, probable<sup>26</sup> and preferable descriptors are referred to as the '3Ps'(Gidley, Bateman & Smith, 2004; Slaughter, 1996).

Possible futures is the entry level for thinking about what is possible for personal, local and global futures. Possibilities are only limited by the scope of the mind to imagine alternatives to those already suggested. In this way, everyone who engages in futures thinking is able to provide a possibility. The possibilities are used in a variety of ways. We can identify a possibility and 'backcast' from this scenario, in order to make a plan for how this future would occur. We can inform the possibilities based on our understandings of the present and history, and we can challenge them based upon the values we hold, individually and collectively. Who says that it is impossible for any futures scenario to be accounted for, or enacted?

Probable futures draws upon knowledge and understandings in/of the world, as it is currently, as well the ways in which we envisage the deep structures (paradigms) underpinning our world. With this knowledge we are able to use a variety of critical strategies to gauge the realities of some of our possible futures occurring. For example, in Mathematics, we develop the understandings in *Chance* that some things are more likely than others. In futures education we also share these thoughts, and what makes one future more likely than another will be informed by factors such as environmental issues, financial issues, educative issues, governance, the local and global agendas and limits of humanity.

Preferable futures are those scenarios identified individually or collectively as ones which should be worked towards personally, locally or globally. And, as discussed in probable futures, what is recognised as preferable will be informed by a range of factors such as how we see the world, what we value as important and whether these scenarios are accessible and achievable. Many preferable local and global futures are very strongly connected to many personal voices and scenarios. In preferable scenarios, futurists and futures educators deconstruct assumed futures in order to critically identify what it is that is required for future generations. Sir Thomas More, and many others since, identified a preferable future when he raised the concept of

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<sup>26</sup> Some futures writers use 'plausible' (see for example Miller & Waller, 2003), rather than 'probable'. In an educational setting, particularly amongst children aged 6 to 12, I suggest that 'probable' is more accessible metalanguage for classroom usage. Another advantage of using the term is a natural linkage which occurs in an interdisciplinary learning approach, within futures and mathematics (Chance and Data).

‘Utopia’. In this way, any of these scenarios are developed in light of what is known about other time frames, such as the past and the present.

### ***3. The foresight principle***

Slaughter (1996) describes the futures field as a forward-looking history and emphasises the important connections which can be made with the past. Using the “foresight principle” (Slaughter, 1995b), students are taught to take glances back to history and those who have come before us, in order to make a good judgement in going forwards. He uses the analogy of driving a car. In order to reach a destination, you consult a street directory to map out a plan. In changing lanes, or going forwards, or changing directions, a smart and safe driver always checks the rear vision mirror to make sure.

### ***4. The notion of the extended present***

Boulding (1978; Polak, 1973a) discusses the notion of the extended present, traditionally a psychological concept developed by Piaget (Harner, 1982; Piaget, 1969). Rather than describing the present as an instant moment, Boulding uses varying lengths of the time to view a world from different glances. For example, she attempts to build connections between generations by highlighting the changes which occur within a person’s 200 year present. She suggests that a child’s natural extended present stretches from his/her grandparents through to the time when his/her grandchildren will be living. In a classroom setting, this is referred to as a family chain, and each generation clearly represents a group with which the individual is affective and physically connected.

One of the main rationales of futures education is in promoting learning which nurtures connectedness to our personal lives, the lives of others and the physical environment in which each person, culture and community live. The extended present acknowledges the people who have come before us, and highlights the journeys they have undertaken in contributing to the world as it is now, and has been for some time. The extended present does not assume that change will occur in a minute or a week, but allows people to manage reflective thinking and planning for changes over a much larger time span. It acknowledges a period of transition from what has been to what will be, and recognises that there are many events which continue throughout our lives, and others which change.

### ***5. Change and continuities***

We cannot assume that the future will be entirely different from the world as it is today, or that it will be entirely the same. In identifying how future scenarios are deconstructed, a binary which futurists and futures educators draw upon is that of change and continuities. Change and continuities are present in thinking about personal, local and global futures. Hicks (1994) and Slaughter (1995b) provide some excellent tools for contrasting and comparing elements of culture and society. Some of the stimulus they depict for students considers basics such as clothing, shelter, media, schooling etc.

### ***Some thoughts before moving on***

This discussion about futures studies and futures education has underpinned my determined view that these explicit dimensions are largely absent from school curricula. I have described my own relationship with the concept of futures, and considered the potential of futures education for student learning. In the next chapter, I will explore the interplay between temporality and the curriculum, as written and realised throughout Australia. Arising from this initial exegesis of futures and its general absence within school practices, I suggest that current Australian curriculum is temporally biased, with a strong emphasis towards present and past understandings. Apart from a small number of documents which explicitly acknowledge futures education as part of the curriculum, at best the others imply or assume that the current curriculum addresses the needs 'of the future'.

## ***Chapter 2 – Temporality and curriculum***

In Chapter 1, the importance, relevance and potential of futures education to contemporary schooling and learning was suggested and a need for a more explicit and sustained focus on futures education across Australian curricula was identified. This chapter builds on Chapter 1 through a detailed examination of two of the core concepts on which this thesis is based – those of temporality and curriculum. Specifically, I will argue that Australian curriculum documents and their enactment are temporally biased, that is, that a particular time perspective – the past – is privileged in curriculum practice. To clarify this argument the chapter will first examine the concept of temporality and its relevance to teaching and learning. This involves an investigation/exploration of time systems and time perspectives, how these are theorised within futures education, and the potential for futures education to redress the temporal bias that characterises Australian curriculum work. To illustrate this temporal bias I will examine a range of current Australian curriculum documents and demonstrate the ways in which futures education is either implicitly or explicitly positioned within these documents, and the ramifications of this for the enactment of futures education in schools.

### ***Temporality***

Temporality refers to a person's ability to conceptualise time (Jameson, 2003). This ability, that is, their temporal capacity, is important because "everywhere, people experience and interpret their lives in relationship to time. Time is the quintessential basis for and constraint upon the human experience" (Richardson, 1997, p. 29). In this section I will investigate the ways in which people develop temporal awareness and ultimately orient themselves to particular time perspectives. To do so, I will summarise theories of human temporality or understanding of time through an examination of time systems and time perspectives.

### ***Human temporality: conceptualising time through time systems***

A focus on the development of people's temporality is not new; indeed, researchers as far back as the 1950s have contemplated the development of temporal awareness. The focus of such research was often on the issue of temporality from a broad perspective. Contemporary research on time tends instead to focus on a particular temporal capacity, that is, a person's ability to think about and operate within time systems and time perspectives.

In order to consider the potential of futures education to learners, we must first understand how temporal conceptualisation occurs, particularly within school aged children. The conceptualisation and ability to operate within the realms of the temporal dimension are complex, and the process of learning the associated understandings and operational knowledge of time begin at a young age and continue into adolescence and early adulthood. We experience the world through time systems (Koltko-Rivera, 2004; Tarnas, 1988) and there are a number of time systems that people utilise in the development of their temporality. These include conventional time, non-conventional or operational time and adaptation.

#### ***Conventional time systems***

"Conventional time systems are among the intellectual tools a culture provides its members, which like language and technology, allow adaptation to the natural environment and to its own social system" (Friedman, 1982a). Children are taught about conventional time in a school's curriculum, in various areas including mathematics. "Conventional time provides a precise reference system for describing the order of any two events, describing or deducing a duration, or arranging for some future simultaneity such as a meeting" (Friedman, 1982a, p. 172). It is represented as clock time, incorporating days of the week, the annual calendar and intervals of historical time. Operational abilities are demonstrated by the recognition or utilisation of order and recurrence and duration applied to different intervals of time. Many of these durations and usages of the annual calendar are heavily reliant upon the children's ability to access number concepts. For this reason, some may be limited in their ability to operate using temporal markers due to their limited number knowledge.

Gelman and Gallistel (1978, as reported by Friedman, 1982a) suggested that a child's ability around the age of 4 years to recall the months of the year, for example, does not assert that he/she has a conceptual understanding of conventional time, nor that he/she would operate on these recalls. For example, a child who can do so is not necessarily able to project the month that will occur three months after another, nor to describe recurrences that would eventualise in any particular month. In comparison, an adult's understanding of conventional time includes knowledge beyond the structure used to describe and organise time (Flaherty & Fine, 2001). Usually, an adult is aware that time continues regardless of any human intervention, agenda or marking device. This highlights the way in which conventional time systems can be coordinated with logical time, that is, the "hypothetical unique ordering of events posited by Newton, and investigated developmentally by Piaget" (Friedman, 1982b, p. 8; Piaget, 1969).

Friedman also believes that the adequate cognitive processing of time requires "the superordinate processing level of metacognition" be present in a child (1982a, p. 171). This refers to a child's knowledge about temporal reasoning and knowledge. He describes early temporal metacognitive awareness in a 3 – 4 year old child as evidenced by his/her knowledge that adults understand conventional time whilst they themselves do not. In this way, studies by Fraisse (1982) and Friedman (1982a) describe children's perception of adults as a type of temporal orienteering device, for example, to advise on the time of an upcoming event, or to indicate time that has passed or will pass as they wait for something to occur (Fuchs, 2005; Weigard & Gershensfeld, 1992). Older children struggle to adapt their understandings of conventional time to the passing of their lives, yet will become able to operate within points of reference to keep an appointment or follow and predict the routine of a timetable (Fraser, 1992; Kauffman & Husman, 2004). Friedman (1982a) suggests that there will be variation of attainment of temporal concepts dependent upon the age at which children are taught about the particular dimensions of time. These are important considerations when entering a classroom to develop explicit temporal dimensions.



### ***Non-conventional time systems***

Non-conventional or operational time is described as the way in which people use time concepts to interact within the world (Bash, 2000; Fraisse, 1982; Piaget, 1969). Children develop these skills concurrently as they conceptualise conventional time. Friedman (1982b, p. 3) describes a taxonomy of temporal problem solving, listing abilities which must be learned in order for a child to master understanding and operability of time concepts. The skills acquired throughout the cognitive development of non-conventional time that he describes are:

- Judging duration – logically sufficient information
- Judging duration in the absence of logical information
- Representing succession and simultaneity (order)
- Constructing inferences from the temporal order
- Distinguishing past, present and future
- Representing natural and conventional periodicities and orders
- Other types of problem solving (such as ability to wait).

Friedman (1982a) suggests that there are three main assertions regarding cognitive temporal awareness before the age of six years.<sup>27</sup> The first is that young children are aware of regularities in their own life, such as daily routines, well before they learn about conventional time systems (Bash, 2000). Secondly, it is asserted that preschool children are able to state temporal elements, such as days, months and the term 'o'clock', and associate these as reference points for their own activities (Crepault & Nguyen-Xuan, 1990). However, in this, the child's awareness of time is fragmented as he/she has not yet developed a relational understanding between the events which transpire in his/her life. Thirdly, preschool children have been observed to be able to perform limited operations on non-conventional temporal concepts, such as in ordering the events of their days, or fitting an occasion of significance such as a birthday between two other events (Flaherty & Fine, 2001). Piaget (1969), Harner (1982) and Friedman (1982a) agree that it is not until the ages of 6 – 8 that a child is able to conceptualise the range of a year and be more discriminating in ordering less frequent events. Furthermore, all three subscribe to the theory that children are not able to integrate operational time with conventional time until the ages of 8 – 9, and that mastery of the Western

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<sup>27</sup> Similarly, early Piagetian research suggests that children gradually develop a sense of history and time, and that children in the early years of school are still developing a sense of past and future (McInerney, 2004).

temporal system is not achieved until adolescence or into adulthood (Manturana, 1995).

Similarly, in considering a notion of the extended present, children consistently recognise the cyclical nature of time through continuities and changes, such as a day changing to another, yet the week continuing between the ages of 8 – 10.

### ***Adaptation***

Fraisse (1982) claimed that the central question in the developmental psychology of time is the development of a person's adaptation to time. "The most advanced form of this adaptation is the capacity to think about time ... to acquire a notion of time that permits man to hold a coherent and objective discourse about the past, present and the future and to behave according to it" (Fraisse, 1982, p. 113). He describes three modes of adaptation which indicate the cognitive development of time awareness and competence to organise events and understandings into the temporal systems recognised by the Western model of time. In the first mode, children are conditioned to time by their experiences with intervals between signals or events (Fraisse, 1982). These provide children with the insight to orient themselves, practically and cognitively. Based on an innate circadian rhythm, for example, a child is oriented to sleep, eat and play depending upon external cues and intervals such as night and day (Hasher, Goldstein & May, 2005). In the second mode of adaptation, a child develops his/her perception of time as constant and measurable (Fraisse, 1982). He/she begins approximating the duration of intervals passing, and cognitively, for example, he/she is able to cross a road. The third and final mode is what Fraisse (1982) refers to as mastery of time, or Piaget (1969) and Friedman (1982a) refer to as knowledge of time. Early stages of allow the child to represent and discuss the past, and further to recognise changes which occur in varying intervals. At a later stage, they are more likely to realise the temporal relativity between events, discuss change and continuity, and anticipate future events (Hasher, Goldstein & May, 2005). Fraisse (1982) summarises that:

the child gradually becomes capable of objectifying the changes to which he or she is subject and is also able to represent time in terms of successions and durations. The child learns to use these experiences to construct increasingly abstract representations, finally leading to knowledge of time that will permit him or her, to a certain degree, to master time; each will be capable of speaking about the past and making plans for the future (p. 124).

In this section, thus far, I have described the theories used to explain the development of human temporal capacities, or the ability to conceptualise and utilise time. Much of this research has been located in the mid to late 20th century. I suggest that the main reason for the lack of more current research lies within a changed focus amongst time theorists. Whereas in this section I have encompassed general theories of temporal development, the more current research focuses on human capacities to engage with particular modes of temporal conceptualisation and usage. For example, as will be demonstrated in the next section, there is more literature describing a person's ability to think specifically about the future. This ability is referred to as a time perspective.

### ***Time perspectives – what does it mean to be futures conscious?***

Time perspectives emerge from cognitive processes partitioning human experience into past, present and future temporal frames. Zimbardo and Boyd (1999, p. 1271) state that they are a “pervasive and powerful yet largely unrecognizable influence on much human behaviour” and that they are learned and modified by a variety of personal, social and institutional influences.

Kant (cited by Zimbardo & Boyd, 1999) and Heidegger (1980 (1927)) believed time conception to be an innate ability, arguing that it affected the way people experienced the world. Levine defined a time perspective as “the totality of the individual's views of his psychological future and psychological past existing at a given time” (cited by Zimbardo & Boyd, 1999, p. 1271). This is more akin to the circular temporal perception held by Eastern cultures, as opposed to the traditional Western view which flows at a constant, linear rate that is not able to be revisited. From this viewpoint, Zimbardo and Boyd (1999) define time perspective as “the often non-conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories or time frames, that help to give order, coherence and meaning to those events” (p. 1271). They describe these temporal frames as “used in encoding, storing and recalling experienced events, as well in forming expectations, goals, contingencies, and imaginative scenarios” (p. 1272).

Similarly, Holman and Cohen Silver (1998) describe temporal perspectives as the overall span of cognitive involvement across past, present and future life domains, and go further to define a person's temporal orientation as "cognitive involvement focused predominantly on one of the three time zones (i.e., past, present, or future)" (p. 1146). In contrast to a child's past temporal orientation, described by Piaget (1969), Fraisse (1982), Harner (1982) and Friedman (1982a), Heidegger (1980 (1927)) asserted that the future dominates human adult consciousness. Holman and Cohen Silver (1998, p. 1146) argue that there are "benefits of integrating past and present experience with future expectations in order to strengthen personal morale, enrich one's sense of self, and cope effectively with adversity". This is what Zimbardo and Boyd (1999) refer to as having a balanced time orientation, or a mental framework that allows flexibility in the temporal orientation a person operates within, depending upon contexts, resources and personal and social assessments. They warn of temporal bias, which involves over-use or under-use of any of the orientations of past, present and future.

Research about these time perspectives (see Harner, 1982; Holman & Cohen Silver, 1998; Zimbardo & Boyd, 1999) consider the connections between an adult's life experience and his/her ability to conceptualise futures-oriented thinking. This research is important as it highlights the ways in which futures education can provide significant temporal experiences which will contribute to the development of these temporal capacities. Moreover, through this increased temporality, and specifically futures consciousness, futures education 'balances' some of the temporal bias which currently exists within curriculum. This idea will be further

***Writer's note: Temporal mobility – a phase in development***

During the course of this research, it is becoming clear to me that throughout our lives we are temporally mobile beings. We simultaneously live as people located and interacting 'in the now', whilst also being reflective, historic creatures. We are constantly developing the ability to anticipate, and plan using the capacity of foresight, and we move between the temporal zones – past, present and future – fluently and often unconsciously. Thus, through futures education, drawing upon historical knowing, we are developing a more integral temporal way of knowing and fluidity.

developed later in this chapter. There is limited current research available in this area. Most research (Bash, 2000; Flaherty & Fine, 2001; Fraser, 1992; van Loon, 1996) in regard to children's processing of the future is based upon the theories published by Piaget (1969), Friedman (1982b, 1982c, 2002) and Fraisse (1968, described by Bell, 1996; Fraisse, 1982; Harner, 1982).

### ***Developing time perspectives***

In order to relate meaning of past, present and future to experience, children must grasp the basic concept of temporal seriation. This refers to the order of successive events or changes which have occurred or will occur (Harner, 1982). Fraisse (1982) believed that most young children can perceptually discriminate a succession of changes more easily than they can recall them. In order to conceptualise this seriation, Harner (1982) describes two understandings a child must masterfully apply in order to extend seriation, into an ability to organise events into temporal dimensions of past, present and future. The first understanding is that any two events occur relatively to one another on the time continuum. The second principle arising from the first is that each event either precedes or follows the other.

The relative order of events is essential to the development of future and past in two ways. First is the idea that the past originates from a collection of discrete memories which are sequenced and recalled in a way that one event precedes another:

Several factors influence time perspective extension including: the complexity of the society in which an individual lives and what the society values, perceived opportunities that need to be planned for in a given society, parental influences, technology, spirituality, and many other features of the socio-historical milieu of individuals" (McInerney, 2004, p. 142).

Harner (1982) suggests from this basis that the "idea of the future may originate as intentionality or potentiality, but children must learn the probable sequence of occurrence of future events if they intend to have any effect on their shaping" (p. 143). Second is the understanding that an ordered relation must be established among the categories of past, present and future (Hudson, 2002). An obstacle faced by children in learning about time and seriation is that the boundaries of each temporal marker are not fixed.

Although children must realise that the past and future are separate from the present as well as from each other, they must also realise that there is no set time span for the present, and that the past and future domains of experience merge into the present (Harner, 1982, p. 143). Another difficulty children face is in temporal decentring or the ability to adopt a temporal point of view that differs from one's immediate viewpoint. Based on Piaget's description (1969) of children as egocentric in their orientation, Harner (1982, p. 144) claims that:

once children implicitly comprehend the notion of a present as a continually changing reference point that does not always correspond to their own, they may understand past and future relations from points of view other than their own.

Piaget's (1969) work on the sensorimotor period of cognitive development, describes temporal development of infants up to 18 months of age. "In mastering seriation, children perceptually discriminate, imitate, and later recall a succession of changes" not possible during this stage (Harner, 1982, p. 144). During transition from sensorimotor to representational modes of thought, they develop a sense of the extended present in the past, not purely relying on an immediate perceptions and actions for the existence of objects, in locating a toy in a hide-and-seek game (Piaget, 1969). Piaget did not specifically acknowledge the place of the future in the extended present, but other theorists (Fraisie, 1982; Harner, 1982) have assumed that futures thinking occurs in the practical intentionality phase of development, when a child learns causality in knocking one block or ball with another to change the original orientation. Between the ages of 6 – 10 children have mastered basic system of time relations and appropriate linguistic terminology for temporal distinction. During adolescence "the consciousness of time increases and, consequently, there is much more planning for the future" than in the early years and these future plans became much more realistic (Harner, 1982, p. 163).

According to Nelson (1996), the concept of time is itself a social construction and is conveyed to children through language. Conversations about the future are considered important for young children to develop an explicit concept of future time as conversations about past events are for the development of autobiographic memory. Using picture-sequencing tasks, research has shown that children develop a more complex understanding of the temporal structure of real-world events during ages 3 – 8. There is general agreement that

by the age of 2 children can differentiate between past, present and future reference using both tense and aspect. An understanding of before and after as well as more complex conventional time terminology (tomorrow, next week) is achieved during ages 4 – 7 (Hudson, 2002, p. 1525). Thus, conversations about both past and the future may be viewed as important contexts for children to understand how event sequences and temporal concepts are related in language and thought.

Our past experiences are familiar and known, whereas our sense of the future is characterised by a measure of uncertainty. Hence, there are many subjective factors which will affect our perceptions of the past and projections onto the future. Miller (1978, as reported by Harner, 1982) recommended that a young child's understanding of the past is much simpler than an adult's, and that it is directly attached to his/her concrete, personal experiences. As adults, Bell (1996, p. 1) says that:

We try to control the future, not only to prepare for it by adapting to what we think is coming, but to make things happen that we want to happen. We map out the next day or the next few years; we plan our future marriage or occupational career, knowing of course, that things may not turn out exactly as we have planned.

### ***Futures time perspective (FTP) and futures education***

A growing area of research in educational psychology is futures time perspective [FTP] and its relationship to desired educational outcomes (McInerney, 2004, p. 141). McInerney suggests that it is reasonable to assume that a sense of purpose for the future is important in motivating individuals to engage in activities perceived to be instrumental in achieving valued future outcomes, and that there is value in studying FTP. Most of our vision for the future is based in a personal worldview. Our understanding of the future has remained in that early childhood place where we first encountered the non-present. Futures education is a strong temporal orientation in considering the varied future possibilities, probabilities and preferences associated. It contributes a more balanced futures temporal orientation to the past-oriented view of education and the wider society.

Futures education recognises “the nature of the future that children articulate for themselves” as different to a “world in which baby boomers grew-up as children and adolescents” (McInerney, 2004, p. 142). It acknowledges the many changes which occur within students’ lifeworlds, both personal and shared. McInerney (2004, p. 143) reflects that:

It was common with earlier generations to have a relatively predictable future that included some schooling, further education for a limited number of individuals, assured work in a career or trade that would be the career or trade for one’s entire working life, marriage, family retirement, and pensions.

He suggests that children could be more concerned and involved regarding their futures, and to utilise opportunities, such as education, to shape futures described as uncertain, and a world subject to rapid change. Alternatively, without explicit development of the FTP, it would be easy for students to feel helpless and hopeless, and be disinterested in and disassociated from a future which is predetermined, or be unable to be affected, as a result of the uncertainty associated with rapid change in the world.

Hudson (2002) suggests that there is a strong relationship between the development of FTP and the knowledge and skills one develops as valuable and relevant. In this way, the more metacognitive a person is in regard to his/her own futures orientation, the more discriminatory he/she is in attendance to different aspects of learning and engagement. Those with a longer futures time perspective perceive their present behaviour as more instrumental in achieving a broader range of both immediate and future goals. Hence, the perceived value of the present task activity is consequently higher. Conversely, individuals with short FTP are “less able to articulate future goals and hence see less value in activities in which they may be currently engaged and which may be considered ‘detached’ from the real world of their experiences” (McInerney, 2004, p. 143).

Phalet, Andriessen and Lens (2004) say that schooling is a futures-oriented investment. As will be further discussed in the latter half of this chapter, Australian curriculum documents reflect a common focus on preparing children for the future. In a study reported by McInerney, middle school students did not perceive an explicit link between the value of education and future goals. They did not consider education as purposeful in equipping them with skills



associated with their perceived futures orientation. On a number of key indicators of future orientation such as 'values in life', 'success in life' and achievements, many gave the impression that they were not yet at the stage where thinking about the future was relevant. Holding valued future goals is important because these give meaning to school tasks:

Future goals indeed play a pivotal role in giving a sense of purpose and direction to activities in which students choose to invest themselves ... without this future time perspective many activities that might otherwise seem intrinsically or extrinsically motivational in the short term are relatively 'hollow' in garnering a real commitment to learning (Miller & Brickman, 2004, p. 147).

Futures education therefore provides a means by which temporal awareness and capacities can be developed. The development of these abilities, through futures tools and thinking, within curriculum, and as Miller and Brickman (2004) suggest, provides greater connections between what occurs in the students' lifeworlds and what occurs within school, as a place of learning. In the following section, I will explore this notion of temporality within current curriculum. As previously highlighted, in this thesis I have contended that Australian curriculum documents are temporally biased. Further, I will suggest that FTP within the formal or written curriculum are either assumed, or implicitly developed, or less evidently explicitly embedded within curriculum.

## ***Curriculum***

Curriculum is, as highlighted in the introduction, one of the core concepts of this thesis. This is because the thesis is concerned with the ways in which futures education or FTP are acknowledged within Australian curriculum documents. This section will review relevant research on the position of futures education in formal curriculum. Building on the work of Gough (1990) I will then examine its role in current curriculum documents. Specifically, I will talk about FTP as being either implicitly or explicitly positioned within curriculum documents. An implicit FTP is one in which the role of education in preparing students for a future may be claimed, yet there is no specific place in which this learning may be identified within the written curriculum. An explicit FTP is one where claims are made about the role of education 'for the future', and the curriculum clearly denotes where this learning will occur within the curriculum. I will then use this framework to examine the positioning of FTP across Australian state and

territory curriculum documents to support what I see as a lack of explicit acknowledgement of futures education in formal curricula. This is significant as the formal or intended curriculum influences curriculum practice.

As it is not within the scope of this study to deeply engage with curriculum theory, it is sufficient to note that:

curriculum documents impose or reflect various understandings about the nature and uses of knowledge ... (see for example, Goodson, 1983; Schrag, 1992). Indeed, the written or formal curriculum is a historically constituted site for ideological struggle. It is historically constituted because “it can be seen as the culmination of long and continuing effort” (Goodson, 1994, p19). This struggle or effort has typically centred on issues of control – who has it, who doesn’t, why and to what effect (Goldman and Conley, 1997; Harris, 2002). This is seen as valuable because those who control the curriculum control the definition and promulgation of knowledge (Apple, 1990; Young, 1971 (Harris-Hart, 2009, p. 116).

I argue that FTP have been marginalised. Whilst education generally claims a role in educating students for their futures, it seems that these futures are being colonised (Milojevic, 2005). This occurs as a result of the lack of explicit opportunities and experiences students have within curriculum to identify and explore alternative futures possibilities. This temporal bias, which occurs as a result of the constant historical glance within school curriculum, enables policy makers and those in power to direct curriculum which allegedly addresses the needs of the future with little input of the key stakeholders – our future citizens.

### ***Futures in Australian curriculum documents***

Since the early 1980s, educational and political leaders across Australia have identified themselves as contributing to students’ futures. Reflecting back on my Masters study, I was intrigued by the promises education made, and often questioned how schools attempted to address what was deemed ‘necessary’ learning for the future, based on my new understandings regarding the possible multiplicity of futures. “The view that one of the key roles of schools is to

develop and prepare young people for ‘the future’ is a given, and rhetoric around this theme has long been a feature of curriculum” (Gidley, Bateman & Smith, 2004).

Schools in recent history have, for example, been referred to as ***Schools of the Future*** (Schools of the Future Coordination Branch & Directorate of School Education, 1996) and ***Lighthouse schools*** (School of Education, Macquarie University, 1972; Coalition of Lighthouse Schools, 2003), acting as beacons in the metaphoric waters of life’s journeys. Today, we have ***Blueprints for the future*** (Department of Education & Training Victoria, 2004), ***Essential Learnings for the future*** (Department for Education, 2002; Department of Education Tasmania, 2002; Victorian Curriculum and Assessment Authority, 2005) and a range of ***Pathways*** (Department of Education & Community Services (ACT)) to be explored dependent upon what state or territory a person lives, learns and/or teaches in.

### ***The positioning of futures education in Australian curriculum documents***

In other contexts, I have considered FTP in Australian curriculum documents (Bateman, 2005b, 2005c; Bateman, Gidley & Smith, 2006; Gidley, Bateman & Smith, 2004). Nearly two decades ago, Gough (1990) asked similar questions and challenged the way that futures perspectives were developed in education. One of his significant concerns was that much of the futures learning was developing issue based information, and drawn from pop futures texts. Instead, Gough suggested that there be more attention paid to the development of strategic planning in the way futures thinking could evolve within schools. Moreover, he wanted greater consideration of conceptual frameworks for futures education.

Gough described what he saw as three levels at which futures education was occurring: tacit, token and taken-for-granted. He said that assumptions about futures are a tacit presence in educational enquiry even when the object of study is thought to be located in the past or the present. He also described the imbalance of attention paid to the domains of history, present and futures: “by comparison to the future, the temporal categories of past and present receive more frequent and more explicit attention” (p. 301). In this, Gough also described the ways in which curriculum is temporally biased.

Gough's second level of futures engagement within education is token futures. He describes this as the utilisation of futures concepts and terminology for purposes which are chiefly rhetorical, or to rationalise choices, decisions or judgements which may, in fact, have been made on other grounds. This is uncritical futures, where the reiteration of clichés and stereotypes are reproduced and passed through temporal frames. There is no fostering of thinking, nor questions about the images provided, but rather they act as stimulus for a range of activities which then perpetuate the idea that schools are 'doing' futures.

In many ways, these ideas are also assumed within Gough's third level of approaching futures within education: taken-for-granted futures. These are paralleled with those I have already referred to in this section as assumed futures. Taken-for-granted futures are passively received as we pass through different phases and stages of our life. Doris Day, for example, summarised the basic tenets of these futures in 1956 when she sang:

When I was just a little girl I asked my mother, what will I be?/  
Will I be pretty?/ Will I be rich?/  
Here's what she said to me:/  
Que sera, sera/ Whatever will be will be/  
The future's not ours to see/ Que sera, sera/  
What will be will be.

Gough suggested that there is little futures speak at governmental levels, which does not allow the exploration of multiple possible futures. In turn, the futures that are taken for granted limit the usefulness of much of the work in which it is engaged, as when such "assumptions set restrictive program that is on inquiries, which deserve to be more open-ended and the exploratory" (Gough, 1990, p. 305). In particular, much current rhetoric concerning futures in Australian education takes for granted the prospect (and the desirability) of an education-led economic recovery. It is a rhetoric largely generated by, and debated within, the unlimited constituency of economic rationalists.

Gough and others warn that children's concepts of futures need to be interpreted cautiously and critically. A critique of futures education is that there are boundaries imposed by adult

needs and stereotypes concerning future possibilities and potentials. Furthermore, there are other suggestions that futures education may be a way of ‘pushing’ a particular agenda to serve the political interests of the research:

Adults should be cautious and confident of their moral grounds before setting out to design curricula which, deliberately or otherwise, tamper with children’s concepts and images of futures, regardless of whether or not these concepts and images reflect, distort, confound or transcend those of adults (Gough, 1990, p. 308).

Gough’s cautionary advice supports the need for deeper temporal understandings to be developed for both students and their teachers. This will be further explored within the next chapter, focusing on the school as a place of learning. In this section, however, and building upon Gough’s identification of futures within curriculum, I will identify the ways in which FTP can be implicitly or explicitly identified within Australian curriculum documents. Further, I will outline the framework I have used in seeking this data through document analysis.

### ***Implicit and explicit futures education***

Implicit futures education refers to statements, comments and curriculum outcomes that refer to the future, but are framed as tacit, token or taken-for-granted (Gough, 1990). Gough (1990) argues that a concept of futures is present in all educational discourse, even if it presents as no more than a tacit inference. Such comments and statements do not suggest the ways in which futures concepts will be developed through the curriculum, nor how they have been considered in developing the curriculum. Typical curriculum statements include: “developing citizens of the future” (Department of Education & Community Services (ACT)) and “personal and civic development of the person” (Department of Education & Community Services (ACT); Department of Employment, 2004). Such claims are broad and not connected to specific images of the future, nor associated with explicit ways in which the curriculum will develop these futures capacities.

There are multiple curriculum areas in which futures education is implicit such as Science, Humanities (History, Geography, Economics and Civics and Citizenship), Environmental

Education and Technology. The assumed and taken-for-granted FTP within these curricula are based upon the notion that in thinking about the sustainability of the environment, for example, we are automatically considering the future. For the purpose of this study, I am looking to identify the ways in which it is the study of futures which is foregrounded within curricula. While offering a range of important concepts and skills, the taken-for-granted future is often considered in terms of vocational orientation, civic responsibility and lifelong learning. Such approaches tend to be reactive in terms of the future, and more often than not will serve to enforce the status quo through an uncritical adoption of a taken-for-granted future with an unexamined past in terms of worldview. Implicit futures concepts include sustainability, technological futures, change and continuity, civic responsibility, globalisation, vocation and careers knowledge – the future of work and personal development.

Within an implicit futures approach, the learning is described as lifelong, holistic, flexible or 'just in time'. Alternatively, it is seen in connection with skills associated with problem solving, cognitive development or in preparation for a complex world. In these ways, implicit futures in education may be seen as valuable, but they still markedly limit the ways in which students can engage in, explore, share, shape and critique the possible futures in which they might exist. For this reason, futures education more strongly values futures perspectives, tools and processes which are explicitly developed within curriculum (Bateman, 2004; Gidley, Bateman & Smith, 2004).

Explicit futures education as an overarching framework for curriculum work is considered as a 'missing dimension in education' (Beare & Slaughter, 1993; Hicks, 2002). Explicit futures education is that which attempts to develop futures literacy, drawing widely upon futures studies literature for processes and content, and expressed in curriculum statements and outcomes that clearly problematised the future. In particular, an important point of departure from implicit futures is the use/inclusion and reference to the explicit knowledge bases, concepts and tools around possible, probable and preferable futures. Explicit futures also consider deep structures using a variety of approaches which encourage exploration of issues at the level of paradigm/worldview.

Explicit FTP within curriculum may be identified as those which directly develop temporal awareness as evidenced by relevant standards or outcomes for assessment. Furthermore, they will be apparent through the ways in which curriculum embraces specific futures thinking, and the inclusion of the multiple levels of futures possibilities – personal, local and global.

In examining a sample of current Australian curriculum documents, there is evidence of both implicit and explicit futures time perspectives. In Table 3, I have summarised the key indicators I have explored within a number of documents. The following document analysis simply serves to provide examples of how temporality, and specifically FTP, is positioned within Australian curriculum documents.

**Table 3 – Implicit and explicit FTP in curriculum**

Implicit FTP in curriculum	Explicit FTP in curriculum
<ul style="list-style-type: none"> <li>• Introductory claims which link curriculum and school to idea of educating for the future</li> <li>• Document broadly describes the notion of a singular future</li> <li>• Generalised claims which connect what occurs within curriculum to a vague notion of the future</li> </ul>	<ul style="list-style-type: none"> <li>• Curriculum document leads with strong statements regarding the ways in which it educates for the future(s)</li> <li>• Document acknowledges multiplicities of futures</li> <li>• Document contains guiding learning standards/ outcomes which might be evident in student learning</li> </ul>

### ***Implicit and explicit FTP within Australian curriculum documents***

For the purpose of identifying the ways in which FTP are evident within curriculum documents, I have undertaken document analysis, drawing upon the indicators presented in Table 3. Document analysis is the analysis of the written or visual contents of a document. A person’s or group’s “conscious and unconscious beliefs, attitudes, values and ideas are often revealed in the documents they produce” (Fraenkel & Wallen, 1993, p. 389). Documents should be used when it appears they will yield “*better data or more data ... than other tactics*” (Dexter as quoted in Merriam, 1998, p. 125). Document analysis is a subjective and intuitive process, as it involves the development of categories to describe segments of text or data. It is therefore an interpretive act, as it seeks to address “how things are said, and the underlying or symbolic

meanings of texts” (Lupton, 1999, p. 453). As Apple (1990) asserts, one needs to examine not only what is said but what is not said, why and to what effect.

### ***Explicit futures education in curriculum***

Three particular curriculum documents have incorporated explicit futures education perspective in what I perceive to be innovative and creative ways, making Australia a potential leader in futures education in schools. The curriculum documents of Tasmania (Department of Education Tasmania, 2002), South Australia (Department for Education, 2002) and Queensland (Education Queensland & Curriculum Council (QSCC), 2001) each describe an explicit futures education approach that seeks to develop futures thinking, skills and conceptual understandings in a number of ways as is detailed in subsequent paragraphs. Each uses ‘curriculum organisers’: clusters of connected ideas linked to skills which enable development of futures concepts. These concepts relate to personal futures, social responsibility and global futures. I am aware at the time of writing this thesis that Tasmanian (Department of Education Tasmania, 2008) and Queensland (Queensland Studies Authority, 2008) curriculum documents are undergoing transition. For the purpose of this study, what has recently existed enables me to demonstrate the ways in which FTP are positioned as explicit within curriculum.

In Queensland, the ***New Basics*** (Education Queensland & Curriculum Council (QSCC), 2001) was the first Australian curriculum document to include futures education, and as such, is regarded as a futures education pioneer. This curriculum encompasses a cyclical triad that includes ***New Basics*** (what is taught) ***Productive Pedagogies*** (how it is taught) and ***Rich Tasks*** (how students demonstrate learning). It attempts to develop an interdisciplinary approach using four key curriculum organisers. Within each of these curriculum organisers is an explicit ‘key futures education question’. In *Life pathways and social futures*, the question explores ‘Who am I and where am I going?’ In Chapter 1, I identified personal futures with which this fits. In the curriculum organiser, *Multiliteracies and communications media*, the question is ‘How do I make sense of and communicate with the world?’. Within *Active citizenship*, student inquiry focuses on ‘What are my rights and responsibilities in communities, cultures and economies?’. In Chapter 1, I identified these as local and global futures. In *Environments and technologies*, the



question posed is ‘How do I describe, analyse and shape the world around me?’. Similarly, the Tasmanian Essential Learnings notes that:

communities see the curriculum as a means for creating the sort of future they want. Learners’ sense of optimism is dependent on a belief in their capacity to shape the future and to pursue worthwhile individual and community goals (Department of Education Tasmania, 2002).

The Tasmanian Essential Learnings are organised through five curriculum organisers and 18 key elements. The curriculum organisers which form the framework are: thinking, communicating, social responsibility, personal futures and world futures. Furthermore, interwoven across each of the Essential Learnings frameworks are perspectives including: thinking and communication, ethical action, interdependence, and futures. In this regard, futures education is considered as both a specialised curriculum area as well as a dimension across the elements of learning. Within the futures thread, students consider both personal and world futures. *Personal futures* aims to “provide young people with educational experiences that will enable them to engage successfully with current and future change with optimism and resilience”. The key elements that enable these aims to be achieved are ‘building and maintaining relationships’, ‘maintaining well-being’, ‘being ethical’ and ‘creating and pursuing goals’. The capacity to live fulfilling lives and shape futures is based on the “development of a strong sense of identity, maintenance of well-being, development of autonomy and a sense of life purpose and direction”. *World futures* involves investigating systems in the natural and constructed world and their interrelationships. Student learning focuses on the challenge of taking responsibility for long-term sustainability of global ecological systems. Key elements of the world futures curriculum organiser involve ‘investigating the natural and constructed world’, ‘understanding systems’, ‘designing and evaluating technological solutions’, and ‘creating sustainable futures’. Social responsibility incorporates education through ‘creating preferred futures’ (Department of Education Tasmania, 2002).

The *South Australian Curriculum Standards and Accountability* and Essential Learnings document (Department for Education, 2002) identifies local and global change and the need to shape futures in these changing times as its foundation: “as educators, our challenge is to construct a curriculum response which meets the emerging and rapidly changing demands of a

knowledge economy and society” (Department for Education, 2002). There are five foci identified as underpinning the purpose and structure of learning in South Australian schools: ‘Essential Learnings’, ‘Coherence’, ‘Enterprise and vocational education’, ‘Equity’ and ‘Standards’. It is within the focus ‘Essential Learnings’ that futures education is explicitly developed alongside identity, interdependence, thinking and communication. These Essential Learnings are referred to as the resources “which are drawn upon throughout life and enables people to productively engage with changing times as thoughtful, active, responsive and committed local, national and global citizens” (Department for Education, 2002).

The futures learning area focuses on developing flexibility in responding to change, and in developing connections between past and present in order to conceive a variety of scenarios and solutions for preferred futures. In Chapter 1, I identified the notion of the extended present with which this fits. Like the Tasmanian document, this curriculum aims to nurture students’ sense of optimism about their ability to contribute to shaping preferred futures. Based on constructivist pedagogy, it encourages students to critically reflect on, and take action in shaping, preferred futures.

An explicit futures education provides a means by which students can actively shape and contribute to possible futures (see Bell, 1996; Gidley, Bateman & Smith, 2004; Hicks, 1994, 1996a, 1996b, 2002; Slaughter, 1995b, 1996; Tough, 1998). It promotes the empowerment of students to engage in purposeful lifelong learning and to be cognitive and emotionally resilient people, equipped to face diversity and adversity. The children we teach now will live most of their lives in a very different world to the one in which most educators have lived. From this generation will come the leaders of the 21st century:

As the children well know, their future adult life will be greatly affected by what is happening in the world today. It is important, therefore, for teachers and pupils to develop some critical sense of the current state of the world (where we are now) and also of future possibilities (where we want to get to) (Hicks, 1994, p. 2).

In the curriculum documents examined thus far – Queensland, Tasmania and South Australia – FTP have been identified as explicit in the ways in which curriculum organisers and other elements can be clearly linked to notions of educating for a future, and in some instances

multiple futures. In the other state and territory curriculum documents, there is much evidence of an implicit or taken-for-granted role in the school which is educating for the future.

### ***Implicit futures education in curriculum***

In examining the New South Wales curriculum there was a very strong focus on sustainability. Sustainability of the natural environment is equated with educating for the future, and ‘influences’ all practices and decisions undertaken by the Department (see [www.det.nsw.edu.au/](http://www.det.nsw.edu.au/)). The ACT’s *Within reach of us all* (Department of Education & Community Services (ACT)) and the Northern Territory’s *EsseNTial Learnings* (Department of Employment, 2004) refer to the promotion of lifelong learning and the holistic development of citizens and people of the future. *Within reach of us all* specifically highlights six learning outcomes for developing such citizenry as mature, active and informed community, national and international citizens. And, whilst *EsseNTial Learnings* does not embrace an explicit futures education perspective, it does have some useful futures elements in place. It states that “connected lifelong learning are essential in preparing students for complex future life roles” (Department of Employment, 2004) and in personal development from the perspective of four domains of the learner: inner, creative, collaborative and constructive. It is assumed that developing the person through these domains will be enough to prepare them for a future.

I will conclude this identification of FTP within curriculum by considering the Victorian Essential Learnings Standard Framework (Victorian Curriculum and Assessment Authority, 2006). This is particularly relevant as the research site for this investigation is located within Victoria. The teachers in this site are subject to the constraints and opportunities of the VELS document in developing curriculum for the classroom.

VELS is considered the first ‘flagship strategy’ of the Department of Education’s Blueprint for Government Schools (Department of Education and Training Victoria, 2005). As a framework for learning, it states that students need to develop a set of knowledge, skills and behaviours which will prepare them for success in a world which is complex, rapidly changing, rich in information and communications technology, demanding high-order knowledge and understanding and increasingly global in its outlook and influences (Victorian Curriculum and

Assessment Authority, 2006). To succeed in the current context, students need develop capacities to manage themselves as individuals and in relation to others; to develop greater understandings of the world in which they live; and to act effectively within the world. In doing so, the Department of Education and Victorian Curriculum and Assessment Authority forecast a future which is “sustainable, innovative and community based” (Victorian Curriculum and Assessment Authority, 2005). Delving beneath these introductory passages, however, there is a lack of explicit connections between the claims of educating for the future and the ways in which this specific learning takes place. Rather, the curriculum presented strongly re-presents the same content which would have appeared in previous iterations. For example, the Civics and Citizenship content, encouraging students to live democratically in their world, is reminiscent of documents harking back to the 1970s. From a futures perspective, by contrast, students would be encouraged to consider multidimensional constructs of citizenship. These futures dimensions are not developed within the curriculum support materials. Rather, their assumed presence within disciplinary, social and interdisciplinary learning strands represents the futures dimensions as implied.<sup>28</sup>

What becomes clear from the analysis of the Victorian curriculum document is that there is much ‘interdisciplinary space’ which provides opportunities for teachers to incorporate FTP within their curriculum. Currently, whilst futures education is implicit within this document, there is great potential to disrupt the temporal bias which exists. In this thesis, I contend that educators must become more conscious of the futures dimension, and that this consciousness must be explicitly stated in curriculum documents in order to assist students to access both their personal and global futures. This futures consciousness and a more temporally balanced curriculum will only arise through change in teacher practices and curriculum development. It is for this reason that in the next chapter I will focus on the school as a learning environment.

In looking for the temporal domains of curriculum, what was clearly evident is the strong presence of history. In each state and territory’s curriculum documents, there was a clear intention that Australian and other global histories should be taught as core components of

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<sup>28</sup> In this project, through this interdisciplinary strand of learning, the futures dimension will be addressed. This will be discussed in later chapters.

curriculum content. This strongly supports my claim that Australian curriculum is temporally biased towards the past.

In summary, there is a great deal of futures education rhetoric published in social forums and educational institutions. Page (1996, p. 128) argues that “researchers and policy makers frequently pay lip service to the importance of preparing students for the future without seriously addressing this as an objective in their curricula and methodologies”. Much of the thrust of the argument which I will develop in this thesis is around the idea that all education is futures based, whether explicit or implicit. Further, based upon this futures orientation, it is crucial that teachers, schools and curriculum writers become more reflective and cognisant of the critical impetus with which the future(s) implore curriculum development for our present and future generations of learners and livers, and those who live beyond the institutions in which we teach.

### ***A summary before moving on***

This chapter has considered two key concepts developed in this research: temporality and curriculum. In the first instance, I investigated theories which accounted for human development of the concept of time. Specifically, I considered the development of temporal awareness within the Western construct of time. Further, I introduced notions of temporal bias, temporal balance and hinted at some new theorisation around temporal mobility. Having outlined the broader theories of temporal development, I focused upon the more current research interest, time perspectives. Through document analysis, I searched Australian curriculum documents to identify the ways in which FTP were positioned. Drawing on Gough’s (1990) work, I developed a framework for recognising explicit and implicit FTP. Through the curriculum analysis, it was evident that much futures preparation of students is assumed through traditional curriculum content, and that explicit FTP were as Hicks (2002) describes ‘missing’.

In the next chapter, I will explore the final core concept on which this thesis is founded, that is, the notion of the school as a learning environment.

### ***Chapter 3 – The school as a learning environment***

So far I have suggested that education beyond the rhetoric of curriculum documents plays an important role in developing explicit futures capacities within people. In this chapter, I focus on the importance of the school as a context within which futures education can be both taught and learned. Specifically, I explore the fourth core concept on which this thesis is founded – the school as a learning environment. This is an important chapter as it clearly identifies and evidences the potential for futures education to disrupt the temporal bias evident in Australian curricula practice, and to therefore contribute to both teacher and student learning within a school environment. Indeed, Slaughter (2002b) considers the school as an institute of foresight, with the potential to develop rich and critical futures thinking and practice in, for and beyond the confines of daily, structured educational practices.

This chapter comprises three sections. First, I briefly introduce the reader to the school in which this study occurred – Wooranna Park Primary School. Second, I review the ways in which professional development and professional learning teams can be used to facilitate teachers understanding of and developing expertise in enacting futures education in the classroom. In this research, I worked with the teachers over 10 months to both develop explicit futures capacities through a range of professional learning strategies which will be discussed. The third section considers theories of learning more directed at students within schools.

Whilst this thesis more focuses on teacher learning with regard to the enactment of futures education, it is significant to think about these students learning theories for two reasons. The first is that the ways in which the teachers will enact what they learn through these experiences will be influenced by their philosophies and beliefs about student learning. Secondly, in this research I have drawn upon these learning theories to also plan professional learning. As Wooranna Park Primary School draws heavily on the work of Reggio Emilia philosophies and pedagogies of learning, the final part of this chapter will describe the main tenets of this approach in some detail to provide a context for the ways in which planning and practice occurs at the school site.

***Writer's note***

In this thesis, the school and teachers have asked to be named. Their request is reflected upon the ethics' consent forms. Thus, in this thesis, the participating school and teachers are identified.

***An introduction to Wooranna Park Primary School***

Opened in 1971, Wooranna Park is a government primary school servicing the community of North Dandenong. The 366 pupils come from racially and culturally diverse backgrounds. The teaching community capitalise upon the range of backgrounds, claiming that “diversity adds a richness to the learning environment” (Wooranna Park Primary School, 1996 – ongoing). The school negotiates a program of learning through an integrated approach in English, Mathematics, Science, Technology, Health and Physical Education, The Arts, Studies of Society and the Environment, and Languages Other Than English (Japanese). The curriculum is further enriched by a wide variety of special programs and activities which address the needs of learners. Extension programs for academically, athletically and artistically talented children are a priority. Wooranna Park Primary School is an advocate for systemic change in schools.

Prompted initially by a desire to cater for the individual needs of gifted students, the school's focus shifted to developing a whole school approach for these children and eventually to differentiating the curriculum for all students. More recently, the focus has widened to creating a learning environment consistent with constructivist principles and Reggio Emilia philosophies where students are encouraged to co-create their learning and use available facilities creatively. There are many reasons why Wooranna Park is such a rich learning environment within which to conduct this study, and these will be discussed in Chapter 5.

### ***Professional development and professional learning: facilitating teachers understanding and enactment of futures education***

There has been political and systemic acknowledgement that teachers need to engage in professional development as a requirement of their work (Hargreaves, 1994; Ling & Mackenzie, 2001). As professionals, they need to update their skills and knowledge continuously, not only in response to a changing world but in response to new research and emerging knowledge about learning and teaching (Australian Council of State School Organisations, 2007; Department of Education & Training, 2005).

Wenglinsky (2000) and Darling-Hammond (2000) argue that, to be effective, teachers need a deep understanding of the subject area, knowledge of how students learn specific subject matter and a range of strategies and practices that support student learning. In this research, I have attempted to build capacity in teachers' knowledge (specifically in futures), through a series of formal professional development sessions. I will briefly outline what I mean by the term professional development and professional learning, and then describe common approaches which are utilised across educational sites. A brief synopsis of the literature describing effective practices in this area is indicative of the way in which these sessions have been constructed and facilitated. I will highlight particular theories from within the professional development and professional learning literature which I will draw on when discussing and analysing data in later chapters.

#### ***What is professional development and professional learning?***

In the Australian context of education, the concept of professional development is generally understood as in-service teacher education (Torff, Sessions & Byrnes, 2005). In general, it is distinguished from pre-service teacher education and applies to teachers who are practising and experienced (Ling & Mackenzie, 2001). However, literature suggests that defining 'professional development' may be much more problematic (Hargreaves, 2000a; Ling & Mackenzie, 2001; Peters, 2001). The complexities lie within a notion of the professionalism of teachers, and how the construction of what it is to be professional can be 'developed' or learned.



In discussing what it means to be a professional, Goodson and Hargreaves (1996) claimed that there have been many interpretations. Along with Zuzovsky (2001), they acknowledge various forms of professionalism:

*Classic professionalism:* where teaching is perceived as an applied science and is considered to have a specialised knowledge base and technical culture. In this view, the professional teacher is characterised by strong ethics of service and standards of practice. The other variations of this notion of professionalism focus on the reflective capacities of teachers (Zuzovsky, 2001).

*Flexible professionalism:* which focuses on building local professional communities, creating cultures of collaboration and replacing an ideal of scientific certainty with the aim of situated, context-related certainty (Hargreaves, 2000a).

*Practical professionalism:* which, by contrast, shifts away from the notion of localities and shared knowledge of teaching within the community. Professionalism is private and experiential – the personal construction of practical knowledge is achieved by interpretive critical reflection about action, as well as the social conditions and consequences of one's actions as a teacher.

*Extended professionalism:* which includes a broader perspective of the school, and also includes the theoretical dimension that underlies practical experiences.

*Complex professionalism:* which acknowledges teaching not only as extended work, but also as complex in terms of knowledge, reasoning and tasks (Zuzovsky, 2001).

The meaning of the term 'professional' and indeed the phrase 'professional development' is therefore contingent on one's perceptions or understandings of teacher professionalism. Additionally, the use of the word 'development' in the phrase 'professional development' can be perceived as suggesting that teachers are in need of improvement. Instead, Miechtry and Smith focus on 'professional growth' which they describe as a slow and gradual process of change which involves multiple dimensions. Dismissing semantics, Zuzovsky (2001, p. 135) argues that the professional development of teachers is related to "growth in reflective skills and in awareness of the values that underlie and ultimately determine their actions". Others talk about professional development as a conduit of change in the education system, as well as in the theoretical and practical knowledge and attitudes of individuals of whom the system is composed (Darling-Hammond, 1999; McRae et al., 2001; Pill, 2005). In addition to bringing

about the potential for change, Ling and Mackenzie suggest that professional development is regarded as a “means of empowering teachers and administrators by providing them with an ability to update and upgrade their knowledge and qualifications” (2001, p. 92).

### ***Phases of professional development***

McRae et al. (2001) identify four main periods of professional development in Australia over the past 50 years, characterised by particular approaches. Similarly, Hargreaves (2000a) highlights four ‘professional’ phases over the same span. Their periods overlap and together give an insight into how we have arrived at the present approach to the professional learning of teachers. Below I overview the first three of these periods.

*The 1950s and 1960s:* McRae et al. (2001) suggest that these decades were characterised by a highly centralised process of training which had limited but nevertheless very clearly defined goals and structures. Teaching focused on the management and learning of the whole class, and the teacher worked within the isolation of the classroom. Hargreaves (1994) referred to this as the ‘pre-professional age’. Traditional patterns of teaching enabled teachers to meet ‘four fundamental’ demands in the classroom – maintaining student attention, covering content materials, motivating students, and some degree of mastery of what has been taught. In a time of pedagogical certainty, constructed professional learning for teachers was a matter of apprenticing oneself as a novice to someone who was skilled and experienced in the craft.

*The 1970s and early 1980s:* Hargreaves (2000a) refers to these years as the *age of the autonomous professional*.<sup>29</sup> Tensions in the way that teachers operated within their classrooms and how schools functioned within the bigger context of education emerged and this period saw a dynamic shift between child-centred and subject-centred pedagogies, open classrooms and closed classrooms, traditional methods and progressive methods. Pedagogical expertise was no longer considered something that could be passed on as an assumed tradition from expert to novice. For increasing numbers of teachers, pedagogy became an ideological decision;

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<sup>29</sup> “Over time, many teachers were granted a measure of trust, material reward, occupational security and professional dignity and discretion in exchange for broadly fulfilling the mandates the state expected of them” (Hargreaves, 2000a, p. 159).

an object of judgement and choice (Hargreaves, 1994). The focus shifted to in-service<sup>30</sup> training which was still under central control, but with a higher level of awareness of individual needs with teachers learning together (McRae et al., 2001). The benefits seldom became integrated into classroom practice, as course-goers returned to schools of unenthusiastic and uncomprehending colleagues who had not shared the learning with them (Fullan, 1999; Hargreaves, 2000a).

*The late 1980s to the present: In the age of the collegial professional* (Hargreaves, 2000a), “schools have been given greater responsibility for goal setting, school management planning and decision making about the deployment of funding and the employment and professional development of staff” (Peters, 2001). A number of emerging factors have impacted upon the teaching and non-teaching roles of the educator, including increased teaching content, new understandings about teaching styles and methods, integration of special needs students into mainstream settings and changed administrative structures. Each requires new ways of working with students and school communities, and these have often pushed teachers to teach in ways which were completely foreign to them (Darling-Hammond, 2005; Hargreaves & Fullan, 1992). One-off professional development sessions were utilised to address particular school needs. The professional development (PD) period of the 1980s and early 1990s (McRae et al., 2001) was facilitated by the widespread institution of pupil-free days which provided teachers with opportunities to undertake PD within school hours. The central control of the development agenda was qualified by the local control, with schools largely choosing the focus of the PD and some teachers taking particular responsibility for it (Skilbeck & Connell, 2003).

### ***Contemporary approaches to professional learning***

One of the problems teachers have faced in gaining access to adequate and ongoing professional development has been the allocation of resources. Many teachers have claimed that professional development funding to school in this ‘global economic rationalist era’ has been reduced, giving schools autonomy in decision making and individual teachers less

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<sup>30</sup> In-service approaches generally referred to an expert from outside the school, entering the environment with a specific learning objective for the whole staff of a school (Ling & Mackenzie, 2001; Peters, 2001).

opportunity to attend professional development which is self-chosen (Ling & Mackenzie, 2001, p. 94). In response to expanding knowledge bases, and limited resources, providers and schools have had to become more creative in the ways in which professional learning occurs.

The past two decades have seen the emergence of a range of models of teacher development, emphasising either cognitive growth, epistemological development, or an amalgamation of conceptual, personal and social dimensions (Tytler, Smith & Grover, 1999). Currently professional development activities across Australia utilise a range of delivery modes (Ingvarson, 2004), and tend to focus on pedagogy and curriculum, although many other roles and responsibilities of teachers are also included (Yates, 2005). Professional development includes not only formal meetings and courses, but also informal opportunities for teachers to work with each other and negotiate their own learning paths (Trehearne, 2005).

### ***Transmissive learning activities***

Formal and transmissive professional development activities are privileged over informal ones. These are often characterised by teachers typically sitting and listening to an expert.<sup>31</sup> In these settings, the expert advocates hands-on learning for students, but provides little opportunity for teachers to put what is said into practice during the training (Darling-Hammond, 1999). Mixed amongst these transmissive approaches, teachers also assume the role of expert within their schools. These approaches are dominated by activities such as workshops, conferences and school-based in-services.

School-based programs are designed within the professional site by the personnel. They sometimes draw upon outside expertise in the form of consultants, or partner co-operative ventures with other sectors of the education system (Anderson & Henry, 2005). In-house programs usually focus upon a specific initiative, curriculum policy or program which has been identified as needing to be addressed by the school staff itself (Darling-Hammond, 2005). The staff may work as a team or as a series of sub-committees assigned to different but

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<sup>31</sup> Scribner (1999) reports that whilst teachers enjoyed the opportunities for experts to work closely with them onsite, they also found listening to experts useful as long as the ideas were intellectually challenging and relevant to their unique contexts.

complementary tasks in the whole project. These programs may appear to be the most cost-effective as they may not draw upon outsiders, but are not necessarily cost-effective in terms of resultant change in a school (Ling & Mackenzie, 2001).

Common forms of school-based approaches include coaching and mentoring, face-to-face training, ‘train the trainer’ models, and in some instances web-based training. In coaching and mentor approaches, peers work in partnerships or small teams to integrate new learning in the classroom. In general, it remains that learning is directed by someone else. Poplin (2003) suggests that within the coaching and mentoring dynamic, peers build important relationships that allow for the planning, modelling and reflecting on new learning techniques with a focus on core curriculum and classroom practice. Less commonly, face-to-face training withdraws teams of teachers from the classroom during the school year and links learning to intensive and measured new input from an expert in a particular field (Ling & Mackenzie, 2001). In this approach, teachers remain within the school site, and often work collaboratively for long hours to refine their curriculum planning and build upon subject knowledge (Poplin, 2003). Face-to-face training is often consolidated by ongoing withdrawals and other planning as programmed into the school year. Examples include what some (Department of Education & Training, 2005) refer to as a lesson study. Intensive coaching, mentoring and face-to-face training help teachers to prepare lesson plans and develop a deeper understanding of how students learn specific subject matter. A small group of teachers meets regularly to plan, design, implement and evaluate units of work. The aim is to promote a process whereby teachers experience gradual and incremental professional growth through the collaborations and expertise of others.

The ‘train the trainer’ model (Peacock, 2001; Poplin, 2003) is more frequently used within business sectors, but has been utilised across Australian schools. In this model, a person or a small representative group of staff are sent for formal training in a particular area to be learned. For example, in the rollout of literacy initiatives by the Catholic Education Office, Melbourne in 2000, literacy coordinators from across the state were involved in intensive professional learning. Upon the completion of their training, they were expected to reproduce the content for teachers back in their originating school, and were therefore positioned as the expert in the relevant area.

Education is slowly seeing the emergence of web-based learning. Web-based learning (Mioduser et al., 2000) runs in a number of forms, but predominantly through the uploading of specific teacher modules to a virtual space (Burbules, 2004) which is internet based. In most instances, the web-based modules are static, and only produce interaction between teacher and content, but there are more interactive sites, which encourages virtual learning communities and interactions between teacher-teacher, teacher-content, and teacher-content-teacher (Rogers, 2000).

In Western cultures nearly all professional development occurs in workshops or courses held after school or on weekends (Darling-Hammond, 2005). Outside of school, course attendance is the main vehicle for professional development (Boyle, While & Boyle, 2004). These courses focus more broadly upon curriculum documents, practices and innovations, and are facilitated by Departments of Education, curriculum associations and tertiary institutions. It has become more common for universities to offer professional development modules which may be taken individually or may be combined into a course will be granted credit towards a formal university award (Ling & Mackenzie, 2001; Scribner, 1999). Currently, there is a move away from one-off professional development meetings and workshops to more complex and sustained forms of contact amongst teachers and with those who support them (Van Kraayenoord, 2003).

There are many aspects of this study in which transmissive learning strategies were employed. In the initial stages of entering the school, the teachers had limited understanding of futures perspectives. For the first six to eight weeks, I worked with the teachers drawing upon mentoring and 'train the trainer' models to provide a basic futures knowledge foundation. These were the most effective strategies for teacher participation in futures based activities; these they could then draw upon when entering their own learning spaces to facilitate student learning. Beyond the early stages of this project, more open-ended professional learning strategies were used.

### ***Informal and self-directed learning activities***

Whilst the previous discussion has focused on professional development models which are facilitated by others, much professional learning in schools is generated through experiential (Meichtry & Smith, 2007; Moon, 1999; Pill, 2005) and reflective practices (Berman Brown & McCartney, 1999; Peters, 2001; Smyth et al., 1999) of teachers in their daily lives. Both individual and collaborative inquiry is a powerful learning activity for teachers (Crockett, 2002). Working through their practices and relying on their own efforts, teachers often address professional concerns through reading and research. “Individual enquiry is predominantly focused on developing depth and breadth of content knowledge” (Scribner, 1999, p. 251). In these approaches, learning is much more emergent and open-ended, and arises from teacher work. Action research, examination of student work, study groups, case discussions and peer observations are all examples of experiential and reflective work undertaken as professional learning.

Action research is depicted as a means of engaging practitioners in rigorous cycles of planning, observation, action and reflection which can lead to change in understandings and practice (Peters, 2001). In this process, teachers decide what questions are important to examine in order for them to gain insight into what is happening in the classroom. It involves selecting a focus, collecting, analysing and interpreting data and then taking action. As a professional learning strategy, it is based on the belief that teachers have the ability to formulate valid questions about their own practice and to pursue objective answers to these questions (Department of Education & Training, 2005). Action research assists teachers to become more reflective practitioners and more systematic problem solvers. Walker (2001) also saw action research as a methodology that would allow teachers to research practice with a view to changing or improving it, but at the same time also to critically review practice.

The analysis of student work as a source of professional learning also demands reflective practices. Poplin (2003) suggests that looking carefully at students’ written work and listening carefully whilst students explore worthwhile tasks can contribute to a teachers’ professional development. Furthermore, according to Darling-Hammond (2000), working with peers to collaboratively examine students’ work enables teachers to understand how students think,

permitting them to develop appropriate learning and teaching strategies and materials (Department of Education & Training, 2005). Curriculum making and learning through curriculum reflection can act most effectively as a venue of learning when it engages teachers in considering how to manage the multiple relationships of curriculum making.

Study groups engage in regular collaborative interactions and topics identified by the group (Garet, 2001). This provides opportunities to reflect on classroom practice and student learning. Teachers also read and discuss educational research publications in a collaborative and supportive environment, over an extended period of time. The study group model can include the entire staff in the school in finding solutions to common problems (Department of Education & Training, 2005). Similarly, case discussions provide teams of teachers with the opportunity to reflect on teaching and learning by examining narrative stories or video tapes depicting school, classroom, teaching or learning situations or dilemmas (Borko & Putnam, 1995). Case discussions form a reflective dialogue and enhance teachers' ability to describe, analyse and evaluate the teaching (Department of Education & Training, 2005).

Boyle, While and Boyle (2004) highlight that one of the most effective ways to learn is by observing others, as well as by being observed and receiving specific feedback from that observation. Analysing and reflecting on this information can be a valuable means of professional growth. The most effective observations are well planned, focused on specific issues and include follow-up to document improvements. Observation and the subsequent discussion promotes an open environment where public discussion of teaching is encouraged and supported (Department of Education & Training, 2005).

### ***Professional learning teams and communities***

According to Hargreaves, collaboration is “one of the emergent and most promising meta-paradigms of the postmodern age ... as an articulating and integrating principle of action, planning, culture, development, organization and research” (1994, p. 245). According to teachers, isolation from peers has an insidious effect on teacher learning by creating invisible walls between teachers and diminishing the valuable role that activities such as collaboration



can have in their practice (Scribner, 1999). Furthermore, as a profession which is positioned as one which nurtures learners and learning, Gunn (2001) suggests that we have an obligation to create, foster and encourage conditions whereby individuals *cooperate with* rather than *compete against* one another in the curriculum process. Inherent in this call for collaboration is that the act of planning and working together, by itself, is a powerful professional development tool (Brownell et al., 2006).

Fullan (1999, 2005a), Anderson and Henry (2005) and Trehearne (2005) all discuss the elements of an effective professional learning community. For Fullan (2005a), a learning organisation is a place where people continually expand their capacity to create the results they desire. Further, it is where new and extensive patterns of thinking mature amidst the ongoing interaction of reflective practitioners. In Fullan's (2005a) notion of a professional learning community, teachers learn about a new idea, trial it in their classrooms, reflect on it, talk about the results with their colleagues and then refine it and try again. As a result, according to Anderson and Henry (2005), the professional learning community makes evident the importance of teachers being open to new ideas, sharing their work and supporting school-wide efforts to improve teaching as a fundamental part of school improvement and student achievement.

Trehearne (2005), describes a more grounded approach which is based upon research methodologies. The first and most significant element in growing an effective learning community is the uniting of teachers under a common purpose, shared vision, collective commitment and specific measurable goals. The second is engagement in action research which arises from the shared purpose but is generally focused upon studies into effective teaching and learning. The third element is a constant focus on gathering evidence of student learning. Through the cyclic and ongoing nature of professional learning communities, the team is committed to continuous improvement, where the shared focus is grown and sustained.

Professional learning teams are an effective means of developing a culture of collective responsibility in schools (Brownell et al., 2006). Scribner (1999) claims that teachers working in the same context as their peers are much more likely to address critical teaching needs, and colleagues are much more willing to listen. In professional learning teams, teachers remain

accountable for individual students, but also take responsibility collectively for improving instructional practices to achieve gains. It involves teachers working in the spirit of openness and critical reflection, sharing their individual classroom or student experiences, ideas and the expertise with each other and engaging in an ongoing process of inquiry. This, in turn, means that the work of teams is guided by a clear and systematic model of problem solving and learning that encompasses a “learning-application-refinement-applications cycle” (Department of Education & Training, 2005, p. 9). In this way, teachers actively support each other to construct knowledge and develop pedagogy which builds local capacity to improve student learning. A number of writers (Australian Council of State School Organisations, 2007; Bell & Gilbert, 1994; Department of Education & Training, 2005; Peters, 2001) assert that students are clear beneficiaries of a team-based approach, and that benefits also flow to teachers by growing their knowledge, skills and confidence, and to schools and the system through school improvement.

Professional learning teams facilitate teacher confidence not only to be reflective, but also to share these reflections for the improvement of others. According to Van Manen (1995) and Zeichner (1999; Zeichner & Liston, 1996), there are three types of reflection: technical (reflection on actions), practical (reflection on the reasons for actions) and critical (reflection on the ethical justification of actions). Reflection is an important process for educators; teachers must consider the reasons for making particular choices, how these are informed by their personal experiences, beliefs and values, and the extent to which these support or impede teaching and learning for students from a diverse range of backgrounds. Smyth et al. (1999) believe that this process of confronting personal experience and philosophy can lead to changes in beliefs and understandings that lead in turn to improved practice.

However, in highlighting the benefits of using these strategies, I have become also aware of the deficits. Boyle, While and Boyle (2004) and Brownell et al. (2006), whilst encouraging the formation of professional learning teams, are also cautious that school staff can become too insular and introspective in not having enough contact with ‘other’ external expertise. Similarly, Hargreaves warns that “moving teachers’ professional learning and preparation more towards the school site may increase its collaborative and practical potential, but in excess, it is severed from the academic and other worlds altogether” (2000a, p. 166).

Brownell et al. (2006) query whether all teachers learn equally from working together. Their research on staff development and collaboration suggests that individual teachers do not profit equally, even when the conditions of collaboration are positive. Simply put, some teachers are likely to learn a lot and others are likely to learn not much at all. For this reason, Trehearne (2005) suggests that it is not enough to simply visit other classrooms to broaden perspective and passively observe, but that it is very important that teachers attend networking meetings, district-level sessions, conference and team meetings. Further, she suggests that is important for teachers to attend a conference or networked session individually to have the opportunity to reflect and share with the team and implement a new practice and discuss the results. Subsequently, a more distributive style of leadership will emerge as different initiatives will be coming from different sources.<sup>32</sup>

In the following section, I will outline theories which influence the ways in which teachers plan for student learning. This is important in this thesis, as ultimately, I am investigating the ways in which futures perspectives transform teacher practice. Much of this teacher practice is situated within a learning environment and focuses on the ways that teachers teach and teachers and students learn.

### ***Student learning theories***

My purpose in writing this thesis is underpinned by a passion for education: to further educational discourse about how learners both learn and know in their lifeworlds. At the beginning of my doctoral studies, I was convinced by and committed to the development of constructivist learning environments. Much of the futures literature assumes that notions of the

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<sup>32</sup> In this project, I will act as one of those sources of information, and as expert as discussed previously. Proponents suggest that potential benefits of teachers and tertiary teacher educators working collaboratively include:

- reciprocal development of schools and teacher education departments
- improved learning opportunities for participants and their students
- increased relevance of educational research
- reduced isolation for teachers and academics
- improvement in school/university links
- changes in participants' thinking
- changes in participants' practice (Peters, 2001).

future are constructed, and at the beginning of this doctoral research my research question is in line with this and asks how people construct their notion of the future. Whilst I begin this discussion with a visit to constructivist learning theory, I do so to develop an understanding for the reader of how I came to critique the limitations of futures pedagogy through my reading of enactivist learning theories.

Curriculum documents reflect ideologies of dominant learning theories, which are apparent at the time of their publications (Apple, 1990). Currently, Australian curriculum documents are largely underpinned by an amalgam of personal and social constructivism.<sup>33</sup> Theories of how people learn continue to develop, and constructivism proposes how ‘knowledge’ occurs or is stored. Previously, beliefs about how students learned were based upon the objectivist, behaviourist and cognitive approaches.

### ***Constructivist theories***

The word *constructivism* currently has multiple meanings. It refers to a philosophical view about the nature of reality and perception, is a theory about how people learn, and increasingly represents an array of teaching strategies (Colburn, 2000). Constructivists contend that we make (construct) our own worldview and knowledge (Sewell, 2002). They argue that experiences and viewpoints affect how everyone perceives the world and that reality is personal construction (Driscoll, 2005). For many constructivists, ideas are not held to be absolutely true or false, because there is no way to know if everyone’s ideas about the nature of reality are comparable (von Glasersfeld, 1996). Rather than talking about what is scientifically true, constructivists talk about what is generally agreed upon by the majority of the scientific community (Colburn, 2000; Murphy, 1997). In comparison with how the person interprets and constructs a reality based on their experiences and interactions with their environment, Von Glaserfeld (1996) focuses instead on the notion of viability. In this view, concepts, models, theories and so on are viable if they prove adequate in the context in which they were created.

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<sup>33</sup> I acknowledge here the range of constructivist modes which have emerged, and continue to emerge, but largely focus on dominant influences upon curriculum documents, in personal and social constructivisms.

Constructivism is a learning theory which attempts to explain how learners make meaning through language and other sources of information (Crebbin, 2000, p. 1). It rests on the assumption that knowledge is constructed by learners as they attempt to make sense of their experiences. In this way, the learner is not seen as an empty vessel waiting to be filled, or ‘tabula rasa’ (Crain, 2000), but rather as an active organism, seeking meaning.

There are many versions of constructivism: personal, radical, social, physical, evolutionary, postmodern, social, information-processing. Ernest (1995, p. 459) points out that “there are as many varieties of constructivism as there are researchers”. At one extreme, personal or trivial constructivism stresses the individual’s construction of knowledge and is concerned with the accuracy of the representation, and the learner’s effectiveness in making meaning of his/her experiences (Colburn, 2000). At the opposite end of the spectrum, radical constructivism rejects the notion of objective knowledge and argues instead that knowledge develops as one engages in dialogues with others (von Glasersfeld, 1996).

Constructivist processes operate regardless of what is being learned, and “learners form, elaborate, and test mental structures until a satisfactory one emerges” (Driscoll, 2005, p. 387). These mental structures are what Piaget (1997) referred to as schema, or existing knowledge. As new experiences cause conflict between new sensory knowing and existing schema, constructivists believe that knowledge is then reconstructed for the knower. Piaget (1997) referred to these processes of knowing as ‘accommodation’ and ‘assimilation’.

Constructivist models of learning emphasise students’ development of new knowledge through active construction processes that link new knowledge to prior knowledge. Instead of passively receiving or merely copying input from teachers or textbooks, they actively mediate the input by trying to make sense of it and relating it to what they already know about the topic. Good (1995, p. 178) suggests that “teachers need to go beyond information transmission models (teachers or texts tell, students memorise) and move toward knowledge construction models of teaching and learning”. Constructivism urges the inclusion of structured reflective discussions of the meanings and implications of content. Students should have opportunities to use content as they engage in inquiry, problem solving or decision making.

Constructivists believe that models of learning should place much more emphasis on the learner's own construction and organisation of knowledge. A teacher should guide students' learning efforts, but students develop their current knowledge in their own ways rather than being moved through predetermined sequences of objectives. A topic is introduced at the students' knowledge level; they stay there until a complete base of information has been developed. Teachers then move students to the comprehension level by helping them begin to translate the information into different terms, probe its connections, then move on to the application level, and so on. Movement to higher levels (analysis, synthesis and evaluation) occurs only after mastery of lower levels has been accomplished<sup>34</sup>.

While acknowledging the role of the teacher, previously constructivist learning theory maintained that learning is not the result of teaching; rather, it is the result of what students do with the new information they are presented with. Constructivists maintain that students are *active learners* who construct their own knowledge; they are not passive recipients of the new information, somewhat like a sponge (Sewell, 2002). And, whilst traditionally constructivists have looked at learning as an individual act, social constructivists have identified the ways that learning occurs through the interaction of individuals in different contexts.

### ***Social constructivism***

Social constructivists emphasise that the process of learning occurs as an active construction of meaning, and is most effective in social settings where individuals engage in sustained discourse about a topic:

Exposure to new input from others makes them aware of things they did not know and leads to expansion of their cognitive structures. Exposure to ideas that contradict their own beliefs may cause them to examine those beliefs and perhaps restructure them (Good, 1995, p. 190).

As the need to communicate their ideas to others forces these individuals to articulate those ideas more clearly, in turn, conceptual understandings are sharpened, and connections between schemas and lifeworlds are recognised. As a result, cognitive structures are deepened and better developed.

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<sup>34</sup> Good (1995) claims that misuse of hierarchical schemes of cognition to guide curriculum development has implanted the notion that instructional strands are hierarchies of knowledge that learners must proceed through in sequence.

Vygotsky<sup>35</sup> (1987), a key social constructivist theorist, believes that children initially acquire much of their cultural knowledge through overt speech. This knowledge is further elaborated on and connected through inner speech, or thinking mediated through language, referred to as ‘self-talk’ (Vygotsky, 1979). Language as a mediator of thought is critical to a social constructivist perspective, because thought is not merely expressed in words; it comes into existence through them (Verenikina, 2003).

Vygotsky’s emphasis on the social aspects of learning is reflected in his conception of two levels of development: actionable and potential. Actionable levels are where learners work in solitude, and are similar to Piagetian notions where learning must be constructed, deconstructed and reconstructed within the individual. Potential levels are where the child’s problem-solving capacities are enhanced by adult guidance, or in collaboration with more capable peers (Henning, 1998). These potential levels of development are strongly linked to well-known notions of Vygotsky’s Zone of Proximal Development (ZPD) and Bruner’s ‘scaffolding’.

Vygotsky (1978) suggested that learning proceeds most efficiently when children are consistently exposed to teaching in the ZPD. The zone of proximal or potential development perhaps is the best-known concept of Vygotskian socio-cultural psychology. Initially, it was elaborated for psychological testing in schools (Vygotsky, 1962). Vygotsky stated that testing should be based not only on the current level of a child’s achievements but also on their potential development. The actual level of development does not sufficiently describe development. Rather, it indicates what is already developed or achieved (Verenikina, 2003). The level of assisted performance indicates what a person can achieve in the near future, what is developing (Vygotsky, 1978). Thus, the zone of proximal development refers to the “range and knowledge and skills that students are not yet ready to learn on their own, but could learn with help from teachers” (Good, 1995, p. 192). According to Cole and Cole (2001), the term

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<sup>35</sup> Just as Piaget has been considered by some as the recognisable theorist of personal constructivism, so too have Vygotsky and Bruner, been considered key theorists in social constructivism. It is for this reason that much of my literature review will address their thinking.

‘proximal’ indicates that the assistance provided goes just slightly beyond the learners’ current competence, complementing and building on their existing abilities.

Bruner (Bruner & Anglin, 1974) refers to this assistance from teachers and informed others as *scaffolding learning*. Scaffolding refers to the gradual withdrawal of adult control and support as a function of children’s increasing mastery of a given task (Verenikina, 2003; Vialle, Lysaght & Verenikina, 2005). Scaffolding has been interpreted in a wide sense as “a form of support for the development and learning of children and young people” (Rasmussen, 2001, p. 570). In some texts, direct instruction is referred to as the highest level of scaffolding. Techniques of scaffolding assume various forms of adult support: demonstration, dividing a task into simpler steps, providing guidelines, keeping attention focused as well as providing examples and questioning (Verenikina, 2003). Mousley (2001; Murphy, 1997) suggests that scaffolding emphasises the relevant features of what is to be learned to reduce the need for broader cognitive load, demonstrating and modelling, and gradually reducing tutor dependence (the scaffold) so that the task is eventually performed without help.

Attached to this notion that teachers act as scaffolding mechanisms, Bruner also contended that learning in schools must have a purpose, and that teachers must be purposeful in developing curriculum – the construction of knowledge is pivotal to the process of education. Bruner posed a number of questions to ascertain the purpose of learning for learners within a classroom and to evaluate developed curriculum. He asked whether, when fully developed, classroom knowledge is relevant and worthwhile to an adult’s knowing. Furthermore, he sought to resolve whether having constructed knowledge as a child results in this person becoming a better adult. If the “answer to both questions is negative or ambiguous, then the material is cluttering the curriculum” (Bruner, 1960, p. 52).

Bruner (1960, p. 33) takes seriously the notion that “any subject can be taught effectively in some intellectually honest form to any child at any stage of development”. Bruner extended aspects of Piagetian theory to suggesting that there are three different modes of knowing. These he termed the enactive, the iconic and the symbolic modes of thought. These three categories represent the essential ways in which children make sense of their experiences: through their actions, by means of visual imagery and by using language. Although Bruner’s



three categories are presented as developing in sequence, like Piaget's stages they increasingly overlap rather than substitute each other. Bruner believes that the most meaningful learning is developed through discoveries that occur during exploration motivated by curiosity. In this way, "educational psychologists increasingly are depicting learning not just as the cognitive mediation of knowledge acquisition but as a constructive process in which learners proceed in their own ways to build unique representations of the content" (Good, 1995, p. 190).

Socio-cultural theories of learning, such as social constructivism, focus on the learning which occurs inside and outside of formal school life (Sullivan Palincsar, 1998) as well as on the acquisition of intellectual skills which emerge through social interaction. They see learning as modified interactively within social groups, with children developing skills and abilities to participate in common social practices by such means as appropriate language, actions and artefacts in goal-oriented activities. Each of these shapes what can be learned, and hence influences both current knowledge and future possibilities.

For social constructivists, development occurs as children learn general concepts and principles that can be applied to new tasks and problems, whereas from Piaget's perspective, learning is constrained by development (Sullivan Palincsar, 1998). From a socio-cultural perspective, learning and development take place in socially and culturally shaped contexts, which are themselves constantly changing; there can be no universal representation which adequately represents the dynamic interaction between the external and the internal aspects of development (Berk, 2002). There is no generic development that is independent of communities and their practices.

Contemporary interest in social constructivist perspectives is propelled by recent educational reform efforts in encouraging students to assume a more active role in their learning, to explain their ideas to one another, to discuss disagreements and to cooperate in the solution of complex problems, while teachers participate in the design of these contexts and the facilitation of this kind of activity (Crebbin, 2000).

### ***Limitations of constructivism***

Begg (1999) and Hanrahan (2003) outline several limitations of constructivism. They focus on the ambiguous role of the teacher, and lack of practical resources and professional development which can be accessed within a school. Further, they suggest that constructivist approaches are not inclusive, and privilege knowledge associated with dominant Western epistemologies. Others, like Henning (1998), are concerned about the lack of critical dimension and learning which occurs. Reid (1996), Bateman (2006) and Begg (2002) are similarly concerned about the very structured cognitive knowing which is privileged, and look for the learning theories which also incorporate the 'non-cognitive' domains of personhood and learning.

Looking firstly at the ambiguous role of the teacher, Murphy (1997, p. 10) identifies the teacher as a 'coach and analyser' of strategies associated with solving these 'problems'. In this role of coach, the teacher plays a key role in enabling students to make connections between their concepts/schemata and their experiences. For von Glaserfeld (1995, p. 12), teachers play the role of a "midwife in the birth of understanding as opposed to being mechanics of knowledge transfer". Curriculum documents promulgating constructivist approaches further urge teachers to be guides, coordinators, facilitators, resource advisers, scaffolds, supports, tutors or coaches (Murphy, 1997). In developing futures perspectives within a classroom, I will argue that the teacher needs to be present as a participant beyond these other roles. As the teacher is unable to colonise a single futures image or scenario, they will also take on roles alongside the students to critique, analyse and synthesise what is suggested, and to stimulate new questions and directions for investigation.

For Hanrahan (2003), constructivism lacks a critical dimension, that is, she is concerned by a lack of structures or mechanism which would avoid the construction of undesirable or incorrect outcomes. Mousley (2001). Colburn (2000) and Good (1995) write in great detail about the lack of direction to teachers to ensure accuracy, in what students 'construct' and reconstruct as knowledge. Futures thinking has two different processes in which students engage. In the first instance, a student requires generative thinking in order to develop various futures frames. It is in the second instance where students engage in the critical dimension, considering whether what has been produced is possible, probable and preferable. Students alongside their teachers

drawing upon various resources to critique and evaluate the appropriateness or potential of what they have generated. It is important to note that accuracy in futures thinking is unable to be precise due to its very open-ended and speculative contexts. As previously highlighted, futures thinking is multidimensional and interdisciplinary. It would not be possible for any teacher to have the expertise to traverse the multiple paths which students could explore.

Begg (1999) is concerned that constructivism skews a particular way of working, as well as a particular knowledge base; both which reflect dominant, white, middle-class, Western cultural values. Constructivist approaches in Australian classrooms assume a 'common' prior knowledge and range of experiences, based on similar culture, ethnicity, gender performance and socio-economic status, specific to but radiating from a particular location.

I concur with Inayatullah, Bussey and Milojevic (2006) that current learning theories and pedagogies, such as constructivism in schools, are concerned only with cognitive knowing. What is missing from constructivism is a recognition that learning is a personal, emotionally embedded process in which networks of unconscious and subconscious tacit knowledge have the potential to impact on the multiple ways in which the students interpret information without any conscious awareness (Crebbin, 2000). There is a great deal of information which is processed by the brain at a subconscious level and we can only become aware of impacting signals when they reach a certain threshold level. It is now recognised that learning and interpretation can occur during subliminal perception and/or other learning without awareness (Damasio, 1994). In this way, "all the richness of our mental life – all our feelings, our emotions, our ambitions, our love lives, our religions, sentiments" (Ramachandran, 2005, p. 3) are disregarded in what is valued<sup>36</sup> by institutions which will employ a majority of our formative years, across formal schooling. Similarly, constructivism does not take into consideration 'unintended' learning which occurs, and only acknowledges reception of knowledges which are planned or implanted.

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<sup>36</sup> Surely what is valued by our schools is encapsulated within the curriculum presented, but moreover by what is reported to parents/carers about what the students have achieved over the academic year. It is valued by the 'mark' or grade which is given, and then positions learners in a comparative and competitive space (see also Reid, 2005).

As a futures educator, constructivism lacks the explicit ‘doing’ dimension. Rather, it promotes the building of knowledge as occurring objectively, or outside of the learner. To some extent, I am committed to the belief that the knowledge process is cumulative, but am not convinced that we ‘build on’ knowledge. Rather, I believe that understandings result in a deepening and broadening of knowledge, as we engage within our lifeworlds. Constructivism is a cognitive theory of learning which does not articulate the ‘non-cognitive’ learning which also emerges during a person’s life. For this reason, I have been interested to learn about an alternative learning theory – that of enactivism.

Beyond thinking about enactivism as merely a theory of student learning, in developing my approaches to professional learning within this research, I have identified strongly with notions of emergences, co-emergences, as well as in the multiple ways that people come to know through being and doing. As will be highlighted in Chapter 7, enactivism has also strongly contributed to the ways in which I have analysed and represented my findings within this research.

### ***Enactivism***

Enactivism is a theory about learning, and knowing. It draws from phenomenology, constructivism, ecology, and systems and complexity theories (Reid, n.d.). Enactivist theorists claim that complex learning theories expand on the notion of cognition systems and combine together knowledge, activity and identity (Begg, 1999, 2002; Davis & Sumara, 1997; Mousley, 2001). They contend that what sets enactivism apart from dominant Western theories is that learning and knowledge emerge from within a number of dynamic and interacting agents. Whereas constructivism and previous learning theories identified learning as occurring as a result of what happened outside of the learner, enactivism recognises the learning and knowledge which occurs within the individual, as well as amongst the agents with which the learner coincides – both intentionally and unintentionally. In this way, Reid (1996) suggests that enactivism can be captured by the phrase ‘knowing is being is doing’.

There is much written about enactivism as a complex theory. According to Waldrop, a system is complex if “a great many independent agents are interacting with each other in a

great many ways” (1992, p. 11 as described by Reid, n.d.). Begg describes enactivist “learning and knowing as complex, emergent processes by which dynamic agents maintain fitness with one another and within dynamic contexts” (2002, p. 4). He identifies some of the internal interrelated agents as physical, neurological, cognitive and non-cognitive contexts. Davis, Sumara and Luce-Kapler (2000) categorise learning theories as complicated or as complex:

complex theories are those in which a web of interrelationships is seen to be in play, where cause and effect mechanisms do not provide an adequate explanation, and where the best one could say is that some things might influence other things.

Frielick (2004) further highlights the complexity of learning and knowing when he describes the interplay between internal and external systems. The teaching and learning setting can be viewed as a system that is characterised by mental events, as well as physical experiences and structures. In the same way, student and teacher interactions within the physical environment can also be seen as the source of learning and knowing.

“Learning affects the entire web of being, thus what one knows, what one does, and who or what one is cannot be separated” (Begg, 2002, p. 5). As a complex theory, it is assumed that the subject matter is not learned in a linear way. This is because complex systems create themselves, in the sense that they come into being and remain in existence through their own internal interactions. Breen (2003) describes this interconnectedness of knower, knowing and emerging knowledge as a circular system where organism and environment enfold into each other and unfold from one another in the fundamental circularity that is life itself: “this aspect of circularity (or complexity as opposed to complicatedness) also introduces elements of reciprocity not just with me and the other, but also with the environment”. These systems are regarded as self-creating or self-generating.

In enactivism, systems that continually create themselves are referred to as autopoietic (Begg, 2002; Davis & Sumara, 1997; Hanrahan, 2003; Manturana & Varela, 1992; Reid, n.d.). An autopoietic system is an “active self-updating collection of structures capable of informing (or shaping) its surrounding medium into a world through a history of structural coupling of it” (Reid, 1996). For Manturana and Varela, the components of autopoietic systems “must be dynamically related in a network of ongoing interactions” (1992, p. 61). Simply stated, this

means that the components interact in ways which are continually changing, but which at the same time allow for the continuation of interactions so that the systems continue to exist.

Enactivists identify learning as autopoietic in that interactions are dynamic, emerging, self-organising and self-referencing. These interactions demand that learners and teachers couple structurally, that is, to adapt and fit in order for the system to work, in order for new knowledge, new interactions and co-emergence to evolve. For Heywood (2003), learning involves resolving tensions between tacit and explicit knowledge, between emotional and reasoned actions, and between intuitive and calculated responses. Enactivists assert that learning is both an active and a participatory process. In this way, enactivism challenges current classroom practices, in questioning the practices of preselecting learning content and predetermining the activities which will develop these understandings for learners (Davis, 1995). Also arising from these interactions are new interactions, new components and new ways of knowing.

Enactivists talk of knowledge and knowers as co-emerging (Davis, 1996). This means that knowledge is not apart from the world but embedded in it in a series of increasingly complex systems (groups, schools, communities, cultures, humanity, biosphere). Begg (2002) suggests that this is the most significant difference between the enactivist and constructivist approaches. The latter is based upon the modernist assumption that self is separated from others and from the world. Enactivism does not assume this separation:

Cognition is thus understood as a process of organising one's own subjective world experience, involving the simultaneous revision, reorganisation, and reinterpretation of past, present, and projected actions and conceptions (Davis & Sumara, 1997, p. 76).

From a systemic perspective, mental activity or cognition is thus the encoding and interpretation of information exchanges that are characteristics of an entire system, rather than the function of an individual that is separate from a cognitively inert world (Frielick, 2004).

Enactivist teaching and learning theories describe two main forms of knowing. Davis refers to what we think and say as 'formulated ways of knowing', and suggests that most learning theories are focused on this epistemology. Enactivist approaches also acknowledge 'unformulated ways of knowing'. Begg (2002) and Davis (1996) describe unformulated thought

as that which we do without conscious thought. Davis sees unformulated knowing as important because learning involves “resolving tensions between tacit and explicit knowing, between emotional and reasoned actions, and between intuitive and calculated responses ... meaning has an affective dimension that is often ignored” (1996, p. 6).

Davis (1996; Davis, Sumara & Luce-Kapler, 2000; Davis & Sumara, 1997) describes teaching as hermeneutic listening, and the role of teacher in the classroom as one of interpreting students’ actions, to inform future curriculum development. “Teaching involves providing rich learning activities to help learners negotiate meaning towards acceptable and shared views” (Begg, 2002, p. 8). For these reasons, enactivist theory suggests that understandings and knowledge emerging from classrooms should not be about facts, results or static ideas, but rather knowing how to apply these ideas practically and in a variety of contexts. Futures perspectives within curriculum provide further complexities in which new learnings and knowledges can emerge and be embodied.

In this section, I have described constructivism as the dominant learning theory affecting the ways that classroom practices are shaped relative to curriculum, and teacher-student relationships. In constructivism, it is claimed that students build on what is known to further develop their understandings of the world. This is seen as a predominantly cognitive act. In futures education, the learner can certainly build understandings in similar ways; drawing from understandings of the past and the present, however there are no absolutes, and what results from student inquiry often generates new directions of learning and investigation. As each learner then presents these new understandings, other learners rethink, examine and postulate what is presented alongside their own futures thinking. This co emergence of understandings is more strongly focused within enactivist learning theories.

Furthermore, where constructivist theories predominantly focus on cognitive learning, enactivism also takes into account non-cognitive learning. In futures education, where learning is connected to personal and shared future lives, there are affective and philosophical domains also at work. Futures studies intend some action to transform the daily lives of those who

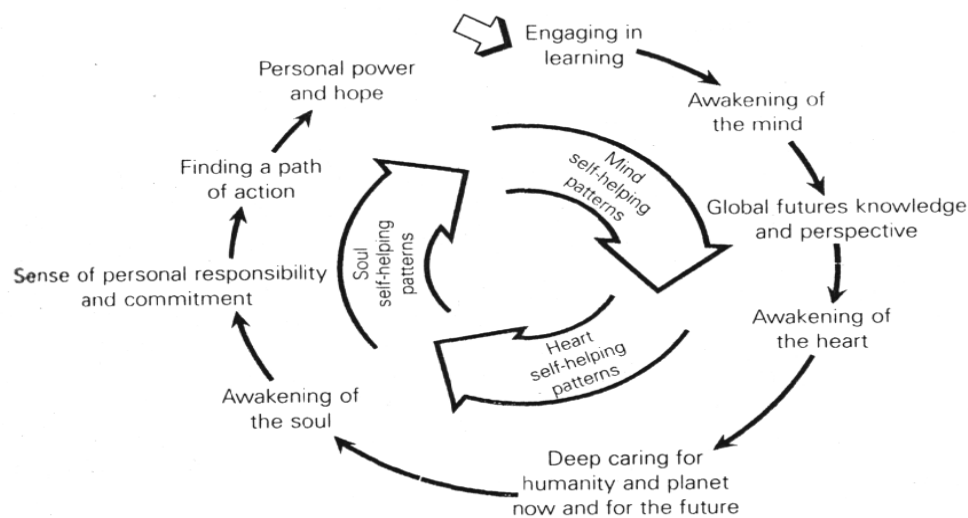
engage in particular through collective futures enterprise. Rogers (1998) best describes the ways in which cognitive and non-cognitive learning and knowledge occur within futures education.

### ***Futures education as embodied: a model of cognitive and non-cognitive engagement***

Rogers (1998) reflects on past studies highlighting the transformational aspect of futures engagement within her own classes. She claims from students interviewed, an interdisciplinary futures approach has indeed encouraged autonomous, imaginative and critically reflective qualities. The students related their sense of personal power to their abilities to make choices, make changes, speak out and take action. Similarly, much of their hope for the future was based in their confidence in their abilities to change their own lives as a result of this empowerment. Along with others, such as Masini (1999), Rogers identifies within the world a “critical need for people to change fundamentally their perspectives, feelings, value priorities and ways of living” (1998, p. 203). Many of these changes are dependent upon learning. Within futures education, there are systems of thought which enable learners to be more conscious of their opinions and beliefs about the world and ground them in solid conceptual understandings.

Rogers (1998) provides a useful conceptual model of transformational and enactivist learning in futures education (Figure 2). In it she represents the development learners undertake in considering future global perspectives. Like Mezirow (1997), Rogers identifies the transformative cycle of futures knowing – cognitively, affectively and soulfully – as occurring in four stages. The first stage is an “awakening of the mind” (1998, p. 206). This describes the cognitive process of engaging the learner intellectually, and encouraging knowledge acquisition, a range of ways of thinking about things, and setting challenges for student thinking. Through this awakening of the mind, students will have the opportunity to develop global futures knowledge and perspective.





**Figure 2 – Learning about global futures: a conceptual model**  
(Rogers, 1998, p. 205)

The second level of awareness of the future occurs when there is an “awakening of the heart” (Rogers, 1998, p. 208). This affective realm describes the scope of futures education in identifying emotional responses, developing coping strategies and in understanding processes of personal recovery or resilience, as well as developing empathy for others. Students who have been immersed in futures education often describe the emotional journey as being akin to a roller-coaster ride. In being confronted with global threats to humanity and the environment, they have often described responses filled with negativity, fear and a sense of hopelessness (Hicks, 2002; Rogers, 1998). In relation to Rogers’ model, these emotional responses are enacted and interpreted as a means of expressing deep caring for humanity and planet now and in the future.

Hicks argues that, through having had the opportunities to explore a range of issues, learners “recognise and confront ethical dilemmas, rather than just describe them” (1991, p. 630). This is what Rogers describes as an “awakening of the soul” (1998, p. 209). The soul is defined in her writing as the essence of humanity, the core values a person holds, and the meaning for existence, and the sense of life purposes. In leading students to consider their place on the earth, as one of many living organisms, the awakening of the soul leads to an emergence of care and empathy for others. From this, there is clear motivation and preparedness to

identify a need for action, as well as considering what that course of action may include. It is here, suggests Rogers, when the path of action has been established that “students experienced relief, calmness, certainty, lightness and excitement” (1998, p. 210). Certainly, in case studies undertaken, students are positively immersed, as futures (education) are enacted.

Enacting futures demands open-ended and immersive pedagogies. Educators must be provocative in developing curriculum which stimulates, invites and engages students in learning, which in turn empowers them to co-emerge with preferable and positive futures. It is not enough to assume that the learning outcomes generated by a single future perspective will address the multitude of possible future scenarios evolving within our world. Education must become more flexible, open-ended and learner-directed if we are truly going to enact authentic and purposeful motivated engagement in schools, for and amongst our learners.

At the school where this research has been conducted, attempts to make learning more student-directed and located within the contexts of the particular community population have occurred through the recognition and commitment to a Reggio Emilia philosophy of teaching and learning. In this project, the ways in which teachers enacted their futures understandings within the curriculum reflected these principles. Philosophies drawn from Reggio Emilia schools have helped bridge the divide between educators in three ways: by revealing new ways for promoting children’s academic learning in the realm of big ideas; by offering documentation as a tool for studying, sharing and planning children’s education experiences; and by provoking a new way to think about the role of the teacher (New, 2003). In this research, I also utilised Reggio Emilia philosophies in the design of the teachers’ professional learning.

In the following section, I will highlight key ideas within Reggio Emilia philosophy, in order for the reader to better understand the ways in which teachers in this school were able to move between what was occurring within their professional learning, and their everyday practices within the learning spaces. Much of this philosophy describes the very dynamic interactions between the teachers, students, environments and the ways in which new learnings emerge and forge new paths for inquiry. There are many strong alliances between the ideals of enactivism and Reggio Emilia approaches.

### ***Contextualising Reggio Emilia approaches to teaching and learning***

Reggio Emilia is a particular geographical place<sup>37</sup> with a story of people in an Italian community who rallied together to create and sustain a democratic vision of what they thought early education should look and feel like (Strong-Wilson & Ellis, 2007). Its schools have grown out of the culture<sup>38</sup> that values children, out of the intense commitments of a group of parents, and out of the leadership of a visionary man, Loris Malaguzzi<sup>39</sup> (Hewett, 2001).

The Reggio culture proposes, in education, that children are nurtured and valued (Inman Linn, 2001) Within the original philosophy, Reggio was applied only to the infant and preschool setting. Since then there has been increased interest from primary schools in using Reggio Emilia processes (Ardzejwska & Coutts, 2004). Supporters of Reggio distinguish its philosophy through its advocacy of the image of the child as being rich, strong and powerful (New, 1997, 2003) and further their ability to represent their own images of the world, as they understood it. Malaguzzi referred to these representations as the “hundred languages of children” (Edwards, Gandini & Forman, 1998) which included multiple modes of articulation. These languages include symbolic language, art, play, drama, music etc.

Society and culture play roles in the creation of traditions, rights and expectations that become reflected in the organisation of our educational systems (Rinaldi, 2001). Reggio philosophers believe that amongst the central purposes of a school is to promote the development of children’s cognitive processes, in particular, “to develop the ability to think critically and creatively, to learn disciplinary ways of thinking and understanding and to acquire the basic literacies” (Krechevsky & Stork, 2000, p. 69) Hughes describes the Reggio Emilia

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<sup>37</sup> Reggio is in the river plains of Northern Italy and is a rich agricultural and industrial centre (Doig, 1996, p. 65).

<sup>38</sup> In the political and economic chaos that followed the fall of fascism and the Germans’ retreat from Italy, the village community collected stone, sand and timber to build a school amid the destruction which remained. The first school was financed by selling a German tank, nine horses and two military trucks. That first school still exists in the countryside 20 minutes from the city of Reggio Emilia, which in 1963 assumed funding for the preschools (Brunson-Day, 2001).

<sup>39</sup> Malaguzzi was born in Corregio, Italy in 1920. Encouraged by his father, he enrolled in a teacher training course in 1939 and completed it during the war. In 1946 he enrolled in a psychology course in Rome which acted as a catalyst for the beginning of the Reggio Emilia approach.

approach to teaching and learning as “the translation of theory and values to teaching practices that are reflective of one’s own unique cultural context” (2007, p. 51). This approach has been implemented and trialled across the globe, in many settings. With each new implementation comes a new variation of the original philosophy espoused by Malaguzzi and the Reggio community.

The Reggio Emilia philosophy opposes traditional pedagogies, in many ways. In particular, it rejects “the traditional way students are often positioned and perhaps disempowered” (Ridgway & Surman, 2004, p. 6) and proposes that the different aspects of teaching need to be more closely integrated, in order to avoid learned dependence which is cultivated in these traditional settings.

A fundamental principle of the approach, for Hughes (2007, p. 49), is the “view of school as an organization of systems that support the many levels of relationship among children, teachers, family, and community”. Alternatively, Ardzejwska and Coutts (2004) outline seven important principles which underpin Reggio. These include respectful and authentic communication, children influencing curriculum decisions, and the importance of the environment, which are translated into practice using small group collaborative learning and long-term projects and especially where the visual arts is a primary medium for the children to express their thoughts. For New (2007), Reggio approaches are encapsulated by the concept of teachers as learners, *progettazione* (long-term project work) as a curriculum vehicle, children’s multiple symbolic languages as culturally constructed modes of discourse, the physical environment as a developmental niche, and parental involvement as a form of civic engagement. In the following sections, I will synthesise the works of many authors to highlight what I believe are the central tenets of the Reggio Emilia approach. These include the image of the child, the image and role of the teacher, collaborations, documentation, planning for learning, and environment as the third teacher.

### ***The image of the child***

Central to the Reggio Emilia philosophy is the image of the child as strong, capable and being full of wonder, curiosity and potential (Edwards, Gandini & Forman, 1998). “The child is beheld as beautiful, powerful, competent, creative, curious, and full of potential and ambitious desires” (Malaguzzi, 1994, p. ii; Rinaldi, 1993). A child’s nature, thoughts and work are taken seriously and respected; therefore, the act of “truly listening to the child is emphasized” (Hewett, 2001, p. 96) This is based on the belief that children are powerful people, full of the desire and ability to grow up and construct their own knowledge. In this way, they are viewed as having ideas, questions and theories, and the “strengths of children are assumed” (Hughes, 2007, p. 50).

From a Reggio perspective, children have not just the need, but the right, to interact and communicate with one another and with caring, respectful adults (Brunson-Day, 2001). In the learning environment, each is recognised by the others in the group as bringing a distinctive perspective and way of thinking. Children come to see the differences in themselves as adding to the richness of their working process and product. They further identify the rights and responsibilities which occur amongst the differences within a learning community. Malaguzzi (1993, p. 51) linked this right to be treated with dignity, respect and equality in interaction, to a child’s right to be fully educated: “If the children had legitimate rights, then they should also have opportunities to develop their intelligence and to be made ready for the success that would not and should not escape them”. The concept of the child as having rights and possessing strength, competence and potential informs the view of the child as protagonist, occupying the primary active role in education and learning.

As a protagonist, the child is understood as having an innate desire to discover, learn and make sense of the world. In this way, the child is viewed not as the target of instruction as is the case in a traditional setting, but rather as having the active role of an apprentice, working alongside others in the discovery and construction of solutions to meaningful questions and problems: “learning is not something that is done to the child, but rather something she does” (Hewett, 2001, p. 96). Rinaldi (2003) suggests that from a very young age, children seek to

produce interpretive theory, where there is the intention to produce questions and to search for answers. She defines this as a theory that gives meaning to the things and events of the world; a theory in the sense of a satisfactory explanation. In this way, the child is regarded as a researcher in/of their world, and of their experiences.

Hewett considers children to be “natural researchers as they question what they see, hypothesise solutions, predict outcomes, experiments, and reflect on the discoveries” (2001, p. 96). In the Reggio Emilia approach, the child is positioned as researcher within the context of projects. As will be discussed, projects typically are in-depth studies of a particular topic that one or more children undertake. While engaging in a project, they have the opportunity to explore, observe, question, discuss, hypothesise, represent and then proceed to redefine and clarify their understandings, thereby expanding the richness of the thinking and further defining their role as that of a researcher (Edwards & Springate, 1993; Forman, 1996; Hewett, 2001). A significant part of the research process is the communication of progress and final outcomes with regard to student project based learning.

Within Reggio Emilia schools, it is believed that only as children articulate to others that which they believe to be true do they come face to face with errors in their thinking (Hewett, 2001). This emphasis on communication and language in learning may be found in the writings of Vygotsky (1962). Reggio educators believe that children can express their knowledge towards a wide variety of symbols and graphic modes, in what Malaguzzi (1993) called the hundred languages of children (see Figure 3). In utilising multiple modes of representation, the “potential of children’s learning becomes visible through documentation, creating collaborative relationships within schools and between schools and communities, and recasting our ideas of the role of the teacher and curriculum planning” (Moran, Desrochers & Cavicchi, 2007, p. 82). Edmiaston and Fitzgerald (2000) suggest that when children are viewed as competent, they can assume the role of experts or teacher within the classroom, thus providing the time and opportunity for the teacher to work individually or with small groups who need additional time and attention.

# The Hundred Languages of Children

by Loris Malaguzzi



No way. The hundred is there.

The child  
is made of one hundred.  
The child has a hundred languages  
a hundred hands  
a hundred thoughts  
a hundred ways of thinking  
of playing, of speaking.

A hundred, always a hundred  
way of listening  
of marvelling, of loving  
a hundred joys  
for singing and understanding  
hundred worlds  
to discover  
a hundred worlds  
to invent  
a hundred worlds  
to dream.



The child has  
A hundred languages  
(and a hundred hundred hundred more)  
but they steal ninety-nine.  
The school and the culture  
separate the head from the body.  
They tell the child:  
to think without hands  
to do without head  
to listen and not to speak  
to understand without joy  
to Love and to marvel  
only at Easter and Christmas.

They tell the child:  
to discover the world already there  
and of the hundred  
they steal ninety-nine

They tell the child:  
that work and play  
reality and fantasy  
science and imagination  
sky and earth  
reason and dream  
things  
that do not belong together.



And thus they tell the child  
that the hundred is not there.  
The child says:  
No way. The hundred is there



Translated by Lella Gandini

Figure 3 – The hundred languages of children

Following on, then, and based on this notion of the child as competent, resourceful and inventive, in the subsequent section I will consider the role and image of the teacher in a Reggio setting.

### ***The image and role of the teacher***

From their first days in kindergarten, and often earlier, children usually learn that it is the teachers who teach and the children who learn (Turner & Krechevsky, 2003). Reggio Emilia approaches challenge us to “rethink teaching roles and practices that might lead to a new image of childhood in our country” (Hughes, 2007, p. 49). The role and image of the teacher in this context is multifaceted as guide, facilitator, collaborator, researcher, expert and learner.

The teacher is positioned within the community as a collaborator and co-learner, and is considered to be a partner in the process of learning. Reciprocal exchanges between children and adults throughout the course of constructing knowledge are required to make appropriate adjustments in order to allow for and advance optimal growth and learning (Hewett, 2001, p. 97). As partner and co-learner, Reggio’s overarching educational principle of reciprocity appears recurrently as teacher and learner together guide the project. The teacher does not dominate the child or her learning, but rather, demonstrates respect for the child’s rights through mutual participation and joint action (Hewett, 2001, p. 97).

The role of teacher as collaborator is not understood solely in relationship to the child, as the teacher’s collaborative efforts with colleagues and parents are also considered vital. Teachers work in pairs, or teaching teams, and maintain strong collegial relationships with colleagues and staff, as they engage in ongoing discussions and interpretations of their work as well as the work of children. It is these exchanges and dialogues that provide the ongoing training and theoretical enrichment so vital to the Reggio Emilia experience (Innovative Teacher Project, 2004). Rinaldi states that teachers “have the right to think, plan, work and interpret together” (2006, p. 46). In as much as the Reggio approach sees the child as an active constructor of his or her own knowledge, the teacher is likewise seen as a protagonist who engages in processes with colleagues, including children, in order to make individual and collective interpretations and to negotiate new possibilities and experiences within the learning environment.

“The teacher’s role centers on provoking occasions of discovery through a kind of alert, inspired facilitation and stimulation of children’s dialogue, co-action, and co-construction of



knowledge” (Hewett, 2001, p. 97), which in turn positions the teacher as guide and facilitator. The teacher provides the child with the provocations and tools necessary to achieve her personal goals and advance her cognitive capacities. As a facilitator within the learning situation, the teacher is attuned to the child’s thought development, goals, and level of ability and understanding. This insight provides her with the opportunity to ask questions, offer suggestions or provide information and technical assistance without taking over the learning experience (Hewett, 2001). The role of the teacher as guide and facilitator is consistent with Vygotsky’s ZPD within which adults provide scaffolding to assist children in their learning and consequent development (Sullivan Palincsar, 1998). “We seek a situation in which the child is about to see what the adult already sees ... In such a situation, the adult can and must loan to the children his judgment and knowledge” (Malaguzzi, 1993, p. 80).

An underlying principle of the Reggio Emilia approach is the image of the teacher as a researcher who engages in a cycle of inquiry who forms questions, words, and collaborates with other teachers (Gandini & Goldhaber, 2001) In the same way, the school is seen as a place of research – a place of participation which facilitates a shared construction of value and meaning (Innovative Teacher Project, 2004). The teacher’s role of facilitating children’s learning according to their interests, questions, curiosity and current understandings necessitates that he also take on the role of researcher (Malaguzzi, 1994).

The Reggio schools are also sites of pedagogical research. Reggio educators see themselves as theory builders as well as theory consumers. They have been described as philosophers of childhood, collectively creating a framework for theory and practice based on deep respect for and sensitivity to the capacities and interests of young children (Kennedy, 1996). They see themselves as building knowledge through rigorous documentation of children’s learning experiences. They are collectively engaged in an ongoing process of posing hypotheses and gathering data through careful observation, documentation and interpretation. Theories are created, modified and validated (or not) by educators, who are also learning themselves (Krechevsky & Stork, 2000, p. 64).

Within a Reggio-influenced classroom, teacher professional development is seen as essential (Haigh, 2007). Krechevsky and Stork assert that it is inappropriate and unhelpful to ignore the

learning of adults in favour of an exclusive focus on children: “if there is deep learning on the part of the teachers, there is likely to be deep learning on the part of the children” (2000, p. 64). Teachers teach most effectively when they themselves also have opportunities to grow and learn as adults. Malaguzzi claimed that like everyone else in a community, “ teachers feel the need to grow in their competencies; they want to transform experiences into thoughts, thoughts into reflections, and reflections into new thoughts and new actions” (1998, p. 73). Professional development is aligned with the study of teachers’ questions as they examine their own classrooms.

The teachers in Reggio Emilia derive their professional development through their reflective and collaborative practices, with multiple opportunities for hypothesising, experimenting, evaluating, reflecting and sharing understandings with others (Ridgway & Surman, 2004, p. 7). The professional development is integrated into a working week. In true Reggio Emilia tradition, teachers are released for six hours a week for professional development, planning, preparation of materials, community management and meetings with families and others. They consider planning meetings as:

an opportunity to think out loud; to reflect on the meaning of the children’s gestures, words, and actions; to consider a multitude of perspectives; to visit and revisit the meaning and practice of a social constructivist perspective; to share challenges; and to celebrate accomplishments (Goldhaber, 2007, p. 78).

If, as Edmiaston and Fitzgerald (2000) suggest, the primary goals of Reggio schools are to ensure that every child feels a sense of belonging within the school community and to strengthen each child’s sense of identity as an individual, then another key element are collaborations which occur between the teacher, student and the wider community.

### ***Collaborative relationships***

The principle of collaboration is expressed in a myriad of ways, beginning with the insistence by teachers that they are not substitutes for parents, but rather, share with parents the challenge and responsibility of educating their children (New, 2007, p. 8). Malaguzzi described

“relationships to be the fundamental, organising strategy” of the Reggio Emilia educational system (1993, p. 10). In this, he viewed relationships not simply as a warm, protective backdrop or blanket but as a coming together of elements interacting dynamically towards a common purpose. Reggio writing portrays “optimistic rather than deficit views of both the people, and the potential of educational institutions”, in which the needs and interests of children and families are linked to and dependent on the needs and interests of teachers, parents, and community<sup>40</sup> members (New, 2007, p. 11).

The Reggio approach makes the connection between children as co-constructors of knowledge and the importance of reciprocal communication. A key element of learning is based on communication within teacher-teacher, child-child, teacher-parent-child, parents-teacher and parents-parents relationships – this creates a very rich learning environment for all those involved. Parents are considered indispensable partners in the Reggio approach (Fraser, 2006). When teachers view the participation of families not as a threat but as an intrinsic element of collegiality, the way is clear for parents to exercise both rights and responsibilities in helping to design and carry out learning plans for the children (Edmiaston & Fitzgerald, 2000, p. 68).

There is a great deal of discussion about the formation of *learning groups* within Reggio Emilia literature, as a strategy for collaborative learning within the classroom. A defining feature is shared activity around a common goal, as well as the presence of passion. “As long as individuals share a passion for understanding a particular subject, a learning group exists” (Krechevsky & Stork, 2000, p. 69). Creating learning groups involves teachers and, at times, students taking into careful consideration the composition of each group, including age, competencies, gender, time spent together, friendships, interests, the size of the group, and the children’s own suggestions for group membership (Turner & Krechevsky, 2003). The question confronting educators today is not whether group learning should happen; rather, it is a matter of identifying the ways that educators can support and deepen the quality of learning that can occur whenever individuals are together in a group (Krechevsky & Stork, 2000, p. 62) In a Reggio

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<sup>40</sup> The traditional Reggio Emilia schools are governed by community and management that promotes interaction and communication among educators, parents and the community. There is a strong effort to maintain dialogue amongst teachers, administrators, elected officials and the city as a whole in the development of the early childhood educational system (Innovative Teacher Project, 2004).

school, the quality of learning becomes apparent through the process of documentation. It is through documentation that learning becomes visible.

### ***Documentation***

Within Reggio Emilia, great importance is given to documentation, which creates a visible and public record of the learning process, and is the basis for reflection on learning, which is indispensable to children's and teachers' learning (Strong-Wilson, 2007). Documentation is a point of strength that makes timely and visible the interweaving of actions of the adults and of the children: it improves the quality of communication and interaction (Ridgway & Surman, 2004). Documentation should represent many perspectives such as pedagogical (teacher practice), developmental (how children developed) and theoretical (explanations of the teaching-learning process) (Moran, Desrochers & Cavicchi, 2007).

There are three main functions of documenting children's work (Edwards, Gandini & Forman, 1998) in Reggio Emilia, beyond the aesthetic beauty. From a pedagogical perspective, documentation of the learning process and results of students work provides the children with a visual memory of what they have done, thereby encouraging a revisiting and expanding of old ideas or the inspiration and development of new ideas. Furthermore, documentation provides teachers with a tool for research in order to assist them in continuing to improve and expand project ideas, better understand children, and evaluate their own work. It is also an effective means in which to provide parents with detailed information about what happens in the school and hopefully facilitates their involvement in present and future projects. Documentation often results in "strong home-school relationships, reducing the distances between parents and children and parents and teachers created by work and time constraints and socio-economic, linguistic, and cultural barriers" (Kroeger & Cardy, 2006, p. 391). The process of documentation plays a central role in both children's and teachers' experiences in programs of Reggio.

Documentation is a research orientation, rather than a method for displaying children's work or creating a final report or archive (Krechevsky & Stork, 2000, p. 68). It sustains educational action, the learning and teaching of adults in dialogue with the learning processes of children. It allows teachers to foster children's learning from the inside based on children's

own thoughts, ideas and contexts, rather than imposing it from the outside. It is through the generations and analysis of documentation that teachers portray both teaching and learning.

Documentation informs directions of learning. Small groups of children, with a teacher as their guide, documenter and co-investigator, engage in a process of enquiry that leads to deep collaborative learning. Too often, we spend too much time judging and too little time trying to understand children through their work (Krechevsky & Stork, 2000, p. 66). The children use multiple media such as paint, pen and ink, clay, and wire to explore, represent and share their theories. Teachers routinely take notes and photographs and record group discussions and children at play. They reflect on the meaning of the children's work to guide their pedagogical decisions and share the work and their own thinking about its meaning and significance in various ways throughout the school.

Documentation, in Reggio Emilia, is central to supporting this awareness. It also serves as a memory of what went on in the classroom and gives children opportunities to reflect on and evaluate their own and others' work and ideas. Documenting group learning shifts them away from the idea that it is only the teacher who teaches (Turner & Krechevsky, 2003, p. 42-43).

### ***Planning for learning and project based learning***

Schools which reflect the pedagogies of Reggio Emilia, are often described as “learning communities that invite long-term inquiry in their schools, rather than replicating a skill set of modelled practices (Hughes, 2007, p. 53). They are also presented in contrast to settings which emulate models of traditional teaching and learning. Krechevsky and Stork (2000, p. 61) outline four assumptions which encapsulate traditional notions of teaching and learning:

- Learning is the result of individual, rather than group, activity
- Teachers are consumers of theory, rather than generators
- Assessment in schools is concerned with evaluating learning outcomes, rather than learning processes
- Learning and teaching are primarily cognitive, rather than aesthetic, ethical or affective acts.

The Reggio Emilia approach is often referred to as a pedagogy of listening (Rinaldi, 2001) as it involves careful listening and observing to develop emergent curriculum (often referred to as project work). The need to learn more about children, so as to better teach them, resulted in a pedagogical approach to curriculum that includes future curiosities as well as those expressed by children themselves within the context of long-term open-ended projects or *progettazione*<sup>41/42</sup> (Moran, Desrochers & Cavicchi, 2007). It is a project approach that involves negotiation with children, parents and educators. The curriculum is child centred, project based, interdisciplinary, developmental and integrated (Ardzejwska & Coutts, 2004; Doig, 1996). Young children are encouraged to be investigators of the world around them.

Project work, according to Forman (1996) are in-depth studies of particular topics undertaken by groups of children. These are designed to help learners make deeper and fuller sense of events and phenomena in their own environment. Projects provide part of the curriculum in which children are encouraged to make their own decisions and choices – usually in cooperation with their peers and in consultation with their teachers about the work to be undertaken. It is assumed “that such work increases children’s confidence in their own intellectual powers, and strengthens their dispositions to continue learning” (Abramson, 1995, p. 200). The use of projects provides multilevel instruction, cooperative learning, peer support, and the individualisation of curriculum goals and learning experiences (Edmiaston & Fitzgerald, 2000). According to Reggio teachers, the classroom is composed of children with different strengths, interests and abilities, and projects of in-depth studies on particular topics encompass a wide variety of tasks where children with diverse abilities can all contribute productively (Malaguzzi, 1993).

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<sup>41</sup> *Progettazione* refers to all flexible planning, whether done by teachers, parents or administrators. It is “a process in which educators anticipate and prepare for emerging themes and is shared, complex, and dynamic planning that projects originality, subjectivity and differences” (Moran, Desrochers & Cavicchi, 2007; Rinaldi, 2001).

<sup>42</sup> *Progettazione* distinguishes itself from other contemporary and progressive curricula approaches, yet is similar to recent notions of emergent curriculum. Through its flexibility, new and sometimes unexpected curriculum direction and changing roles and responsibilities, evolving questions and ideas, and developing strategies are systematically reflecting on and responding to the changing needs, interests and abilities of children (Moran, Desrochers & Cavicchi, 2007).

Children are encouraged to engage in personally meaningful projects, reflect on their learning, and revisit ideas and concepts again. Teachers are thought of as researchers trusted with making decisions that benefit children (Stager, 2002). “Children come to care for their surroundings as well as see them in unexpected ways, which becomes part of a planned approach to curriculum and evaluation that is organised around ‘expecting the unexpected’” (Strong-Wilson & Ellis, 2007, p. 43). This approach to curriculum planning is called the negotiated curriculum. Through a negotiated curriculum, also called emergent curriculum, teachers engage in a recursive cycle of design, documentation and discourse (Fraser, 2006). They introduce a provocation. They listen closely to children’s conversations as they engage in their surroundings. They document the children’s learning, so as to create a “visible trace of the learning process” (Strong-Wilson & Ellis, 2007, p. 42) Teachers also reflect and talk with other teachers or with the children. They use what they hear, see and think about to plan a next activity, one that will build on as well as deepen the children’s interest and investigation.

Although the starting point of curriculum varies, many begin with children’s efforts to understand something about the physical or social worlds, address a practical proposition or explore a philosophical dilemma. Typically, learning begins in an immersion phase, where students are engaged in a range of tuning in, or catalytic experiences to a topic (McNaughton & Krentz, 2007). In preparation for the child-generated projects and documentation, hypotheses are posed, and teachers create conditions in which children can explore and test those ideas and frame the new hypotheses (New, 2007). Children are provided with extended stretches of time in order to work things through carefully. They spend long periods of the day concentrating deeply and focusing together on joint endeavours. As the projects are implemented and the focus of learning is identified, simultaneously the development of documentation occurs (Moran, Desrochers & Cavicchi, 2007). Throughout the project, and as new directions are identified, projects are brought to closure, and there is a display and discussion of documentation and a debriefing of the learning experience (Rinaldi, 2001).

A Reggio approach involves maintaining a delicate balance between providing structure and encouraging children’s free exploration (Strong-Wilson & Ellis, 2007, p. 41). Malaguzzi (1998, p. 67) stated that “what children learn does not follow as an automatic result from what is taught”, but rather, it is in large part due to the children’s own doing as a consequence of their

activities and teacher resources. With children and other adults, teachers co-create an environment in which, through their interactions with one another, adult and child can translate their thinking into action (Strong-Wilson, 2007). Ridgway and Surman (2004) refer to this as education through provocation. Although the adults (teachers and parents) work diligently to plan the learning environments and then carefully nurture and guide the children, it is the children's active engagement in exploration and investigations that produce their new knowledge and skills (Mitchell, 2007, p. 34).

Cole and Cole (2001) claimed that ideas are only as powerful as what you can do with them. Reggio Emilia schools are strongly committed to the development of big and powerful understandings. Teachers want the children in Reggio settings to have opportunities to engage with rich and relevant learning opportunities, to learn to notice and appreciate colours, textures, designs and patterns in their worlds. They also want them to make friends. They want parents to feel welcome, and they want an environment that supports their own relational, aesthetic and intellectual needs as well (New, 2007). In the following section, I will explore notions of the environment as the third teacher (Edwards, Gandini & Forman, 1998; Malaguzzi, 1998; Project Zero & Reggio Children, 2001; Strong-Wilson & Ellis, 2007).

### ***Environment as the third teacher<sup>43</sup>***

Reggio Emilia considers the school environment to be the third teacher. In its attention to how space can be thoughtfully arranged, Reggio Emilia has reconceptualised space as a key source of educational provocation and insight (Strong-Wilson & Ellis, 2007, p. 40). There are eight principles (Fraser, 2006; New, 2003; Strong-Wilson & Ellis, 2007) which are considered as key to the environment as third teacher: aesthetics, transparency, active learning, flexibility, collaboration, reciprocity, bringing the outdoors in, and relationships.

Much attention is paid to the look and feel of the classroom. The objective is to create a pleasant atmosphere where children, families and teachers feel understood and at ease. The environment is seen as a significant element of education and a reflection of the school's

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<sup>43</sup> The Reggio Emilia approach talks about three educators as being apparent at any time: the teacher, the child and the environment. "By seeing the environment as an educator, we can begin to notice how our surroundings can take on a life of their own that contributes to children's learning" (Strong-Wilson & Ellis, 2007, p. 40).



culture over time. The focus on the environment represents the values, aesthetics, organisation, thoughtfulness, provocation, communication and interaction (Innovative Teacher Project, 2004). Well-designed space supports cognitive, curricular and social goals. Reducing the clutter of objects produces aesthetically pleasing simplicity and reduces over-stimulation, which is particularly helpful to children (Edmiaston & Fitzgerald, 2000).

As the third teacher, the learning environment reflects the ways the centres are planned by the *users* of learning spaces. In Reggio the learning centres reflect the creativity, communication and cooperation of children and adults. Children are given opportunities to construct their own learning and learning environments (Mason, 2005). Through the notion of environment as third teacher, Reggio Emilia has taken up the challenge of creating rich contexts that allow children to find their own affordances through their interactions with objects and other people. Teachers, through documentation and negotiated curriculum, learn from children, thus creating a community memory (Strong-Wilson & Ellis, 2007).

As children, teachers and communities engage in designing and creating these environments, their decision making focuses on how the configuration and conceptualisation of spaces work to invite, hinder or facilitate interaction. In my own experience at Wooranna Park, the process of renegotiating spaces was both rich and rewarding. Teachers and students collaborated to reflect upon the kinds of learning spaces which worked for them and those which did not.

Reggio Emilia's approach to the role of the environment in teaching and learning draws deeply on how young children perceive and use space to create meaning (Strong-Wilson & Ellis, 2007, p. 41). Rasmussen (2004) distinguishes between the structured places that adults create for children and the places where children invest imaginative energy; she called the latter 'children's spaces'. From a child's point of view, an environment is what the child can make of it. Children will often find uses for objects and spaces that adults do not anticipate or intend. They love to create their own worlds, at their own scale, in any environment they can manipulate or modify. Young children also like novel objects to explore and interesting events to witness. What children also value most in favourite places are opportunities for social affiliations and creative exploration or self-development. The classroom is more likely to become a child's

favourite place if it supports autonomy, social affiliation, and creative exploration and expression (Strong-Wilson & Ellis, 2007, p. 45).

One of the key features of the Reggio Emilia programs is the role of the natural environment as teacher. There is much reliance upon natural materials, aesthetics and connections with the outdoor environment and curriculum. Aspects of this concept can be connected to the study of science, promoting inquiry and imagination and connecting children to the outdoor world (Hughes, 2007). The surrounding environment also supports the preservation of the history of a region and encourages children to observe the environmental elements that characterise this region during the changing seasons.

### ***Some thoughts before moving on***

The Reggio Emilia approach to educating young children is strongly influenced by a unique image of the child and deeply embedded within the surrounding culture. It is not a “model nor recipe with a set of guidelines and procedures to be followed, therefore, one cannot and should not attempt to simply import it to another location” (Hewett, 2001, p. 99). Some teachers will design programs explicitly along its principles, such as starting with the image of the child, incorporating documentation and reflection on documentation, or seeing the environment as third teacher, whereas others will be strengthened by the knowledge of the Reggio Emilia approach and its respect for creating spaces where both adults and children will learn and grow together. It crosses geographical contexts and educational spaces because its principles are ones that we can all adhere to and implement, each in our own way (Strong-Wilson, 2007, p. 3). Wooranna Park has adapted this philosophy and embedded the key aspects amongst both innovative and traditional pedagogies. Engaging with this literature so as to gain a sense of what has been achieved in teaching and learning at this school contributes to an understanding of the process/journey on which they have embarked. The Reggio philosophy had a significant impact on how I worked with teachers, which in turn influenced how this philosophy worked with students and the way that the curriculum emerged within the school spaces.

In this section, I have considered the main elements of the Reggio Emilia philosophy. I began by looking at the image of the child upheld by Reggio communities, and then considered the roles and images of the teachers. I highlighted the collaborative relationships which were central to the effectiveness of the school community, and then considered the ways in which these partnerships contributed to planning for teaching and learning. I discussed documentation as a way in which learning becomes transparent, and finally, the notion of the environment as the third teacher in a child's educational life.

More broadly, in this chapter, I began discussing professional learning and development. I was especially interested in situated learning within schools and amongst practising teachers. I highlighted the three main strategies which I have used in this research as transmissive learning activities, informal and self-directed learning activities, and through the use of professional learning teams (PLTs). I shifted my gaze from the teacher as learner, to the students whom they would teach. I described dominant learning theories such as constructivism and suggested an alternate learning paradigm in enactivism. I concluded with the above section on Reggio Emilia, from which the specific research site draws its approach to teaching and learning.

In the next chapter, I will outline my approach to research in this project. After describing my research as multidimensional, I will engage with a number of pertinent methodologies which will inform my practices. I refer to interpretive, participatory action research and critical ethnographic methodologies. I will further highlight the methods I have utilised, such as case studies, focus groups, interviews and the various ways in working with texts, and the ways in which the data has been analysed.

## ***Chapter 4 – Positioning the research: a methodological orientation***

This study seeks to address the gap between the rhetoric of futures dimensions in written curriculum documents and the enactment of FTP in teaching practice. Specifically, it seeks to examine the potential for futures education to transform curriculum practice in ways that make learning more authentic and connected to student life. How to address this gap and empower teachers to teach in temporally inclusive ways is the central problem this study examines. In order to investigate the problem of the study, it is necessary to delineate its research methodology, research design, methods of data collection and data analysis techniques. This chapter is organised around these four areas.

### ***Methodologies***

I argue that this study can be best described as multidimensional, or as bricolage. Accordingly, in this section of the chapter I discuss the methodologies which contribute to this bricolage. Embedded within this discussion is an explanation of my role as participant and critical ethnographer. According to Yates (2003) and Malin (2003), there is not one overriding methodological framework that transcends all others, nor one type of research which is closer to enlightenment than any other, but certain kinds of research are better able to enter certain kinds of research questions. This study is multidimensional because it focuses on the coalescence of futures education, temporality and curriculum within a particular learning environment – that of Wooranna Park Primary School. Further, multiple voices and perspectives inform the construction of this narrative as this chapter highlights. This study can also be described as bricolage.

Bricolage views research methods actively rather than passively, meaning that we actively construct our research methods from the tools at hand rather than passively receiving the correct, universally applicable methodologies (Kincheloe & McLaren, 2005). According to Reid (1996), bricological research therefore allows greater flexibility and creativity. It is particularly relevant to this study for two reasons. First, the bricolage favours the production of complex

structures, theories and models and is appropriate to research on complex systems such as human learners and societies. In embracing complexity, the bricolage constructs a far more active role for humans in shaping reality and in creating the research processes and narratives that represent them (Kincheloe & McLaren, 2005, p. 317).

Second, central to bricolage research is the role of the bricoleur – a person who creates things from scratch, is creative and resourceful: a person who collects information and things and then puts them together in a way that they were not originally designed to do (Cambridge Dictionary, 2006). Multiple voices and perspectives are represented within this study. These include my voice as participant, critical ethnographer, teacher and teacher educator. The voices of the school, teachers and students, the theorists evident in this study and curriculum stakeholders are also represented to varying degrees. In my role as researcher, I position myself as “bricoleur, as a maker of quilts, or, as in filmmaking, a person who assembles images into montages” (Denzin & Lincoln, 2000a, p. 4) as this role involves the weaving of these voices to interpret and represent what has occurred. Denzin and Lincoln (2000a) use the metaphor of montage to describe the process of layering these voices to simultaneously create and enact meaning. Given the central role that I play as both participant and critical ethnographer (as discussed later in this chapter), the role of bricoleur is well suited to this study. Bricological research draws on a range of methodologies. The methodologies that frame this study are overviewed below.

### ***Interpretive research***

The assumptions underlying the current study are traditionally qualitative in nature. Qualitative research “is an umbrella concept covering forms of inquiry that help us understand and explain the meaning of social phenomena” (Merriam, 1998, p. 5). Qualitative researchers “study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 2000a, p. 3). Another term used interchangeably is interpretive research.

Interpretive researchers “study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings that people bring to them” (Denzin & Lincoln, 1998, p. 3). Interpretive research engages both the hows and ‘whats’ of social reality; it is “centred both in how people methodically construct their experiences and their worlds, and in the configurations of meaning and institutional life that inform and shape their reality-constituting activity” (Frielick, 2004, p. 488).

There are a number of reasons why this study can be classified as interpretive. First, it draws on the lived experiences of me, as participant and critical ethnographer, and a group of teachers within a particular site – Wooranna Park Primary School. It is necessarily focused on the ways in which study participants actively and collaboratively construct reality, in this case, the ways in which participants enact FTP in teaching practice, within a particular school site. Second, in the interpretive process, there is no assumption that in my role as researcher I am a detached observer but rather an acknowledgement of the intimate relationship between myself as researcher and the encounters being explored. Importantly, interpretive research acknowledges that both the teachers in this study and I participate in the process of knowing, in that what we bring to the experience merges together.

Whilst I have highlighted a number of the strengths of interpretive research, there are also perceived weaknesses. These are typically contrasted to the conventional strengths of quantitative research. For example, quantitative studies often rely on prediction, theory testing, replicability and validity (Merriam, 1998), concepts that are far more indeterminate in interpretive research. Sandelowski argues that interpretive research is “vulnerable to charges of irrelevance because of continual misconceptions about the generalizability and trustworthiness ... and concerns about its status as science” (1995, p. 125). In order to address these perceived weaknesses within the contexts of the broader methodological frame of the study I will address issues of validity later in this chapter. This study also draws on action research as detailed below.

### ***Action research***

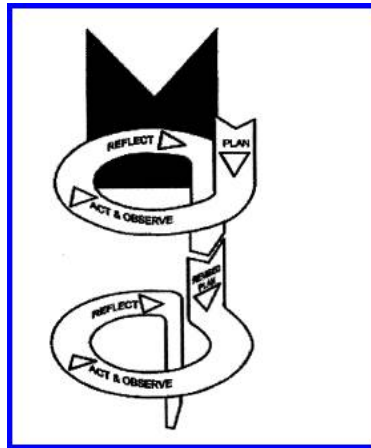
Action research is a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile purposes, grounded in a participatory worldview (Reason & Bradbury, 2006a). It considers research as a social practice where ownership of projects is shared and collaborative, and interpretations of materials collected are subjective (Kemmis & McTaggart, 2005). The broader aim is to build knowledge communities through collaborative practices (Groundwater-Smith & Mockler, 2005). Participatory research aims to provide opportunities for colleagues to share, discuss and debate aspects of their practices, for the purpose of improvement and development. The intent and enactment is transformative, in that researchers engage in endeavours which are about contributing to the transformation of practice and society. It is therefore appropriate to the transformative aims of this study.

Action research aims to address complex real life problems and the immediate concerns of practitioners. In the context of this study, teachers at Wooranna had a problem: a time machine that only went to the past. This highlighted a bigger problem – temporally biased teaching practices – that teachers were, when made aware of, concerned about.

In action research, the researcher (in this case, me) wants to try out a theory with practitioners in real situations, gain feedback from this experience, modify the theory as a result of this feedback and try it again. In this study, I began with a number of emergent theories, represented through the concepts and co-emergences described in the introduction. At the foundation of these early theories was the belief that through the disruption of teachers' temporal biases, through ongoing professional support and learning, curriculum practices which explicitly addressed futures dimensions were transformed.

Action research is an iterative process involving “researchers and practitioners acting together on a particular cycle of activities” (Avison et al., 1999). Kemmis and McTaggart (2005) also describe the process as a spiral of self-reflective cycles. As Figure 4 diagrammatically represents, these cycles include “planning a change; acting and observing the process and

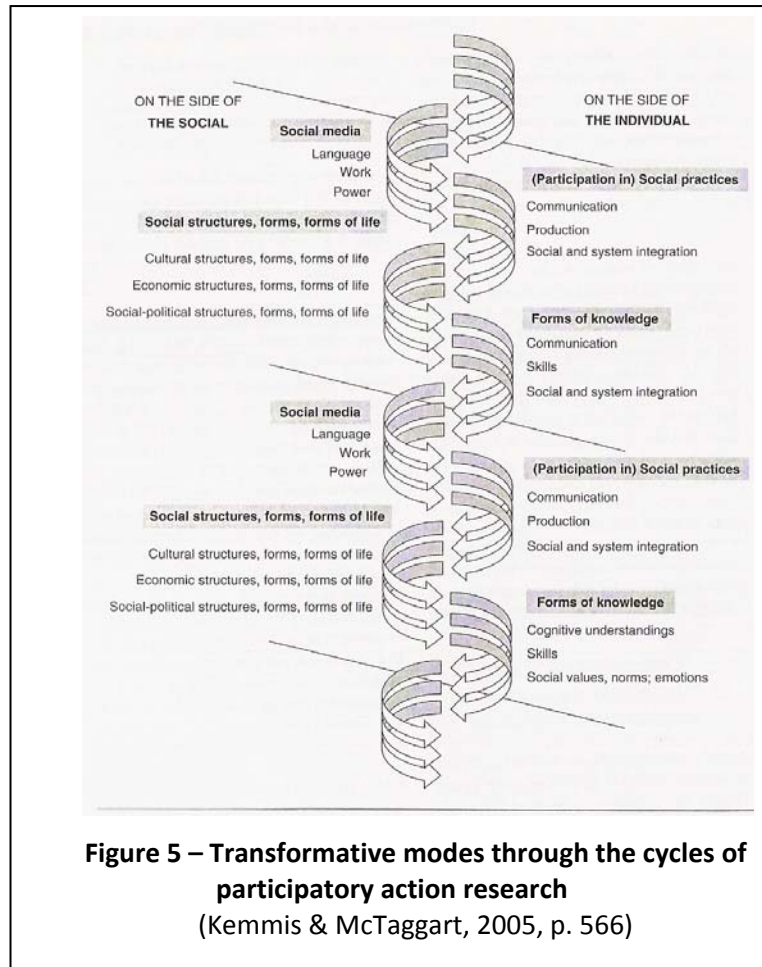
consequences of the change; reflecting on these processes and consequences; replanning; acting and observing again; reflecting again, and so on” (p. 563).



**Figure 4 – The cycles of participatory action research**  
(Kemmis & McTaggart, 2005, p. 563)

In this study, the research was cyclic, and with each cycle new learning and directions became apparent. For example, during professional development sessions with teachers in the school, I had often wrongly assumed particular knowledge, or alternatively had assumed a lack of knowledge in regard to the content being explored. Further, as teachers engaged with new materials and through their interactions with each other, sessions which had been planned for future meetings required modification. This cyclic approach, as reflected within my own research design, implies that the process might not appear as neat or orderly as the spiral itself represents, in stages of planning, acting, observing and reflecting. In practice, these cycles or stages overlap, and what is initially planned may change according to what is realised in interactions: “the process is likely to be more fluid, open and responsive” (Kemmis & McTaggart, 2003, p. 343). For Kemmis and McTaggart (2005), the criterion of success is not whether the participants have followed the process faithfully, but rather that there is a strong and authentic sense of development and evolution in practices. There should be evidence of understanding of practice, and consideration of the places in which these practices occur.





Interwoven with these cycles of participatory research, key features or elements are described as being important within practice. These embrace the idea that participatory action research is a social process, and that the processes must be participatory. Secondly, participatory action research practices are practical and collaborative drawing upon the experiences and knowledges of those with whom we are concerned. Thirdly, participatory action may be seen as emancipatory in that it seeks to equip the practitioner with practices which empower a change making process. Finally, participatory action research endeavours to transform both theory and practice. Kemmis and McTaggart represent these features within a diagram, drawing upon the cycles discussed previously (see Figure 5).

“A mark of quality in an action research project is that people will get energized and empowered by being involved” (Bradbury & Reason, 2006, p. 349), and further that they may develop newly reflexive insights as a result of a growing critical consciousness of that which they do. This is because action research creates a communicative space in which communicative

action is fostered among participants and in which problems and issues can be thematised and problematised for critical exploration aimed at overcoming felt dissatisfactions, irrationality and injustice. It also fosters a kind of “playfulness” about action – what to do. At its best, it creates opportunities for participants to adopt a thoughtful but highly exploratory view of what to do, knowing that their practice can and will be addressed in the light of what they learn from their careful observation of the processes and consequences of their action as it unfolds (Kemmis & McTaggart, 2005).

Not always explicitly stated, but certainly implied and necessary for the project I have designed, is the need for action research to be critical, and disruptive, in inviting practitioner reflection and dialogue. Traditionally, critical action research is strongly represented in education action research literature, and emerges from dissatisfaction within classroom practices. In this project, the dissatisfaction and disempowerment which I aim to address is the voices and ideas of students in shaping alternative futures from hegemonic ones implied within curriculum documents. The agency occurs through building the capacities of these classroom teachers to become more critical and reflective regarding the futures for which they are preparing their students. In this research, the communicative space is developed in a number of ways, through ongoing collaborative and consultation in a mixture of professional development sessions, and also in ongoing planning meetings. There is further communicative space created in ongoing and often informal collaborations and interactions between myself and individual teachers. The action which results is that which is implemented in classroom pedagogy, focused on those aspects addressed in these collaborations.

Some authors see many similarities in the participatory action research and critical ethnographic methodologies (Bradbury & Reason, 2006; Denzin & Lincoln, 2000a; Fals Borda, 2006; Heron & Reason, 2006), and others believe that they are one and the same (Barab et al., 2004). What is at the core of each, as their primary purpose, is the desire to change existing social structures (Cook, 2005). Whereas traditional ethnographic research seeks primarily to understand the conditions of the community being studied, critical methodologies such as critical ethnography and action research assume a critical standard. In this way, the researcher becomes a “change agent who is collaboratively developing structures intended to critique and support the transformation of the community is being studied” (Barab et al., 2004, p. 255). And,

further, the research goal is thus associated with notions of empowerment, emancipation and social change, as indeed is this study.

In coming to this thesis, I have grappled with the multiple roles I have undertaken within this research process. I have behaved as an outsider, bringing new content and learning into this community (the school). At other times, such as in supporting teachers to enact their knowledge, I have acted as a colleague and peer who has shared their struggles and empathised with the daily demands of teacher work, in realising new possibilities for classroom practice. Therefore, whilst I strongly identify with an action research methodology, I also align with critical ethnographic modes of research.

### ***Writer's note***

Earlier in this chapter, I described myself as a bricoleur, drawing upon a number of different voices and complexities. Segall (2001) considers an ethnography as the meeting place where a variety of voices are assembled together in a complex intertextual practice, or a montage. As in a bricolage, each contributing voice and idea provides context for others (Denzin, 2003). Some of these voices, within an ethnography, are those of the ethnographer, whereas others derive from interviews and conversations with participants in the field, and still others come from relevant literature from academe (Segall, 2001).

### ***Critical ethnographic methodology***

This study draws upon critical ethnographic methodology. This approach, as described by Creswell (2002), is value-laden in its orientation. It seeks to disclose hegemonic structures and challenge the status quo. In this study, I aim to highlight the ways in which education is valued for its capacity to equip students for 'the future'. At the same time, I claim that the curriculum which is enacted within schools through teacher practice is temporally biased towards the past. Through a number of interventions I seek to disrupt this temporal bias and in turn develop

greater temporal mobility which I suggest enables teachers and students to more critically engage with a FTP as well as historical studies. This is an example of the ways in which critical ethnography opens new interactive and curricular strategies to capitalise on the linguistic and cultural richness of students' backgrounds through intensive, collaborative, joint construction of knowledge in the classroom and community settings (Kincheloe & McLaren, 2005; Shadduck-Hernandez, 2006).

A powerful tenet of critical pedagogy is the belief that all students can become critical and engaged learners committed to transforming social inequalities and injustices (Shadduck-Hernandez, 2006). Critical ethnography speaks to an audience on behalf of their participants as a means of empowering participants by giving them more authority (Creswell, 2002, p. 486-487). In this project, as previously discussed, this empowerment can occur in giving teachers and students greater access to their futures, through two key approaches. In the first instance, I argue that teachers are temporally biased in their perspectives, which can be disrupted through ongoing professional learning and support. Further, I suggest that as a result of teachers' increasing temporal balance or mobility, curriculum practices can be transformed. As a result of these curriculum changes and practices, students will have greater opportunities to contribute to the shaping of multiple futures across a number of contexts, as opposed to having a singular notion of 'the future' imposed upon them.

In this thesis, I contend that there is a small group within our society who monopolise 'the future'. In education, the curriculum or standards of accountability to which schools and teachers adhere are developed by a governmental department with some consultation, and the teachers then implement the content of learning, as they have interpreted it, from the documents. As previously discussed, evidence of the linkage between what schools teach and the implicit and explicit connections which are recognised as 'demands of the future' are entrenched within rhetoric of policy. Various aspects of this research design intend to empower teachers and students to be more actively involved in attending to their personal and collective futures, increasing futures consciousness and developing a repertoire of futures tools, concepts and understandings. Thus, I consider this research as being situated within critical theory, and that the ethnography that I will undertake will be a critical ethnography.

Ethnographic critical theory is reflexive and political. There exists a passionate interest in co-producing ethnographic knowledge, as well as creating and representing it, within a critical interactive self-other conversation or dialogue (Tedlock, 2003). There are multiple voices which inform, and are represented within, the research. The critical ethnographer's initial agenda is to capture and portray the insider's perspective through methods that allow them to ground their research in the accounts of individuals and groups whose "perspectives are ordinarily devalued or neglected" (Nugent & Abolafia, 2007, p. 209). A critical perspective typically requires that researchers give voice to the words and interpretations of the people they study and be open to acknowledge and give credence (Nugent & Abolafia, 2007, p. 209).

The critical ethnographer is committed to producing and performing texts that are grounded in and co-constructed in the politically and personally problematic worlds of everyday life (Denzin, 2003, p. 270). Spradley (1979) suggested that the most strategic of research begins with an interest in human problems: "these problems have yet needed changes and information needed to make such changes" (p. 15). The success of a critical ethnography depends upon the way in which ethnographers build "social and sympathetic relationships between the reader and the characters in their stories" and, more importantly, how this "rhetorical move supports the narrative and critical aims of the research" (Nugent & Abolafia, 2007, p. 209).

Critical ethnography produces a form of writing in which the authors carefully present characters within a narrative compelling sympathetic feelings in the reader. Being a critical ethnographer involves much more than "simply writing good cultural critiques" (Nugent & Abolafia, 2007, p. 206). It also involves fighting for institutional reforms (Foley & Valenzuela, 2005). The critical ethnographer is considered amongst a distinct minority of activists who are deeply involved in progressive social movements and community-based reforms (Denzin & Lincoln, 2000a). In this way, they often play the role of "democratic facilitator and consciousness-raiser, or cultural broker between powerful institutions and the disenfranchised citizens" (Foley & Valenzuela, 2005, p. 220). Denzin suggests that "the need for a civic, participatory social science ... a critical ethnography that moves back and forth between biography, history, and politics has never been greater" (2003, p. 260). In this way, critical ethnographers regard all cultural and social relations and interactions as essentially pedagogical in nature (Gramsci, 1974; Jordan & Yeomans, 1995).

Carspecken's (1996) original process of critical ethnography contains five stages: observation and description; analysis of observational data; further data generations; analysis to discover relationships between individuals, groups and systems; and examining findings in relation to existing theories of society. The first stages focus on data collected and analysed from an outsider's point of view (Cook, 2005). Carspecken (1996) suggested that this involves compilation of unobtrusive observational data in the form of field notes and journal entries which should describe and capture behaviours, activities and segments of dialogue between actors. This differs significantly from methods proposed by participatory action researchers who aimed to work democratically with research participants as equals to produce useful knowledge and action as well as consciousness raising (Schwandt, 2000). Critical ethnography does, however, give voice to participants who reflect on and challenge the views of the research during the interview portion of the study (Carspecken, 1996). In addition, the natural context in which research participants are observed is not altered, as is the case in participatory action research, wherein researchers enter the setting to engage participants in research, education and socio-political action (Reason & Bradbury, 2006a, 2006b).

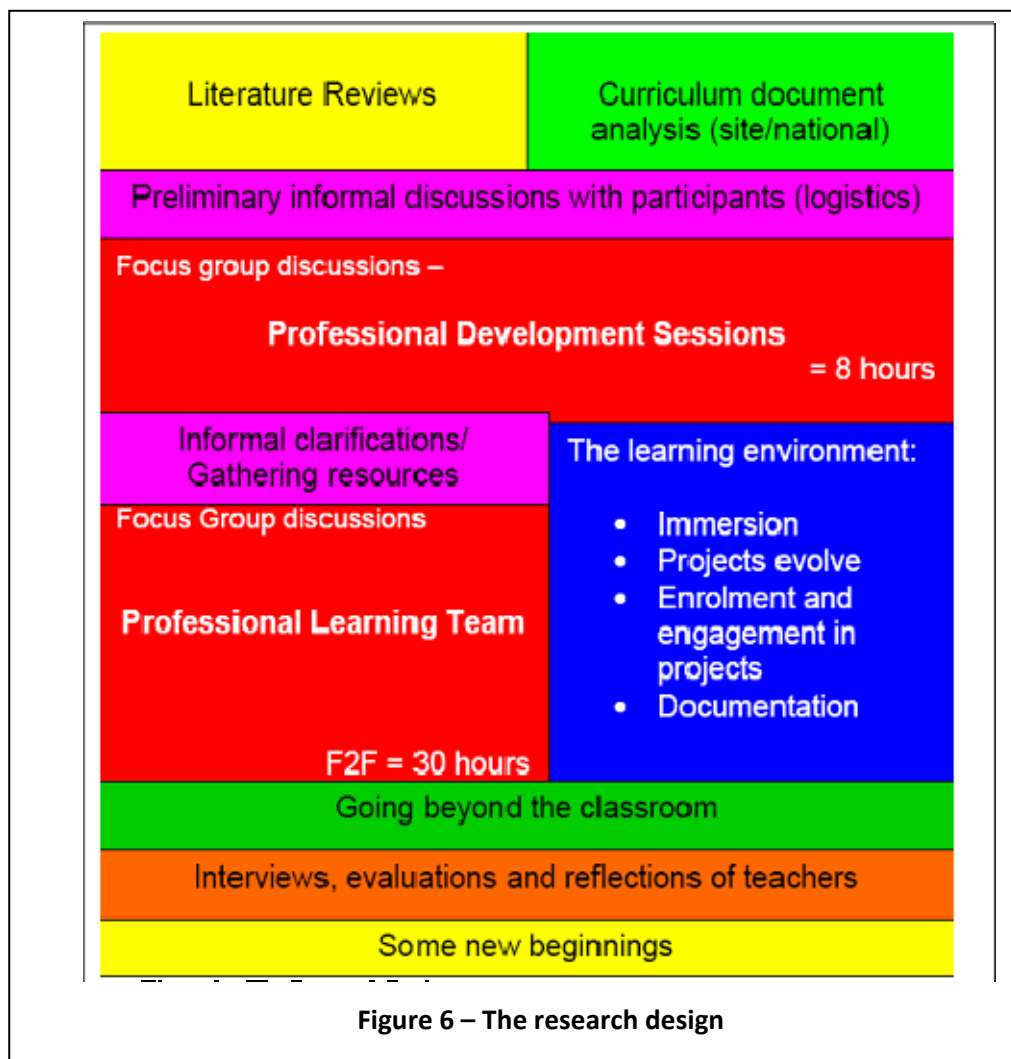
In critical ethnographic projects, the research questions and the form of data collection follow traditional research and participant roles. However, research participants are active participants in that they can and should be engaged in negotiating findings with researchers and in shaping and managing analyses, similar to participatory action research. In addition, they play an important role in determining the application of findings back to their own context and also to broader environments. From this perspective, research participants are somewhat empowered as they become aware of socio-political factors that affect their work and have access to research findings to support their activities (Cook, 2005, p. 134).

### ***Research design***

This study explores the ways in which education addresses the notion of futures within and through curriculum. Moreover, as highlighted in the introduction, it considers the interplay of the four central concepts – futures, temporality, curriculum and schools. Specifically, the research seeks to address the following questions:

- What is the role of a school in preparing students for their future?
- How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?
- How can we empower and develop teachers' capacities to develop futures perspectives within pedagogy and curriculum?
- How do futures perspectives transform teacher practice in learning environments?

In building a context for the reader to engage with the research paradigms outlined and narrative thus far, it is necessary to outline the events which contributed to this research. I will describe this research as being designed around a particular case study. I will subsequently highlight the various ways in which data was collected. I will refer to document analysis and literature reviews, focus groups and interviews. Figure 6 also represents the process.



This study commenced with literature reviews as highlighted in Chapters 1 to 3. At the same time, as outlined in Chapter 2, I undertook document analysis to investigate how FTP are positioned. I described futures as either explicit or implicit within various curriculum documents around Australia. Through my work in teacher education, I was regularly attending Wooranna Park Primary School where I observed a structure referred to as the ‘time machine’. This was of interest to me as it presented a metaphor for the temporal bias I have suggested is present within school curriculum. Put simply, in the same ways that education does not explicitly address FTP, the time machine at Wooranna Park did not ‘go to the future’. As a consequence of discussions about how it could be mobilised to the futures, I offered to work alongside the teachers to consider the possibilities which existed. The specific group of teachers belonged within the Grade 5/6 Autonomous Learning Unit [ALU] where students negotiated their



Independent Learning Plans [ILP] from week to week, based upon the Reggio Emilia project based learning (see Chapter 3).

Over the next four weeks, I attended the teachers' planning time, and facilitated what I will refer to as Professional Development [PD]. This provided the teachers with some metalanguage and tools to think about futures, with the intention of increasing their futures consciousness and building their capacities to implement explicit futures thinking within the classroom. This phase of the research also provided the teachers with stimulus materials to ascertain the ways in which they thought about the future, and moreover connected these perceptions. All of these sessions were recorded, and are referred to in the data chapters as Professional Development Focus Groups (PDFG). Other data which was captured during this stage resulted through other communications which occurred in response to the PD session. This phase of the research was strongly underpinned by critical ethnography by specifically developing new understandings in order to transform teachers' practices for the benefit of the students. This stage of the research will be described in Chapter 5 as discourse-in-practice, outlining the ways in which teachers talked about the future.

Subsequently, in the second phase of this research, I attended teacher planning meetings over 14 weeks as a critical friend, support and as a participant action researcher. As a collaborative group, we performed as a professional learning team [PLT]. Drawing upon the same pedagogies as the teachers observed through the Reggio Emilia philosophy and enactivist learning theories, the teachers were immersed within the task of explicit futures education or futures pedagogies. Each week the PLT would focus on specific futures skills or concepts, and the teachers would practise exercises related to these skills or concepts. Thereafter, they would implement these practices within their classrooms. Reflecting those action research cycles of reflection and further action, the teachers shared student work samples and critically reviewed the ways in which they responded to what the students had presented, as well as in generating new directions. As the PLT increased in confidence, my role as facilitator and leader decreased, which indicated the growing teachers' capacities. Alongside the materials ascertained within the PLT phase, teachers also participated in interviews to reflect upon their experiences in this study. This phase of this research project will be described in Chapter 6 as discursive practices, or what the teachers did. All of this occurred in what I would refer to as a case study.

### ***Case studies***

Case studies rely upon interviewing, observation and document analysis (Denzin & Lincoln, 2000b). They aim to draw attention to what specifically can be learned from the single case or multiple cases under investigation. A case has many working parts: “it is purposive; it often has a self. It is an integrated system” (Stake, 2000, p. 436). In this study, the many parts (schools, teachers, students and curriculum leaders) merge to construct a representation of futures education which as it is enacted within current education practices. In this study, there is a single case under investigation.

As a case study, this research endeavours to construct an awareness of how all of these parts work together, or don't, to orientate towards a positive and preferable future. Stake says that “a case study is both the process of inquiry about the case, and the product of that inquiry” (2000, p. 436). Schools through documents and government directions claim a role in orienting students towards the future. The teachers are individuals with their own views and images of the future, as well as having a responsibility to guiding students' thinking about the future. The students themselves, who are working towards adulthood and their own futures, are influenced in their learning by their own perception of the future.

The case study is of both intrinsic and instrumental interest to me. It is intrinsic because I want a better understanding of what happens in developing futures thinking and skills, within the current curriculum of schools. It is also instrumental in that this research gives me the opportunity to gauge and compare interest and perceptions of the wider educational community in regard to the explicit inclusion of futures themes. I believe that this will give me the platform to better understanding and “perhaps better theorizing, about a still larger collection of cases” (Stake, 2000, p. 437).

This case study provides a sample for investigation. The major task of a sample according to Burns (1990, p. 54) is “to select a sample from the defined population by an appropriate technique that ensures the sample is representative of the population and as far as possible not biased in any way”. However, Huberman and Miles (1998, p. 204) encourage researchers to be

more purposeful and constructive in their construction of the sample individuals and groups. They say that a sample must include consideration of “an intricately nested range of activities, processes, events, locations, and times; such choices are theory driven, not driven by a concern with ‘representativeness’”.

In some respects, this case might be referred to as a sample of convenience (Merriam, 1998). As a member of the Deakin University Education Faculty, I had the opportunity to work with a group of pre-service teachers within a school context on a weekly basis. The teachers were enrolled in the first year of a two-year postgraduate course, including studies in both primary and secondary school settings. In my induction to the school, Wooranna Park Primary School, I was impressed and simultaneously overwhelmed by all of the innovative practices which were evident (as well as the ‘time machine’, but I will revisit this). Within this case, I have worked with six teachers, including the curriculum coordinator and assistant principal. As will be discussed in further detail, the teachers have been involved in formal and informal communications with me. These processes formed numerous ‘waves of data’ and contributed to the bricolage described earlier.

### ***Literature review***

The study began with literature reviews (see Figure 6). As highlighted in Chapters 1, 2 and 3, this drew on many fields in order to more deeply consider the four central concepts within this study. In Chapter 1, I explored key literature in the area of futures studies and futures education. In Chapter 2, I engaged with literature theorising human temporality and time perspectives. In Chapter 3, I investigated the school as a place of learning and considered the ways in which teachers and students engage within this context. I was particularly keen to explore the role of curriculum within schools.

In this thesis, literature has been drawn from a variety of sources, including academic articles, education texts and curriculum advisory documents. The various literature reviews traverse the disciplines of psychology, philosophy, education and the futures’ field. Wiersma (1995, p. 55) describes the literature review as “a systematic process that requires careful and perceptive reading and attention to detail” where the researcher attempts to determine what others have learned about similar research problems and to gather information relevant to the

research problem at hand. The process is in three steps: locating the information, analysing and synthesising it in a way that the researcher will retain meaning, and using this information as a basis for thinking about a knowledge area. In this thesis, the literature reviews are housed amongst the opening four chapters.

According to Wiersma (1995) and Burns (1990), the aims of the literature review are sixfold. The initial literature review serves to limit the scope of the research to be undertaken. Further, it serves to provide information about what has been researched previously in regard to the research problem identified. They describe the literature review as having input to the design and methodologies to be employed, as well as identifying delimitations which may assist the researcher in avoiding difficulties or unnecessary complexities. It identifies gaps in current research and provides the background for interpreting the results of a research study. Whilst theories of cognitive development are not new, the introduction of futures thinking in Australian schools is relatively recent. For this reason, Burns (1990, p. 19) suggests that “relatively new research areas usually lack an organised body of source information to provide a general background and thus require a fairly broad review”. In those instances where a focused investigation was required, I used document analysis.

### ***Document analysis***

As discussed in Chapter 3, current curriculum documents were studied to ascertain the ways in which futures education was apparent. The reader will recall that these were referred to as implicit or explicit, and the criteria for their identification were outlined. Atkinson and Coffey (1997, as described by Silverman, 2000, p. 826) refer to documents as “social facts in that they are produced, shared and used in socially organised ways ... our recognition of their existence as social facts alerts us to the necessity to treat them very seriously indeed”. In this study, the results of these analyses have informed the ongoing professional learning which occurred within this case study, as well as the interactions which have occurred subsequently.

This approach centres on “competencies that constitute specific domains of everyday work ... the aim is to document the ‘haecceity’ – the just ‘thisness’ of social practices within circumscribed domains of knowledge and activity” (Lynch, 1993, as discussed by Gubrium &

Holstein, 2000, p. 493). Postanalytic ethnomethodology as a method of analysis of text is “theoretically minimalist in that it resists a priori conceptualization or categorization, especially historical time, while advocating detailed descriptive studies of the specific, local practices that manifest order, and render it accountable” (Gubrium & Holstein, 2000, p. 493).

Beyond the theoretical foundations which were laid within the literature reviews and document analyses, I began to interact with a small group of teachers at Wooranna Park Primary School.

### ***Focus groups***

As well as the informal conversations about the possibilities for developing explicit futures perspectives, the teachers were engaged in small focus group activities, which became the site for professional learning. Within these focused learning opportunities, teachers reflected upon their own futures orientations and explored the ways in which their practices were influenced by notions of the future. Furthermore, I facilitated direct professional learning experiences which challenged and informed ways in which futures perspectives could be explicitly developed within the classroom. These sessions ran over four weeks, for two hours each time.

At the conclusion of the professional learning sessions, the focus groups discussions and activities took on a new role. Whilst much direct teaching and learning continued, they predominantly became the site for collaborative planning and learning to enact new futures understandings within classroom practice. Over 13 weeks, I met with teachers as critical friend, facilitator, expert and participant, teacher in pedagogical and curriculum design, reflection and evaluation. Between our weekly meetings, the teachers were practising explicit futures tools and content within the learning environment, whilst drawing upon the local school commitment to learning approaches, as discussed in previous chapters.

Krueger and Casey (2000) define a focus group as a carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment. The key element is the interaction of people which stimulates disclosures in a nurturing environment (Groundwater-Smith & Mockler, 2005). Focus groups can be used at any point in a

research program. Stewart, Shamdasani and Rook (2007) have described the many ways in which focus groups are employed within research. They can be used to obtain general background information about a topic of interest, or to generate research hypotheses that can be submitted to further research and testing using more quantitative approaches. In many projects, focus groups are employed to stimulate new ideas and creative concepts or to diagnose the potential for problems with a new program, service or product (Krueger & Casey, 2000). They are also utilised to learn how respondents talk about the phenomenon of interest or to interpret previously obtained results.

Krueger and Casey (2000) highlight some advantages of using focus groups. Because of the social orientation of this method, the researcher is able to capture real-life data through authentic interactions between participants. Further, the social, group dynamics frequently stimulate aspects of a topic that would not have been anticipated and would not have emerged from interviews with individuals (Stewart, Shamdasani and Rook, 2007). Focus group methods are flexible and adaptable across a number of settings, and efficient as a means of gaining immediate results in data collection (Reason & Bradbury, 2006a).

Similarly, there are disadvantages in using focus groups. They afford the researcher less control than individual interviews in regard to the content being developed and how organised the responses are to questions and stimulus. As a result of their social nature, data is difficult to analyse, and the researcher must consider ways in which adequate and accurate records, and recalls, of the group interactions will occur. In this project, I have recorded all interviews and kept journals. An example of a transcribed focus group discussion is given in Appendix 5.

Stewart, Shamdasani and Rook (2007) suggest that in a focus group, more than in any other type of interview, the interviewer has to be a skilled moderator, as controlling the dynamic within the group is a major challenge. Letting one interviewee dominate reduces the likelihood that others will participate, and this can generate the problem of group conformity or what Janis (1982) called 'groupthink'. This is the tendency for people in the group to conform to the opinions and decisions of the most outspoken members. Fontana and Frey (2000) and Krueger and Casey (2000) agree that the dynamics and differences between groups can be troublesome,

in that groups are often difficult to assemble, and appropriate and conducive environments are not always available.

In this study, the purpose of the focus groups is twofold. The first is to gather teacher perspectives regarding the future, and also their understandings and practices which are, or are not, connected to these perceptions. The second function of these focus groups is as a forum for conducting the PLTs, as discussed in the previous chapter. In the first interactions with teachers, the focus was on eliciting how they perceived the future, whilst also providing foundational skills and knowledge within the futures realm. Beyond these initial professional learning sessions, the groups became collaborative planning forums where the focus of our discussions was on what was occurring and would occur within the classrooms. Towards the conclusion of this project, I also undertook one-to-one interviews.

### ***The interview***

Silverman (2000, p. 822) claims that “we all live in what might be called an ‘interview society’, in which interviews seem central to making sense of our lives”. He considers an interview as potentially the opportunity to gaze into the soul of another, or as a politically correct dialogue in which the researcher and researched offer mutual understanding and support. More succinctly, Fontana and Frey (2000) highlight the need to look upon interviews, not as “neutral tools of data gathering but active interactions between two (or more) people leading to negotiated, contextually based results” (p. 646). The data which is produced through this interaction is largely narrative, allowing the respondent to describe the reality which is true for him/her (Silverman, 2000). Drawing upon the ethnographic methodology, the interviews with teachers focused upon the ways in which they describe their orientation towards the future. They were also asked to reflect upon their professional learning and its impact on their classroom practices.

Lancy (2001) describes ethnoscientific questioning as “the interviewer’s approach, as a stranger, asking naïve questions” (p. 53). This, he claims, will provide greater autonomy to the respondent, and a greater understanding into the emic (teacher’s as opposed to researcher’s perspective) knowledge or insight into futures thinking, in the case of this research. The questioning will be semi-structured, as opposed to strictly scripted, to allow for clarification

within the interaction. This semi-structured interview will also allow for an amount of spontaneous discussion arising from points raised by the respondents or the interviewer. In this way, “interviewers are increasingly seen as active participants in interactions with respondents, and interviews are seen as negotiated accomplishments of both interviewers and respondents that are shaped by the contexts and situations in which they take place” (Fontana & Frey, 2000, p. 663).

In this study, interviews provided a means by which focused one-to-one discussions could occur between teachers and the researcher. In particular, they were primarily used to reflect upon and recall the experiences of the teachers through stages of this project. Furthermore, these interviews provided the teachers with an opportunity to evaluate the ways in which their learnings became apparent and further the ways in which their teaching practices were transformed. As an interpretive tool, they are “centred both in how people methodically construct their experiences and their worlds and in the configurations of meaning and institutional life that inform and shape their reality-constituting activity” (Gubrium & Holstein, 2000, p. 488). A guide to these interview questions is given in Appendix 6.

As will be discussed in subsequent chapters, this project generated much data, through the various forms of interaction which occurred with the participants. I will now outline the ways in which the data was analysed.

### ***Data analysis***

Merriam (1998) suggests that analysis is:

The process of making sense out of the data. And making sense out of the data involves consolidating, reducing, and interpreting what people have said and what the researcher has seen and read – it’s the process of making meaning (p. 178).

To make sense of the data, collection and analysis were undertaken simultaneously (Silverman, 2000). This enabled the study to be focused and shaped as it proceeded. Miles and Huberman (1994) argue that the activity of data collection and the analysis of data form a cyclic process. Merriam (1998, 2002) identifies three phases in the analysis of data. These are first, second and



third level analysis. These phases are neither fixed nor are they linear. Rather, each informs the next and the researcher may cycle through the phases of analysis, particularly the later phases, many times before drawing and verifying conclusions.

Qualitative research methods involve a continuing interplay between data collection and theory (Babbie, 2002, p. 371). The role of theory in data analysis has been broadly debated (Corbin & Strauss, 2008; Denzin & Lincoln, 1998, 2000a; Wolcott, 2001). Whilst this debate is by no means dichotomous, it is interesting to note that polarised views exist. As researchers, we bring with us our assumptions and theoretical understandings to our analysis of data. For example, as Chapters 1 to 3 have established, the current study is based on the possibilities of an explicit futures curriculum, and in reconceptualising the ways in which futures perspectives are integrated and enacted. In examining primary teachers' interpretations and enactment of the learning which emerges from the futures based professional development, and throughout classroom implementation, it operationalises and further conceptualises a more temporally balanced curriculum, as discussed in Chapter 2. An integral part of reconceptualising temporal perspectives within curriculum, however, relies on theory-building. Consequently, my approach to theorising is 'bottom-up'.

### ***Tools for analysis***

#### ***Analytic bracketing***

Throughout this research project, I have used analytic bracketing to analyse and draw conclusions from the critical ethnographic and participatory observations which have occurred. This practice, according to Gubrium and Holstein (2000, p. 500), amounts to “an orienting procedure for alternately focusing on the whats and then the hows of interpretive practices in order to assemble both a contextually constructive picture of everyday language-in-use”. In this way, I have drawn upon the waves of data, described throughout this thesis, and organise them in ways which reflect the two dialectics at play – what is said and what is done. For the purpose of clearly bracketing, I will organise data into what is said (discursive practice) by documentation, curriculum leaders and teachers, and into what is done (discourse-in-practice) by teachers and schools. “The constant interplay between the analysis of these two sides of

interpretive practice mirrors the lived interplay among social interaction, its immediate surroundings, and its going concerns” (Gubrium & Holstein, 2000, p. 500).

Within the brackets of ‘what is said’ and ‘what is done’, there are many different ideas and themes which emerged. In sorting data, and in responding to the research questions posed, I employed coding and memoing techniques which contributed to the analysis process and to the structure of my analytic brackets.

### ***Coding***

The aim of data analysis is the discovery of patterns among the data, patterns that point to a theoretical understanding of social life. The coding and relating of concepts is key to this process and requires a refined system. The codes themselves are “mnemonic devices used to identify or mark the specific themes in a text. They can be either words or numbers” (Ryan & Bernard, 2000, p. 781). Coding is analysis, as “to review a set of field notes, transcribed or synthesised, and to dissect them meaningfully, while keeping the relationships between the parts intact, is the stuff of analysis” (Miles & Huberman, 1994, p. 42). Coding is classifying or categorising individual pieces of data, “coupled with some kind of retrieval system” (Babbie, 2002, p. 375). When coding is efficiently and effectively employed, the data groups become retrievable for other parts of the research process.

#### ***A reminder of the research questions, in order to think about the coding***

- What is the role of a school in preparing students for their future?
- How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?
- How can we empower and develop teachers’ capacities to develop futures perspectives within pedagogy and curriculum?
- How do futures perspectives transform teacher practice in learning environments?

Sandelowski (1995) observes that analysis of texts begins with proofreading the material and simply underlining key phrases because they make “some as yet inchoate sense” (p. 373). In a process called ‘open-coding’, the investigator identifies potential themes by pulling together real examples from the text (Bogdan & Biklen, 2003; Corbin & Strauss, 2008). Researchers start with some general themes derived from reading the literature and add more themes and subthemes as they go (Ryan & Bernard, 2000, p. 780). One method of creating codes is that of creating a provisional ‘start list’ prior to field work. “That list comes from the conceptual framework, list of research questions, hypotheses, problem areas, and/or key variables that the researcher brings to the study” (Miles & Huberman, 1994, p. 58) but also acknowledges that codes will change and become relevant or irrelevant as analysis of data is more deeply undertaken. Huberman and Miles (1998) suggest that codes should relate to one another in coherent, “study-important ways”, and that they should be part of a governing structure.

Coding forces the researcher to make judgements about the meanings of “contiguous blocks of text” (Ryan & Bernard, 2000, p. 780). As it proceeds, ideas and reactions to the meaning of what is observed cumulate progressively. These ideas are important as they suggest new interpretations of, and connections to, other parts of the data. If adequately structured, they usually point towards questions and issues to look into during the next wave of data collection, and to ways of elaborating some of these ideas. Marginal remarks, like reflective remarks, add meaning and clarity to field notes. They also point to important issues that a given code may be missing or blurring, suggesting revisions in the coding scheme (Huberman & Miles, 1998). Once the researcher identifies a set of things (themes, concepts, beliefs, behaviours), the next step is to identify how they are linked to each other in a theoretical model (Huberman & Miles, 2002; Ryan & Bernard, 2000).

Because codes will drive the retrieval and organisation of data for analysis, they must be precise and their meaning shared among analysts (Gubrium & Holstein, 2000). In this data analysis, the master codes describe the analytic bracket to which the data belongs. As described earlier, the brackets are ‘what is said’(WS) and ‘what is done’(WD). The role of master codes is to mark off segments of data within each bracket. The actual codes are strongly connected to the research questions.

Table 4 represents the start codes which were used for this project. The first column provides short descriptive labels for the general brackets, and the individual codes. The second shows the codes, and the third connects the code to the research questions.

**Table 4 – Starting list: codes for analysis**

<b>My start list of codes</b>		
Description	Codes	Research questions
What is said	WS-	
TEACHER VIEWS	WS-TV	1, 2
TEACHING FUTURES	WS-TF	2, 3, 4
LEARNING FUTURES	WS-LF	3, 4
TEACHING TRANSFORMATIONS	WS-TT	3, 4
LEARNING TRANSFORMATIONS	WS-LT	3, 4
STUDENT SAMPLES	WS-SS	1, 2, 3, 4
What is done	WD-	
TEACHER VIEWS	WD-TV	1, 2
TEACHING FUTURES	WD-TF	2, 3, 4
LEARNING FUTURES	WD-LF	3, 4
TEACHING TRANSFORMATIONS	WD-TT	3, 4
LEARNING TRANSFORMATIONS	WD-LT	3, 4
STUDENT SAMPLES	WD-SS	1, 2, 3, 4

Within the ‘what is said (WS)’ and ‘what is done (WD)’ brackets, there are similar frames employed for viewing and analysing data. ‘Teacher views’ (WS-TV, WD-TV) refer to the ways in which teachers in this project perceive personal, local and global futures, and specifically the futures they foresee in relation to their students. They also incorporate the ways that teachers perceive their role within education, and the roles that schools play more broadly. ‘Teaching futures’(WS-TF, WD-TF) focus on the philosophies of the teachers in regard to education for the future, and what they identify within their practice which explicitly develops futures capacities. They also incorporate the learning opportunities and experiences which teachers construct to develop explicit futures skills, knowledge and concepts.

‘Learning futures’ (WS-LF, WD-LF) identify teacher and student learning which is evident through this project. They include formal and informal, planned and unplanned learning, throughout the professional development sessions and further through the interactive professional learning team practices. ‘Teaching transformations’ (WS-TT, WD-TT) include data which demonstrates or reflects changes within teacher practice with regard to futures education. Examples include teacher reflection and other communications, and annotated work samples. ‘Learning transformations’ (WS-LT, WD-LT) include data which demonstrates changes within the ways that teachers and students are learning, and the types of learning which occur. Data includes comparative student work samples, and teacher and student reflection and evaluations.

Student samples (WD-SS, WD-FT) will be cross-referenced, or double coded, in that they are primarily student samples, but that they also belong to a different subset of the data. For example, a student sample might demonstrate evidence of explicit futures teaching. The student work samples in this bracket are those which have been brought to our collaborations, by teachers in order to clarify uncertainties in practice or to celebrate pedagogical successes. Similarly, these student samples may have been brought to the attention of the focus group as a stimulus for further reflection, or as part of comparative studies between the different classes, and teacher practice.

I coded the data by hand. I began with a small number of codes, but during the process of analysis I was receptive to other emergent codes, which became evident throughout the various waves of collection. “An inductive researcher may not want to precode any datum until he or she has collected it, seen how it functions or nests in its context, and determined how many varieties of it there are” (Miles & Huberman, 1994, p. 58). This is an adaptation of grounded theory (Corbin & Strauss, 2008; Glaser, 1998) where the “analysis is more open-minded and more context-sensitive, although here, too, the ultimate objective is to match the observations to a theory or set of constructs”.

In my experience, coding was an excellent tool for assisting me to sort my data into structured categories which made them relevant to the initial research questions and concepts under investigation. Having the different codes to allocate to my research data enabled me to

position data within the different brackets. However, coding did not allow me to annotate the reasons why data had been placed within a specific category for later revisitation, nor to further articulate new thinking, or draw connections between different ideas which had become apparent within the data collection and further research process. For this reason, I also used ‘memoing’ as a tool for organising and analysing data.

### ***Memoing***

Memoing is one of the principal techniques for recording relationships among themes. Glaser defined a memo as the “theorising write-up of ideas about codes and their relationships as they strike the analyst while coding” (1998, p. 83-84). Memos are expressed as a sentence, a paragraph or a few pages. They are primarily conceptual in intent, in that they do not merely report data but rather connect and contrast various pieces of data into more generalised concepts (Huberman & Miles, 2002; Ryan & Bernard, 2000). “Memos can also go well beyond codes and their relationships to any aspect of the study – personal, methodological, and substantive. They are one of the most useful and powerful sense-making tools at hand” (Huberman & Miles, 1998, p. 72). Strauss and Corbin (1998) discuss three kinds of memos: code notes, theory notes and operational notes. “Code notes describe the concepts that are being discovered in the discovery of grounded theory. In theory notes, the researcher tries to summarize his or her ideas about what is going on in the text. Operational notes are about practical matters” (Strauss & Corbin, 1998, p. 197). As a means of analysis in this research project, I used memoing in its many forms, and often simultaneously. Throughout the scope of the data collection and organisation, I would combine my field notes with other thoughts which occurred during transcription of tapes, or during the reread of materials. Similarly, I would often annotate work samples, email interactions, and document phone conversations, and any other ways that I worked to support or advise the teachers. Further, I would try to connect some big ideas I had gleaned from readings and my own professional experiences and knowledge, with the data I was interacting with at each stage.

Memoing helps the analyst move from empirical data to a conceptual level, refining and expanding codes further, “developing key categories and showing their relationships, and building toward a more integrated understanding of events, processes, and interactions in the

case” (Huberman & Miles, 1998, p. 74). In the inductive approach, memos often serve a clustering function, in gathering together the incidents that appear to have commonalities (Denzin & Lincoln, 1998), or in seeking alternative hypotheses to what is suggested by someone else. Memos often lead to the proposal of new coding practices, or to making connections between the reflective remarks written alongside field notes, and early readings of data. Using the process of memoing assists the researcher to clarify emergent concepts, as they typically a rapid way of recording thoughts which occur at the various stages. Memos can be quite elaborate as the data analysis evolves, as they will connect several pieces of data and often draw upon theory (Denzin & Lincoln, 1998).

Below, I have included three examples of the ways in which I used memoing. The first example (Figure 7) reflects the notes I had taken in regard to an email dialogue I was having with one of the teachers within the early stages of my research. She was tentative about her involvement, and felt very overwhelmed in her task of developing a futures project. In my memos, I have recorded the specific ways I supported the teacher, in making recommendations to resources and through explicit coaching and encouragement. I have made notes to myself in regard to the types of resources which might assist her in visualising some of the possibilities. Finally, in this example, I have raised some queries about the source of this teacher’s anxieties, and whether they were caused by her newness in teaching or alternatively by the introduction of futures perspectives and curriculum design.

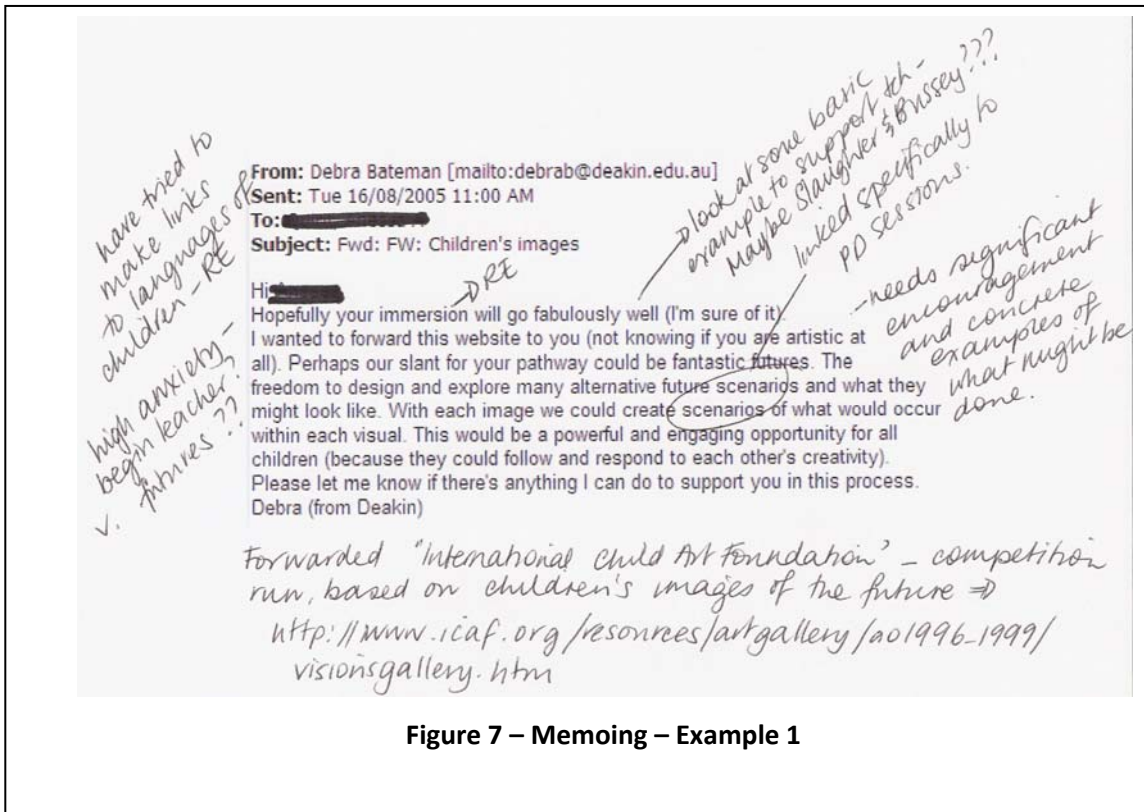


Figure 7 – Memoing – Example 1

In the second example (Figure 8) I use memoing in a variety of ways to reflect upon an interview with a teacher regarding her view of the future. This transcript, at the point of scanning, was uncoded, and the comments highlight some of my early thinking and further questions which emerged. In a number of instances, amongst these memos, I provide further information about what was not said within the interview, but was stated at another time. I also make links to other transcripts which challenged what the teacher was presenting in this particular forum. In a number of places, I make reference to some key readings in the field which might assist me in drawing connections or conclusions about what is said. Finally, I am highlighting some very specific parts of speech where the teacher articulates a particular view of the future, and any further information which supports her thinking in this area. Outside of my commentaries on what the teacher was and wasn't saying, I used memoing as a way of recording my own thinking through the process of analysis. Whilst many of the ideas which emerged are not relevant to this thesis, they might form the bases of some new inquiries thereafter.



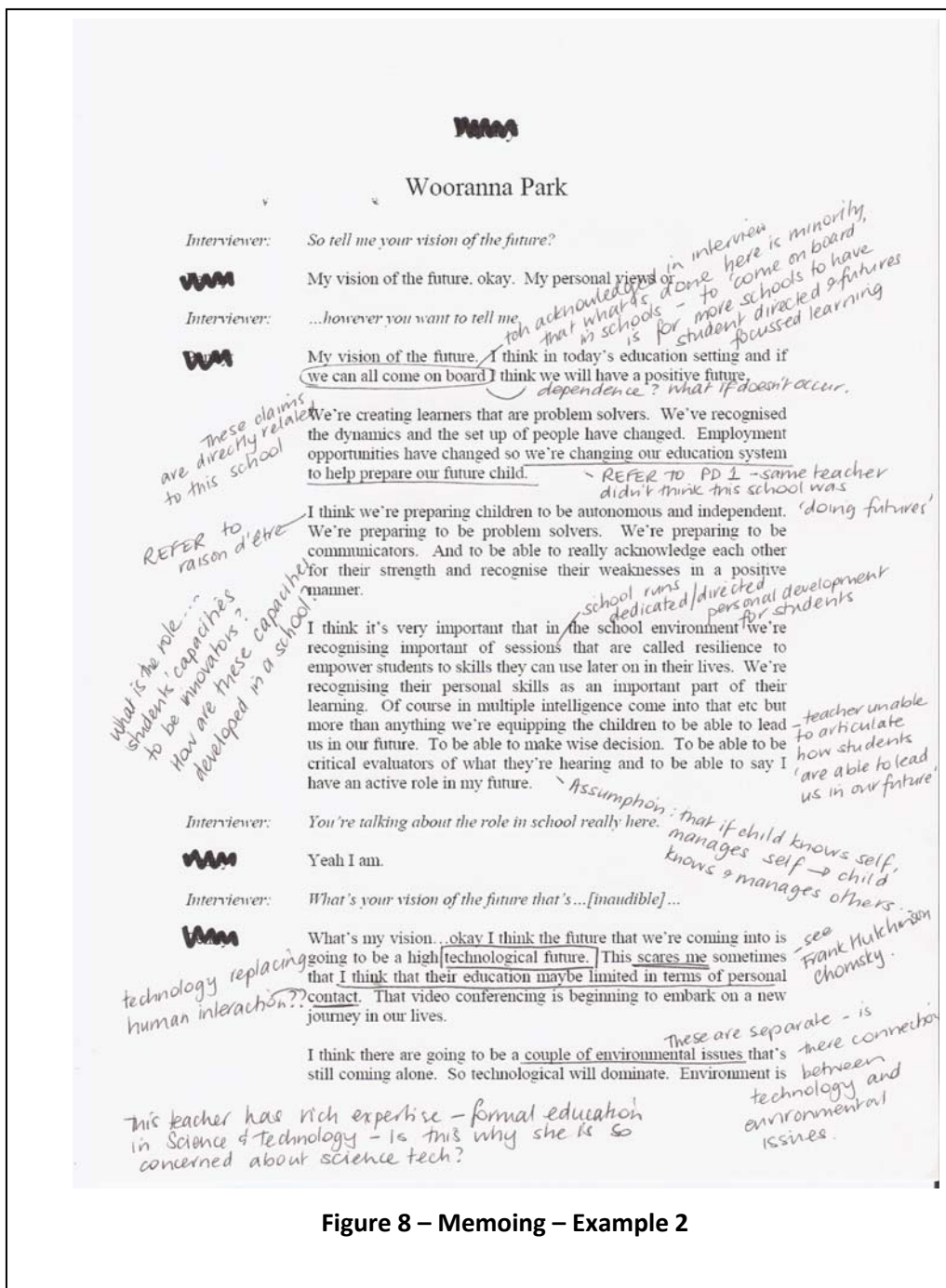


Figure 8 – Memoing – Example 2

The third example (see Figure 9) demonstrates the way I would utilise memoing to reflect upon meetings with the teachers, during planning sessions, as indicated by the code of PLT3. As I met with the teachers at weekly intervals, I would take copious field notes describing what was said and what occurred. Subsequent to each meeting, I would write a journal entry highlighting the key themes or main ideas which had emerged. Often, these would be teased out further, as I aimed to clarify how particular aspects would further inform my research. At times, some of these notes also set further directions or activities which needed to be visited.

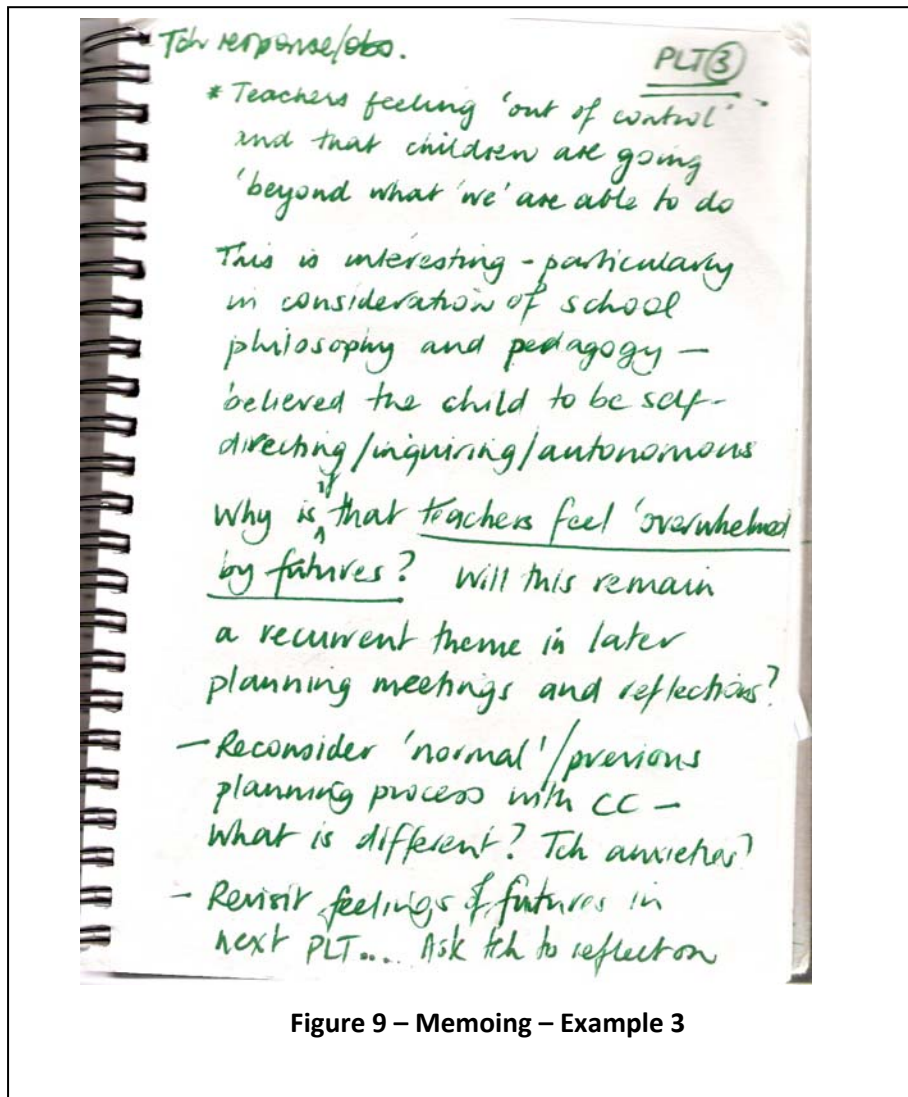


Figure 9 – Memoing – Example 3

The data analysis within this project was cyclical and ongoing. Each phase of analysis informed the next wave of data collection, with the data collection thus providing the content for analysis. In the next section I will discuss the ways in which I justify the data collection and analyses as valid and reliable, and the strategies I have used to ensure that findings are considered to be authentic, and with integrity. Like Atkinson and Hammersley (2000), I make the assumption that validity refers not to the data but to the inferences drawn. These inferences have been drawn throughout the collection and analyses phases. I respond to general challenges to validity, reliability and trustworthiness within interpretive research (Sandelowski, 1995; Merriam, 2002).

## ***Validity***

Writing about validity in qualitative inquiry is challenging, as “readers are treated to a confusing array of terms for validity, including authenticity, goodness, verisimilitude, adequacy, trustworthiness, plausibility, validity, validation, and credibility” (Creswell & Miller, 2000, p. 124). For Ryan and Bernard (2000), reliability concerns the extent to which an experiment, test or any measuring procedure yields the same results on repeated trials, whereas the validity of a concept depends on the utility of the device that measures it and the collective judgement of the relevant academic community.

Critics suggest that interpretive research lacks validity because it is subjective, it is not generalisable and the reliability of data cannot be quantified. This case study employs theory sampling. Creswell (2002, p. 196) describes this as a strategy where “individuals or sites are sampled because they can help the researcher to generate or discover a theory or specific concepts within the theory”. In this study, there has been a clear understanding by the researcher regarding the concepts and theories which may emerge. Using a succession of data waves, this study does not “quest for conventional generalizability, but rather an understanding of the conditions under which a particular finding appears and operates: how, where, when, and why it carries on as it does” (Huberman & Miles, 1998, p. 204).

Qualitative researchers routinely employ member checking, triangulation, thick description,<sup>44</sup> peer reviews and external audits (Bogdan & Biklen, 2003). Corroborating evidence collected through multiple methods such as observations, interviews and documents to locate major and minor themes is another means by which qualitative inquirers claim validity within a study (Creswell & Miller, 2000). In this research, I draw loosely from each of these techniques, but attempt to develop a strong and clear view of what emerges through the research process of crystallisation (Richardson, 1997).

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<sup>44</sup> I describe this thesis and its narrative form as a thick description. A thick description describes the setting, the participants and the themes of the study in extensive detail (Denzin & Lincoln, 1998). The purpose is that it creates verisimilitude, which are “statements that produce for the readers the feeling that they have experienced, or could experience, the events being described in a study” (Creswell & Miller, 2000, p. 129). In this way, credibility might be claimed through the lens of readers who read a narrative account and are transported into a setting or situation.

Added to this complexity is the critical ideology which underpins this research as outlined earlier in this chapter. The critical perspective holds that researchers should expose the hidden assumptions about the ways in which texts are constructed, read and interpreted. What influences our perspective about a range of texts is our own situatedness within the research, which is informed by our own social, cultural and multiple identities and ways of knowing the world. Creswell and Miller (2000), amongst others (Carspecken, 1996; How, 2003; Lather, 1998), suggest that the implication for validity of this perspective is that the validity itself is called into question, “its assumptions interrogated and challenged, and the researchers need to be reflexive and disclose what they bring to a narrative” (p. 126). Throughout this thesis, I have interjected and memoed, leaving strong traces of the biases and positionality within my thinking. In discussing the validity of this data, I will highlight the various lenses (Carspecken, 1996; Denzin, 2003; Marcuse, 2001) with which the texts have been approached.

According to some authors (Creswell, 2002; Fontana & Frey, 2005; Gubrium & Holstein, 2000; Schwandt, 2000), there are a number of lenses with which research may be viewed, and in the combination of resulting interpretations, the researcher may come to observe some concurrence in the reflections of those who interact. In this way, the inquirer uses a viewpoint for establishing validity. In this study, I have employed three lenses to varying degrees. The first is that of the researcher. Researchers craft and determine the ways in which the research evolves in many ways. Decisions such as how long to remain in the field, or whether there is sufficient data to establish good themes or categories, and how the analysis of data evolves into a persuasive narrative have been informed by the researcher’s sense of what is right in providing an adequate insight in a particular instance, with regard to a particular case and argument. Patton (2002) describes this process as one where qualitative analysts return to their data repeatedly to ensure that constructs, categories, explanations and interpretations make sense.

A second lens used to establish validity was the participants in the study. The qualitative paradigm assumes that reality is socially constructed and is what participants perceive it to be (Denzin & Lincoln, 2000a; Gubrium & Holstein, 2000), and this lens suggests the importance of checking how accurately participants’ realities have been represented in the final account

(Denzin & Lincoln, 2000a). Lincoln and Guba (2000) describe ‘member checking’ as the most crucial technique for establishing credibility of the information and narrative account:

Throughout this process, the researchers ask participants if the themes or categories make sense, whether they are developed with sufficient evidence, and whether the overall account is realistic and accurate. In turn, researchers incorporate participants’ comments into the final narrative. In this way, the participants add credibility to the qualitative study by having a chance to react to both the data and the final narrative (Creswell & Miller, 2000, p. 127).

Throughout the process of data collection and analysing, there was ongoing consultation and communication regarding the ways the participants’ actions and words were being presented and interpreted, between the teachers and myself. This occurred verbally and electronically/digitally through email and instant messaging interactions.

A third lens may be the credibility of an account by individuals who are external to the study (Creswell & Miller, 2000). Grounded theorists and schema analysts today are more likely to validate their models by seeking confirmation from expert informants than by analysing a second set of data (Ryan & Bernard, 2000, p. 783). In this study, I have discussed my data analysis and collection with colleagues in research. Further, I invited some colleagues and participants’ interested others to participate in and comment upon significant parts of the teachers’ work and student presentations of their learning. Another way external others have provided feedback has been in response to work one of the teachers published in a collegial journal. This work will be discussed in detail in subsequent chapters.

In my engagement with the literature, I have identified a lack of research, moving beyond the reporting of findings of these isolated studies. For example, as a result of studies of students’ images of the future, curriculum development remains unaffected by the need to address and critically investigate the foundations of student thinking through learning experiences. Similarly, whilst I have located various futures resources which clearly develop the case for futures education in classrooms, I have been unable to locate research which reflects the views of those involved in education regarding their role in ‘future preparation’. Similarly, much of the research about constructing a notion of the future is predominantly located in the

1960s and 1970s. Schools are under enormous pressure to introduce “new” aspects of curriculum. As educators, we need to be critical and discriminating in implementing appropriate learning directions, based on temporal perception and cognitive readiness of learners. It is not enough to say that children should think about the future, nor to provide a futures approach for the classroom. If futures education truly has a place in the Australian school, it must be introduced and developed within the scope of learner and teacher capabilities. This thesis, and the associated research, aims to develop those foundations.

As the future is clearly not predictable, I believe there is value in projecting possible scenarios and alternatives that may lie ahead, as well as in promoting opportunities for critical discussion regarding change, continuity and advancement in our world. Through this research, I am looking to validate my practices as a futures educator and to legitimate the need for the futures dimension in education, as well as more colloquially contributing to the World Futures Studies Federation (WFSF) of which I am an active member. As part of my creative teaching experience, I have enjoyed the openness in thinking strategies and tools which assist me to facilitate my thinking about the future, via the futures field.

### ***Summarising before moving on***

In this chapter, I have described this study as multidimensional. I have positioned this research within an interpretive paradigm, informed by critical ethnographic and action research methodologies. Subsequently I outlined the strategies I have employed in data collection. This chapter concluded with an exploration of my approaches to analysis of the data. It is through my approach to analytic bracketing that I will organise the next two chapters.

In Chapter 5, I will present the first waves of data. This bracket focuses on the discursive practices of teachers, or ‘what is said’, with particular focus on explicit professional reflection and learning about futures education. Chapter 6 will focus on the discourse-in-action bracket, or what is done when the teachers enact their professional learning within curriculum.

## *Chapter 5 – Discursive practices: thinking about futures*

In this study, the first phase of data collection within the site occurred through professional development sessions. The strategy for data collection in this phase is through focus group discussions which arise through stimulus of professional development materials. The sessions focused on interrogating the ways that teachers thought about the future, and the ways in which these perceptions played out through classroom practices, from the reflections of the teachers. In this way, this chapter focuses on the analytic bracket of ‘what teacher said’ in the context of explicitly thinking about FTP. The sessions took place within the school, over four weekly planning sessions, equivalent to approximately eight hours. The professional development sessions were the formal ways in which I commenced my collaboration with these teachers.

In this first phase of professional development and drawing upon key theorists and tools as described in Chapter 2, I provided direct instruction to the teachers as a group, regarding a number of futures ideas. At the beginning of these sessions I presented theories about temporality, in order to stimulate teacher reflection regarding their own time perspectives. Later, I used others’ images of the futures to elicit comments and responses. This enabled me to ascertain the ways these teachers perceived the future, and to identify their level of futures consciousness. Finally, I introduced these teachers to futures education, and we experimented with some futures tools to begin thinking about the ways in which these capacities might be integrated into curriculum, with a mind to the project based learning which would be developed in the second phase of professional learning, as discussed in Chapter 6.

This chapter is set out to reflect the main purposes of these Professional Development Focus Group (PDFG) and the findings which emerged. The purposes were threefold:

1. The teachers would reflect upon their own and others’ temporality with particular focus on their FTP.
2. The teachers would begin to think about the ways futures capacities were/were not/could be addressed through curriculum.

3. As a research team, we would negotiate the ways in which futures education could be enacted through the project based curriculum within the Grade 5/6 Autonomous Learning Unit [ALU] at Wooranna Park Primary School, as the basis of the subsequent term's learning.

### ***Teachers and temporality***

In this project, I worked with the teachers in the Grade 5/6 Autonomous Learning Unit (ALU), and a single Grade 5 teacher from a classroom referred to as the “little house”. Anessa Qirit is a graduate teacher who grew up in the USA. Her teaching expertise is working with Information Communication Technologies (ICTs). Mary Boutros is a qualified primary teacher and has been teaching for five years. She is committed to the development of thinking and reflective curricula, and social justice and equity in, and beyond, the classroom. Jennie Vine is a qualified secondary teacher, whose methods include humanities, literature, art and English. Penny Kalogeropoulos is also a secondary teacher, whose passions include maths and science. The Grade 5 teacher Geri Pitt is a primary teacher, specialising in attention to special needs, ICTs and science. Also overseeing, and advising our planning and implementation of this project, was the assistant principal and curriculum leader, Mrs Esme Capp. Esme has been responsible for the introduction of many pedagogical movements within the school. She is interested in maths and in Reggio Emilia education philosophies.

In our first meetings, the teachers were hesitant to participate in discussions where they had to align themselves with a particular view of the future. This was evidenced by the significant silences and pauses as their participation was sought. They were interested in ‘learning more about this stuff before I can talk about the future’ (Jennie, PDFG 1, l. 129). Mary was concerned about not providing ‘the right answer’, as ‘it’s not like we talk about these things very often’ (PDFG 1, ll. 243-245). Throughout the PD sessions, I acknowledged their reservations and agreed that futures thinking is complex. I believe that this complexity lies within individual grappling with ideas connected to the future and specifically with the lack of explicit opportunities we have to develop this futures capacity. From the outset, it was clear that the teachers in this project would require much support in developing the confidence required to take risks in their



own professional learning, and further to engage in these futures discussions. It is also for these reasons that much of the early PD sessions are dominated by me.

Through the PD sessions, I encouraged teachers to reflect upon their own futures consciousness, and to articulate their own biases and beliefs. In beginning these conversations, I led with open questions, as this would later allow me to examine the personal, local or global nature of their thinking. When the teachers were initially asked to note three things which might occur in the future, Anessa and Mary asked for further clarification.

Anessa: What exactly do you mean by the future?

Me: I am interested in how you see the future. Maybe not everyone thinks about it the same way.

Mary: That's hard ... Can you give us some clues? Is this like it's going to be all about space or something?

(PDFG1, ll. 44-50)

In early responses, the teachers seemed bewildered by these questions, and looked for scaffolds upon which they could hook their responses. Penny was adamant that 'the future will be very technological and scientific' (PDFG1, l. 453) and Anessa agreed that there 'will be a strong focus on Information Technologies' (PDFG1, l. 126). Mary was concerned by a world 'at war ... where lots of families are displaced' (PDFG1, l. 326) and 'social justice will become a major problem for everyone' (PDFG1, l. 761). Geri was more concerned by the specific issues she recognised for individual children in her classroom, especially those with diagnosed learning difficulties. In particular, she was 'worried about how some of these children will be able to manage their lives in earning and managing their money' (PGFG1, l. 329). For Jennie, there was a struggle between thinking about the 'future of the whole world, and the future in Dandenong, or in these children's lives' (PDFG1, l. 344). Indeed, as she depicts, there are so many different frames for thinking about the future. Penny, Anessa and Mary all responded initially with global images of the future. Geri was concerned with local futures, and Jennie with the interplay between the futures frames – personal, local and global. Reflecting upon these differences in thinking about the future will be important for understanding the various ways that students will also think about the future.

In discussing temporality with these teachers, I referred to the work of Slaughter (1995b) who illustrates that at any point of time we are always at a point where change can occur. He refers to this as the crossroads of time.

Me:                   The idea of futures and temporality is that we are always standing at the crossroads of time, and we've all alluded to that within this conversation already. For example, some of you have highlighted that we're on the brink of technological change. We're always on the brink ... In different stages of history, we've always been on the brink. During the period of the Enlightenment, we were on the brink of developing the rights of man. During the scientific revolution, we were on the brink of labourising our world, and being in full control of it. During the Industrial Revolution, we were on the brink of become a labour/production driven society. (PDFG2, ll. 210-27).

The teachers were keen to talk about different periods of change and which generations would have experienced the greatest changes in the ways they lived. Anessa reflected upon the introduction of the personal computer and the ways it has changed every aspect of life. As a 'younger person', she 'could not imagine life without a computer of some sort' (PDFG2, ll. 340-41). Penny recognised many periods of scientific discovery which had a major impact on the way that people live, for example, 'just the introduction of penicillin has meant that people live for longer' (PDFG2, ll. 352-53). Geri was also interested in the changes that science and technology had brought about. She was particularly interested in the ways that 'inventions of all kinds changed the world. Think of the wheel or flight. Travel has opened up the world' (PDFG2, ll. 357-59). Esme reflected upon the diversity of the community surrounding this school over the time she has been involved. 'There have been major changes which have happened everywhere because of immigration and refugees. In schools we have had to become more aware of how people are affected by different things, and also make sure that everyone understands how important education is' (PDFG3, ll. 376-81). Mary also thought about how the world had changed as a result of multiculturalism, and recognised differences between the way she had grown up as a young ethnic child, and children today grew up. 'I stood out on the playground,

and was left on my own because I was too different from everyone else. I would have been a pretty common site on our school playground today' (PDFG2, ll. 415-420). For Jennie, the changes in people's diets and exposure to different foods had changed the world:

I remember when we got milk at play time in small bottles, and lunch was a sandwich with jam and a piece of fruit. With packaging and different cultures, lunch time in the classroom is amazing. A bit like a food court (PDFG2, l. 425-28).

There were three main ways the teachers entered these discussions. Whereas Mary and Jennie commenced thinking within their personal domains, and highlighted key changes they had noted directly, Esme drew upon her experiences as a teacher within the local setting to speak broadly about, and further suggested the influences of the increasingly global context. Anessa similarly commenced broadly with the use of ICTs, and then reflected upon the possibility of life without them. Penny and Geri, through their keen interest in science and technology, continued to think about global changes which had occurred. Interestingly, through these discussions, when asked to think about how these particular changes would continue to develop in the future, again the teachers became quiet.

Whilst the teachers were comfortable to engage in conversations based in familiar historic and current paradigms, they were unsure of 'how to think about these things in the future' (Mary, PDFG2, l. 550). Penny had enthusiastically responded to many prompts in speculating about the future from a scientific perspective. For example, in early discussions, she had been excited about the possibilities of nano-technology. In this particular discussion, however, when asked how she thought science would continue to evolve, when thinking about medicines, she said, 'I can't tell you specifically. I just know that science will continue to discover ways of treating diseases' (PDFG2, ll. 555-6). When asked how she knew, she replied, 'because I just know. Look at the history you just talked about. Things just develop. That's the future' (PDFG2, l. 559-560). In this moment, across all teachers, there was a consensus that 'history is proof that things will change and happen' (Geri, PDFG2, l. 571). From these discussions, it was evident that these teachers assumed the future would just occur, which is what Inayatullah (2006b) refers to as assumed or taken-for-granted futures. It was also evident that they had not previously had the opportunity to think and study deeply beyond the broad rhetorics of the future.

The teachers often discussed the ways that education would change in the future. The dominant image of the future which emerged was one driven by technology.

Jennie: As time goes on ... as this technology becomes more advanced and sophisticated, the computer becomes the teacher. If that was to come to pass ... what if? And how that's going to ...

[Excited chatter ... single voices not recognisable]

Anessa: There are many software programs which teach kids stuff ... how far that goes ... how much will the computer ... there might not even be teachers ... or there might not be computers ...

Esme: There's already talk of that ... no human teachers is not really a possibility ... you can't question a computer ... Even then, back to Socrates ... you can read page to page, but it always says the same however many times you read it. It's the same with the computer maths program ... I've got a problem here ...

(PDFG4, ll. 216-229)

A number of key ideas become apparent. The future when distant and removed from the local context provides a somewhat speculative and creative space for consideration. In this instance, the teachers were very keen to explore the idea of the teacher as computer, and within their excited chatter were imagining what that scenario would look like. In the moment that Anessa made links to current technological teaching in the forms of educational software, that future became more realistic and threatening. Esme became strongly defensive, drawing parallels between a pre-programmed maths game and an educational resource (book) and that in each scenario a human teacher would still be required. This demonstrates the ways that whilst the futures images are generated from assumptions about advances in technology (the computer becomes sophisticated enough to replace the teacher), the teachers were unable to maintain this speculative frame of thinking (return to what computer programs do now). It also highlights the ways in which futures thinking can become confronting when the distant and removed image of the future becomes a more realistic possibility for a personal or professional future. It is at this subjective level that the teachers 'thought more deeply about what the future would mean for me' (TIEC, l. 211). In an interview with Mary (TIMB, l. 112-120), she described

how ‘the futures was kind of fun and didn’t really seem very serious **until** [emphasised by interviewee] it became real in **my** mind about **my** life’.

### ***Talking about the ways children think about the future***

In further exploring the ways teachers thought about the future, and in preparing to think about the ways that futures perspectives could be developed within curriculum within the Grade 5/6 ALU, we considered some research which explored the ways that children thought about the future. In the PD sessions, I used published materials and resources from my own classroom to facilitate discussions. In this section, I will mainly draw upon two key sessions’ discussions to interrogate the ways these teachers thought about the future, but also to reflect upon the ways they thought about their students’ thinking about the future.

In an early PD session, we considered questions which students had posed about the future (see Figure 10) in research undertaken by Hicks (1994), which reflected different aspects of the students’ lifeworlds. In Hicks’ research, the questions were posed by 8 – 10 year olds, in a research project which sought to discover children’s curiosities about the future. At first glance the questions appear simplistic. In this research project, I used these questions to stimulate teacher conversations about the future, hoping to gain insight into the constructions of the future that the teachers hold. With each question discussed, new insights into how the teachers perceived not only their own futures, but those of their students. became more apparent. Whereas in other sessions the teachers were silent in response to questions which specifically asked them to comment on a particular future, in these discussions, they were very enthusiastic to either accept or reject the ideas presented through these questions.



### Children's questions about the future . . .

- "I would like to know how we can stop pollution. If we can, I want to know!"
- "Will there be a judgement day?"
- "Will there be an end to war?"
- "In the year 2020, what is in store for us? We really don't want to know because of fear. Who knows, anything could happen!"
- "Will all the forests be destroyed?"
- "Will people live on Mars?"
- "Will there be families?"
- "I want to grow up in a world of peace and happiness"
- "Will we still use pens and pencils?"
- What sort of jobs will we get in the future?
- Will I still be laughing when I'm 50?

*From Hicks, Educating for the 21<sup>st</sup> Century*

**Figure 10 – PD Slide 6**

Many of the teachers' responses to the ideas of the children were initially dismissive. They saw the questions as trivial or as taken-for-granted. When we scanned across the questions broadly, the teachers were 'amused and fascinated by the simpleness of children's thinking' (Esme, PDFG2, l. 773). As different questions were read aloud for the first time by different teachers, there was laughter in the room. It was difficult to ascertain whether the laughter was indicative of amusement as Esme had suggested or discomfort as these teachers began to think more deeply about what the questions were asking. According to Geri, the children's questions were 'common sense. I mean, we all have questions like that ... well, not all of them' (PDFG2, l. 775-6). Jennie replied that she didn't have these types of questions, but that she was 'interested in how my children will live in the future' (PDFG2, l.777). Mary was reflective about how the children came to ask the questions. 'Do you think some of these children didn't have families?' (Mary, PDFG2, l. 801). Penny was thinking about the ramifications of addressing these questions in a classroom. 'How could you actually answer these questions for the children? Space travel is much easier to think about than ideas about peace and happiness' (Penny, PDFG2. l. 815). Mary disagreed strongly, describing 'how happy I feel just thinking for one minute that we could live in a world without wars' (PDFG2, l. 820-821).

As we focused more specifically on each question or idea, the teachers became more thoughtful about the layers of futures thinking which existed. In response to the children's questions, and after allaying anxieties about discussing such a 'sensitive topic' (Anessa, PDFG2, l. 815; Mary, PDFG3, l. 819; Jennie, PDFG2, l. 833; Geri, PDFG2, l. 835), we generated possible religious futures and how they would be lived out. One scenario described further sectarianism within our world, where belief in particular religions continued to lead to polarisation. Another scenario represented the inclusion of a variety of belief systems which complemented the ways in which people lived together, where individuals had the right to believe and practise self-selected faiths 'as long as they don't hurt other people' (Mary, PDFG2, l. 825). Once the discussions transcended what was known and experienced from the teachers' perceptions of the present, there was a lightening of the mood, and religion was not as sensitive or taboo a subject. Upon highlighting this to the teachers, they too reflected that the futures dimension had 'given hope' (Mary, PDFG2, l. 839) in a way that the scenarios 'seemed like something that could be done' (Esme, PDFG2, l. 842). Collectively we thought about the events and actions which would need to occur to move from the present moment in religion to any of the scenarios which had been envisaged.

The teachers had discussions about the 'constant push of sustainability' (Geri, PDFG2, l. 911). Penny believed that 'the first thing you think of when someone says anything about the future is how gloomy the forests and jungles and environments are looking' (PDFG2, l. 916-919). Jennie reflected upon many interactions which had occurred in her classroom on this topic. 'Children have said that we're bothered by the fact that this has happened to the Barrier Reef. We're bothered by this, but what can we do?' (Jennie, PDFG2, l. 921-924). Esme observed that in education, 'there is a real focus on environment, now more than ever before since I've been in education' (PDFG2, l. 927). Anessa was concerned that through some studies about the environment, the future seemed 'bleak and nothing could be done. Children ending up feeling guilty for everything they do. And it's really hard because how do you know which stuff to believe if you're not an environmentalist?' (PDFG2, l. 946-951).

The teachers voiced strong opinions upon environmental issues and the risks to human survival. In general, their outlook for planet Earth was very bleak, and based upon the various texts they have consumed from the media. They reported that in previous units of study, the

students were very passionate about environmental concerns, but did not change their lifestyles and 'saw everything that could be done everywhere else' (Mary, PDFG2, l. 963). An example was the binary which had become apparent between the natural world and the advancement of technology. Whereas the children had been concerned, they remained passionate about the advancement and use of 'technology for technology's sake'. Futures thinking provides an opportunity to work within binaries, as one advancement in one aspect often results to the detriment of another. Environment can be considered through the impact that new technologies enforce. Problems within the environment are created through different sources, and not all of them human, scientific etc.

The teachers described particular activities they had used in developing environmental perspectives. Upon reflection of their previous work, they observed that the learning often resulted with a 'feeling of shame' and in some cases fear. They noted that this was possibly because the learning remained in the present and past times, and that what was promoted was all the things that 'people weren't doing to be environmentally friendly' (Mary, PDFG2, l. 965). Whilst they also commented that learning had included some action, such as beginning a compost bin or collecting aluminium cans, the teachers realised that the lack of futures dimension had in some ways 'trapped all of us in feeling the same way, or a bit sadder from the start of the unit' (Jennie, PDFG2, l. 989).

An interesting contrast from the concern teachers had demonstrated regarding environmental futures was the excitement generated through discussions about space travels and other 'sciencey' futures (Anessa, PDFG2, l. 1225). Specifically in response to the question from the children's list (see Figure 10) about whether people would live on Mars, the teachers were in general agreement that there would come a time when people would live on planets other than Earth. Penny suggested that there were still other 'life forms and possibly planets or other forms which can sustain human life ... or there might be ways the human body will adapt to those other conditions' (PDFG 2, ll. 1310 – 1313). From Jennie's point of view, 'people used to think the world was so big, but now it seems small. Maybe the universe will get like that' (PDFG2, ll. 1319-20). Geri was emphatic that 'of course people will live in different places, planet, in the air. If the environment is in such a bad way, they will have to create new ways of living' (PGFG2, ll. 1331-1333).



“Will people live on Mars?” (PD Slide 6, Question 6)

Me: This is the idea of the techno, or space future. The idea of space travel.

Anessa: A very ‘sciencey’ future ...

The notion of a space future was clearly exciting and frightening for these teachers, Each of the teachers identified a range of television shows which she had grown up with which portrayed a strong sense that the future was connected to space travel, habitus and the advancement of technology. *The Jetsons* (Barbera & Hanna, 1962-1963 /1985-1987) and *Buck Rogers in the 25th Century* (Bender et al., 1979-1981) were the most familiar. *The Jetsons* is an animated television series projecting American culture into the year 2062. The future in this series was a world of elaborate robotic contraptions, aliens, holograms and whimsical inventions. In *Buck Rogers in the 25th Century*, there are similar depictions of the future. A 20th century astronaut is caught in a freak accident in deep space, causing his craft Ranger 3 to be blown into a trajectory that returns him to earth almost five centuries later. Earth is recovering from nuclear war and is coming under hostile attack by the Draconian empire. The revived astronaut awakes to new civilisations and ways of living which have changed, and now include an abundance of new technologies.

From their encounters with these media, the teachers ‘wonder a lot about the new technologies which will be around in 20 years or more’. There are suggestions about ‘flying cars’, ‘living in the skies’ and ‘meeting other people from other planets’. Teachers also recalled the family structures and working conditions of the characters in these shows, as well as the possible ramifications of interplanetary reproduction. I reminded them that *The Jetsons*, as an example, had been made over 40 years ago, and that many of those imagined technologies had not been realised. This was an opportunity to discuss the importance of being critical in our consumption of texts, especially in regard to the future if we are to position students as people who are able to make a change or contribute to shaping possible future scenarios. There were also questions raised about the ‘realness of the different ideas about the future’ (Anessa, PDFG3, l. 136-137).

In examining futures texts which portrayed different images of the future, there were instances where the teachers ‘just assumed that what is there will just happen’ (Mary, PDFG4, l. 27-28). For example, in an early session, Jennie assumed that ‘people will live more globally in their world’ as ‘the *global* is what everyone talks about now’ (PDFG1, l. 231-232). Penny and Anessa believed that there would continue to be ongoing discoveries in medicine but were unable to articulate the basis of these assumptions beyond their representations in the media. Geri also assumed that science would continue to ‘generate new knowledge and theories which explain the complexities of the world we live in’ (PDFG2, l. 32-33). Like the other teachers, Geri assumed that these developments would occur ‘because they had in the past, and because that’s what is on *Catalyst*,<sup>45</sup> *Beyond Tomorrow*<sup>46</sup> and on the web’ (PDFG2, l. 56-57). I raised the potential of examining some of these assumptions more closely.

Me:                    When futures arise as a result of engagement with popular culture, we refer to these as ‘pop-futures’. They need to be critiqued.

Mary:                Does this mean we won’t be able to walk into our wardrobe and come out dressed?

Mary’s question is an important one in this project as it demonstrates her emerging ability to connect those pop-futures images with the ways in which these images might be critiqued. Resultant from her response in this instance, the other teachers talked about the ways that they had assumed things ‘would happen in the future because I saw it somewhere’ (Penny, PDFG4, l. 27). Without the opportunity to discuss these ‘things openly, there is a real risk that a child ... or an adult [chuckle] could continue to think the same way’ (Geri, PDFG4, l. 37-40). Within the context of our PD sessions, the teachers became more open in their contributions to these discussions. In part, thinking about some of the children’s questions removed some of the pressure for teachers to respond directly to questions about the future. In these contexts they were able to generate futures thinking in response to the futures thinking of others. Increasingly, they were becoming more confident in articulating their ideas and in ‘not taking for granted what the children say as frivolous’ (Jennie, PDFG4, l. 113).

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<sup>45</sup> *Catalyst* is a weekly television show on the ABC network. It presents information about the latest developments in science and the ways these might impact upon the world in the future.

<sup>46</sup> *Beyond Tomorrow* ran from 2005 to 2008. It was preceded by *Towards 2000* and *Beyond 2000*. *Beyond Tomorrow* is a television show which examines the world of technological innovations and scientific breakthroughs.

“Will there be families?” (PD Slide 6, Question 7)

Mary: How sad that students need to ask that question.

Esme: That is a bit of a concern for us, here. We have a number of dysfunctional families, as well as students who no longer live with their own families. For those students, it is highly likely that they will not know family as we all have.

(PDFG3, l. 339-346)

To think about the existence of families in the future, the teachers considered the construct of the family in local culture and the ways in which that was changing as a result of diverse cultural and socio-economic influences. They reflected upon their own upbringings. Mary and Penny described growing up in a Eurocentric family which had a strong sense of the extended family, whilst others described their understanding of family around a nuclear version which resided within the same space. Only one had experienced a fragmented family experience, as a result of older siblings moving out whilst she was young. Whilst originally they had responded with shock to the possibility of changing family structures, they soon came to investigate the many forms a ‘family’ takes in contemporary Australian society. Esme reflected that ‘you would never have thought that two guys and a child could be counted as a family, but now you can’ (PDFG3, l. 347). Anessa responded how Esme’s idea ‘just confirms that the future means that some things might be very different. Nothing can be just assumed’ (PDFG3, l. 348-349).

Another idea which was highlighted through the teachers’ considerations of students’ views of the future was the different ways that different people viewed the world. It was as if for the first time these teachers realised that the students were aligning their personal futures with their images of the adults they knew. Whilst the teachers were amused by student queries about being happy and laughing as they got older (PD Slide 6, l. 11), they demonstrated a deepening awareness of how little each of them explicitly thought about the future.

The children’s questions had stimulated the teachers to articulate some of the beliefs that each of them held for the future. Overwhelmingly, what emerged was the taken-for-granted form the future assumed, and the associated powerlessness. In many instances within the first

meetings were many exemplars of the lack of ways in which teachers thought about the future or incorporated explicit futures learning within the classroom.

The children's questions in this instance also acted as a catalyst for new futures thinking. Amongst the teacher conversations were responses which demonstrated that they believed most things would remain the same throughout time. At times, the teachers' responses were limited. For example, in discussions regarding future family structures, they thought it was 'sad' that children had to 'even consider' that 'the family' might change, or the roles within. After a short period of time, teachers did think about reasons why family structures might change, and also about the need to be receptive to thinking about alternatives.

Furthermore, the children's questions allowed teachers to see some differences in the ways they each viewed the future. The first conversations assumed a singular future. Teachers made comments such as 'I assumed we were all thinking about the future in the same way' (Mary, PDFG4, l. 338). Furthermore, they realised that they had made assumptions such as 'the future is not something that you talk about in these ways' (Jennie, PDFG3, l. 978-979). 'If we ever talk about the future, it's bland and general, whereas in these conversations, it seems so much more tangible and real' (Anessa, TIAQ, l. 68). In some respects, this is similar to what Toffler (1970) referred to as 'future shock' where the future remains an abstract form until it occurs. Each teacher reported their increased 'sensitivity to the future' (Penny, TIPK, l. 9) as a result of these ongoing discussions:

It seems as though everywhere I look people are talking about the future, but it never felt that way before we started talking about it here. And everyone talks *about* the future without kind of talking about what's *in* the future (Jennie, PDFG4, l. 1021-1025).

Progressively through the PD sessions, the teachers were becoming increasingly conscious of the ways in which current practices and thinking could be complemented and transformed through the use of an explicit futures dimension. They became less dismissive of the 'simple' questions of children, which were helping them to think very specifically about different aspects of the future. Their thinking about any of the impacts of the future was becoming more informed by synthesising their understandings of the present, and exploring many possibilities. Out of the interaction between the teachers within these dialogues emerged a fertile ground for

the emergence of new and critiqued futures ideas. The teachers posed many questions, and made many statements which reflected the ways that they were beginning to interrogate their roles as teachers with regard to educating for a/the future.

### ***Futures and education***

Teachers commented on the ways education broadly addressed futures thinking. When the PD sessions began Mary (PDFG2, l. 873) asked, ‘Where do you learn this stuff?’. Along similar lines Jennie (PDFG1, l. 662) commented ‘I don’t think I’ve ever met anyone who studies the future before’. For Anessa (PDFG3, l. 73-74), it was ‘definitely not something I ever learned at school’. This was clearly a novel concept and dimension to consider in regard to schooling.

Me: I wonder what you see as your role as a teacher in developing some sort of notion of the future. We talk about schools as lighthouse schools, schools of the future, developing citizens of the future ... but it’s rare that we have the opportunity to engage in discourse about what future we’re actually referring to.

Jennie: I never have ...

In most instances, teachers commented that ‘I haven’t thought about the future and schools like that before’ (Anessa, PDFG2, l. 372). They increasingly recognised, however, that ‘this is really important, and we only touch aspects of it accidentally’ (Jennie, PDFG1, l.886-888). This accidental address of the future is what I have previously referred as an implicit futures education. It is also linked to Gough’s notion (1990) of token futures described in Chapter 2.

These teachers equated the futures dimensions within schooling with their role in preparing students for careers. ‘Let’s face it. At the end of school, the students have to have the skills to get a job’ (Geri, PDFG4, ll. 466-467). At various points in our PD sessions, the development of students for jobs was discussed at great length. In encouraging teachers to think beyond the present, I would ask questions which challenged them to think about possible changes which might occur within the world.

“What sort of jobs will we get in the future?” (PD Slide 6, Question 10)

Me: Are we assuming that we’re only going to have one?

Jennie: No, I think they’ll have five or six jobs. I’ve read that.

Me: Are we assuming that we will still be doing the same jobs?

Jennie: Someone will still have to teach. Someone will still have to fix taps and toilets.

Geri: Some jobs will continue, but other new ones will evolve. In the *New Scientist* I was reading about many new jobs which are around right now.

The careers that teachers saw their students working towards were very diverse, yet they found it difficult to describe new careers which might emerge, as well as those which might become redundant. Much of this difficulty lay within the teachers’ challenge to envision not only possible futures, but also the ways in which each scenario was underpinned by different assumptions, and relied upon resources and events. The way in which they cited information which they had ‘heard about the future’ (for example, Geri, PDFG2, l. 322) demonstrated the ways in which they were influenced in their thinking. Teachers had heard that future generations might have a number of jobs (Jennie, PG1, l. 484; Penny, PDFG3, l. 66; Anessa, TIAQ, l. 35-38; Geri, PDFG2, l. 322; Mary, PDFG1, l. 336), but had not thought about what had led to such shifts in the working life of humans, nor how a number of careers might change the demands of the formal education system. In this way, they were very ‘passive’ in the ways they saw their roles as educating for any future, and they continued to see the individual domains of education (reading, writing, maths etc.) as being as necessary across career possibilities as they would have been in a single career path.

The teachers collectively listed the skills they believed students should develop over the course of compulsory schooling in order to work. As seen in Figure 11 they highlighted the need for students to ‘think’. This is particularly relevant within the context of Wooranna Park Primary School which is committed to a thinking curriculum, and this is acknowledged in all planned learning opportunities. VELs also identifies thinking skills as essential learnings for all students in

compulsory years of education. The teachers also stressed the importance of developing digital literacies (Lankshear & Bigum, 1997) through the use of computers or ICTs.

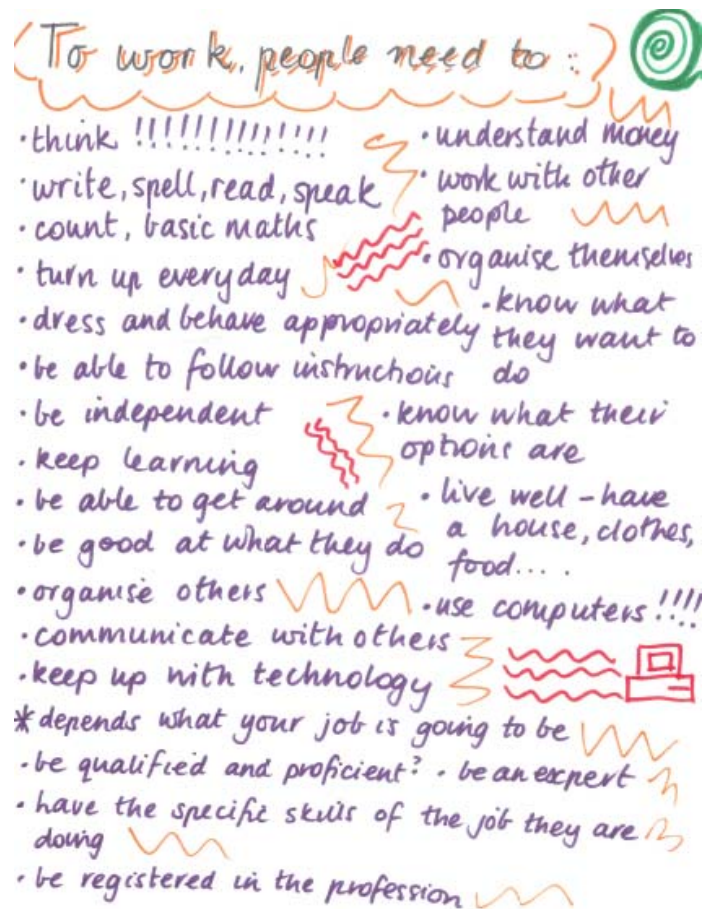


Figure 11 – PD4 Teacher brainstorm (work skills)

The teachers described a number of capacities beyond thinking that students would need in order to work in their future. As they listed these skills, they also described things which occurred at school to assist students develop these skills (see Figure 12), and in this way they noted ‘things education does to prepare children for the future’ (Esme, PDFG4, l. 628). It was particularly interesting that the teachers strongly believed that ‘everything a school does helps a student live in the world’ (Mary, PDFG4, l. 646). Specifically, they interrogated through different curriculum disciplines the ways that learning equipped students for different aspects of their future lives. For example, the teachers connected the maths curriculum to ‘a person’s ability to measure and build’ (Geri, PDFG, l. 660).

How schools prepare students for their future.

LOTS OF WAYS - SCHOOLS IS WHERE YOU TRY THINGS OUT BEFORE YOU ACTUALLY HAVE TO HAVE A FUTURE (JOB, FAMILY)

Everything a school does helps a student live in the future - PART OF THE WORLD.

learning about numbers helps us with money  
Maths teaches people to measure and build

Literacy ⇒ media, reading, writing, understanding  
\* language allows people to participate

Science - understand issues (global warming),  
develop appreciation of natural environments

Geography - travel, knowing where things are in the world, how to use maps, natural disasters

Politics - understanding how people get along and don't. Systems of govt. Countries relationships.  
How and why people vote.

Civics and Citizenship - the law. People's relationships with each other. Following the law/rules

Art - some students career. Valued (Mona Lisa)

Playtime/Lunchtime - leisure & recreation. work/life balance.

PE - importance of healthy lifestyle. ↓obesity

Sex education - relationships, contraception, \*not abstinence, responsibilities, options.

Timetables keep work habits and separate parts of life

Figure 12 – PD4 Teacher brainstorm (schools prepare for future)

The challenge was the ongoing assumption that we are preparing students for a future similar to the present. Another challenge was the way that teacher thinking continually returned to the traditional disciplines in order to audit the ways in which learning occurred. In itself, this is a conundrum in that teachers are seeking ways in which the futures fits the curriculum, as opposed to thinking about the ways in which the curriculum addresses an unknown future. This was clearly highlighted in a discussion regarding the role of literacy (language).

“Will we still use pens and pencils?” (PD Slide 6, Question 9)

Anessa: I don't think they will. If you have a look at technologies, and what children can do. At home and at school they much prefer to work on



computers. Even as teachers, we don't write as much as my teachers did.

Geri: No, they won't use pens and pencils as they are now, just like we don't use ink, quills, stones and sticks.

Mary: You can't say that. Of course they will use pens and pencils for some things, just as we do now.

Jennie: Then why do we teach them how to write?

As the early sessions explored various futures aspects, teachers slowly began to verbalise these differences which had been taken for granted. In a conversation about handwriting, two assumed that new digital technologies would become the dominant form of communication, and moreover that handwriting would become a 'classical skill, vaguely recalled in 20 years from now' (Penny, PDFG3, l. 668-669). The other two teachers in this conversation believed that handwriting would probably remain the most common and accessible form of communication, but at the very least the two approaches would remain in parallel existence.

Interestingly, debates which are currently flourishing amongst literacy scholars were reflected in the discussions in regard to the literacy demands of future generations. Along with Walsh (2007), Lankshear and Bigum (1997) and the New London Group (1996), some teachers believed that digital literacies or the use of technologies for various communications are 'the way of the future', and that such modes would supersede current pen and paper modes. Alternatively, other teachers, alongside professional associations (see for example Primary English Teaching Association, 2009) and Departments of Education (ACT Department of Education and Training, 2008; Department of Education Tasmania, 2008; Department of Education, 2000) believed that current practices of the explicit teaching of handwriting and print-text based reading would remain the dominant communication practices. Further, the teachers reflected upon the challenges of developing curriculum around technologies that they were not competent or confident in, if indeed digital literacies were important for classrooms. The challenge arising from each of these stances is that the future remained implied (see Chapter 3) or aligned with the use of technologies. In the same ways, the very notion that text based literacies would always be valued reflects a notion of a used future (Inayatullah, 2006a).

One teacher highlighted this issue as one which prevented teachers from being innovative and working ‘out of the norm’:

The problem with teaching to the future is that we haven’t necessarily got the skills or knowledge which is required ... which is why teachers always teach what they know.

Writing, reading, speaking and listening is what we know (Jennie, PDFG2, l. 793-796).

In regard to the reasons why teachers felt more aligned to a particular approach to future literacies, they described themselves as ‘being torn’ between the past and present, and the future (Mary, PDFG4, l. 1023). This ‘being torn’ was a result of their collective experiences of being literate, as reading, writing, speaking and listening, and of ‘knowing that it wouldn’t be this way forever’, yet feeling unable to ‘do anything about it’. Each of the teachers observed significant changes in their own lives and were able to articulate things which had continued (continuities) and those which had changed or no longer existed.

By comparison, the teachers recognised areas of the curriculum which ‘naturally were connected to the future’ (Geri, PDFG2, l. 111) and did not cause the same tension between past and present practices. For example, the teaching of environmental sustainability was ‘a reasonably new area in the curriculum’ (Mary, PDFG3, l. 1123) and as a result ‘there is less expectation about how it should be taught, or what standards it should be taught to’ (Penny, PDFG3, l. 1208-1209). Teachers discussed their students’ sensitivity to environmental concerns, and described them as very eager in their approach to learning in this area. The teachers aligned this enthusiasm with the ways in which students made explicit connections between what they learned in the classroom regarding environmental education and their own worlds (and futures). Going one step further, when Esme articulated that the teachers’ agendas were to link learning to ‘real and relevant’ issues and problems (PDFG1, l. 453), it was as though the teachers had not considered this reasoning previously:

When learning is real and relevant, it is connected to what the students are doing now ... but what you’re saying is that it could also be real for the future (Mary, PDFG4, ll. 769-770).

The teachers gave examples to highlight this new insight. Penny explained the key differences in what futures curriculum might offer, based upon Mary’s notion of learning as ‘real for the future’:

Right now, what is real is in maths teaching the kids to handle money, in maths taking the students shopping to teach them the ‘real’ skill of handling money. But what is real in the future could be how money might change, or if different systems of currency come into place. It’s the ‘what if?’ stuff we don’t address ... and that might be what’s real for the future (PDFG4, l. 779-785).

The teachers began asking many questions in regard to how they could both learn and teach these ideas in their learning spaces. They were curious about the ways that futures education would add to their innovative curriculum and to their own personal development. Increasingly, as they reflected upon what they knew of the students’ lives, they could see how futures perspectives were relevant to these children personally and collectively. In contrast, however, was an uncertainty about how they would go about this, and how what they did would be captured for this project. Added to this uncertainty was a lack of confidence and consciousness of how they themselves viewed the future. For these reasons, the ‘talking about the future changed to learning about the future and at the same time thinking about how we could use this stuff in the unit’ (Mary, TIMB, l. 302-303).

The teachers were clearly interested in learning about futures. In some respects, I suggest that they were interested in this area as ‘the more we thought about it, the more we didn’t know why we hadn’t thought about it before’ (Penny, TIPK, l. 19-21). Over the latter stages of the PD sessions, the teachers tried to rationalise why ‘the future hadn’t seemed so important’ (Anessa, PDFG4, l. 1523). In reflecting upon their futures consciousness, they began to acknowledge the importance of this thinking.

- Mary: I have never thought about this stuff. I just assume that we are all thinking about the future in the same ways.
- Geri: There’s not enough time to think about these things. Between all the other demands on the classroom ... but this is really important, isn’t it?
- Jennie: I don’t think I’ve even spoken to my own children about these things. At home, we struggle to get through each day, and keeping up with what’s happening next. As a parent, I want my children to be happy, healthy, and to study hard enough to get a good job.

As a group, we discussed the reasons why there's not enough time to think about these things, and the other 'things' which were given higher priority:

There are things we have to teach whether we want to or it's relevant to our students. Our kids can't do badly on AIMS tests or we lose the freedom to work in the way that we do. People expect us to do well. And with the facilities in the school, we're expected to use them. Ray [principal] often asks why we don't make films ... but films is just another thing ... like futures ... That's wrong. Futures is more than a curriculum area – isn't it? (Mary, PDFG4, l. 1651-1657).

These teachers work hard, but are stretched in regard to the resources they have in time to address all of the aspects of education. Because they are encouraged to 'keep up with all the latest developments in education ... [laugh] ... and to be part of them' (Jennie, PDFG3, l. 371) they are 'change fatigued' from the intensification of work. There is also the constant dilemma of what to incorporate within an already crowded curriculum (Goodlad, 2004). This dilemma is linked to what Groundwater-Smith (1998) refers to as the moral activity of teaching, in that in their daily practices teachers must make choices about what is worthwhile knowledge.

What became clear in these conversations were the ways in which the teachers, both personally and professionally, felt the 'pull of the present' so much more strongly than that of the future. In thinking about the ways in which Jennie's children might be 'happy, healthy and study hard enough to get a good job', we spent some time talking about what their happiness and health might look like, and some of the assumptions we made in 'transplanting the present onto the future' (Me, PDFG4, l. 389). We examined whether we could assume that all things, or some things, would remain the same, and that in fact through the teachers' eyes, how very little changed. Anessa commented quite animatedly that:

This is the reason that we don't talk about it ... If you don't think that things will change then it's not urgent to do anything about it, because everything just stays the same ... or otherwise if you think too much will change then you just feel as though there's nothing you can do ... So really you just let what happens happen, even though it mightn't be what you want it to be (PDFG3, l. 986-992).

This clearly demonstrated a sense of inevitability about the future and moreover a powerlessness to address what would/might occur. This teacher's reasoning suggested that to

‘tackle the future’ holistically was intimidating. In this study, I suggest that these teacher anxieties arise as a result of the ‘strangeness’ of futures thinking (Mary, TIMB, l. 13) and the deficit of teacher professional knowledge and literature which exists in this area. The teachers, experienced pedagogues and planners of curriculum, even struggled to think about the ways in which these conversations could be approached within the classroom.

Mary:                So, do you just ask students what their views of the future would be?

Esme:                Or before that, would you just ask what questions the students had about the future? Can we just ask students what their views of the future are?

Mary:                So, how do we actually go about doing it?

### ***Empowering teachers to think about futures pedagogies and practices***

In the PD sessions, there were a number of futures concepts and tools studied, in order to prepare teachers to incorporate futures perspectives within the curriculum in subsequent parts of this research. There were seven key ideas used to frame their thinking. I used a series of slides and other stimulus pieces in order to represent key ideas. These ideas, concepts and skills are based on the literature presented in Chapters 1 and 2. Figure 13 presents these as a montage of the stimulus materials used within these focus group events:

- How children think about the future
- How futures studies is possible
- Different frames for thinking about the future: personal, local and global
- The multiplicity of futures/3Ps in futures education
- The extended present/temporal mobility and connections through time perspectives
- The foresight principle
- Futures and thinking.

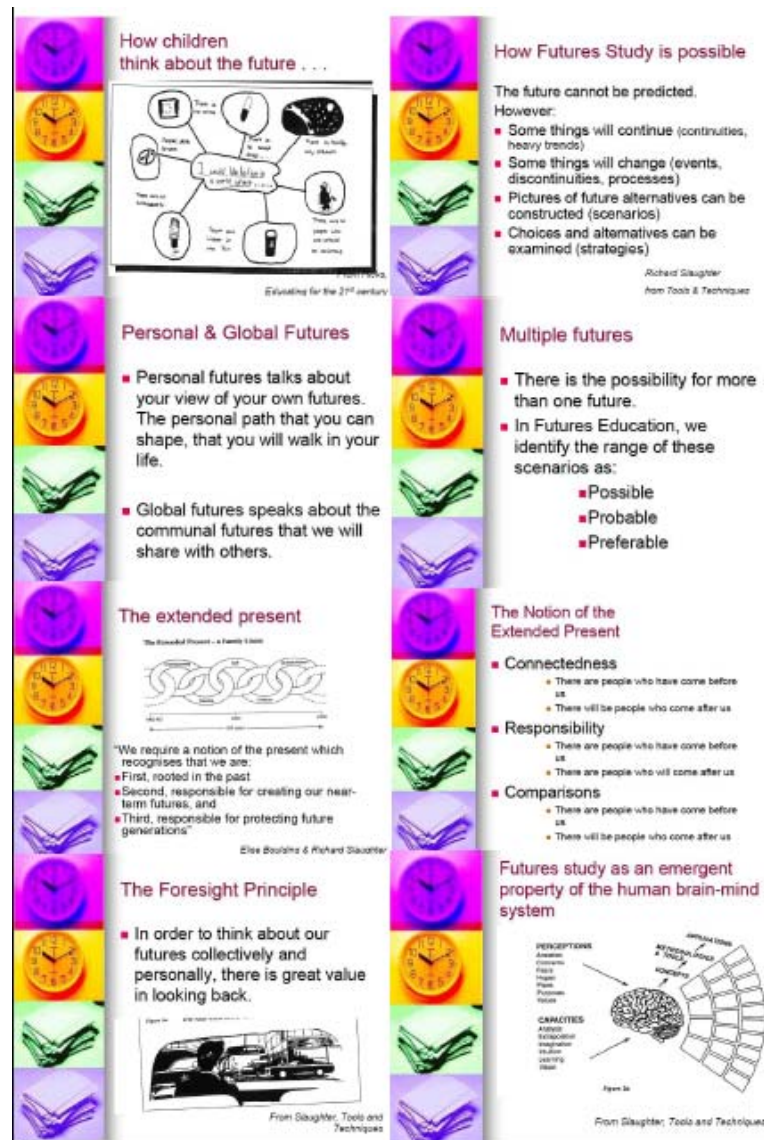


Figure 13 – PD – Montage of futures ideas used for framing teacher thinking

The teachers thought and talked a great deal about the new ideas they encountered, but were hesitant to ‘do anything’ with what they were learning. In an early session, I had planned for the teachers to create lists of things that would happen in the future. In the transition between the talk and moving into the planned task, two teachers hesitated.

Mary: Deb, do you think we could just keep working altogether? It’s much easier to talk about this stuff.

Esme: Yes, I think the teachers would feel more confident ... Why don’t we let them build confidence in what you are doing before we ask them to do anything?

(PDFG1, l. 238-256)

In this moment, I realised that I had made many assumptions about how simple this task would be to tune their thinking in. Thus in the discussion of the various ideas developed through these sessions, there is a blend of talk and later in applied activities, as the teachers built confidence, and were ‘comfortable to join in’ (Geri, PDFG1, l. 254).

### ***How futures studies is possible***

One of the most important ideas developed was that the future cannot be predicted. Rather, we talked about ‘interrogating alternatives and what was possible’ (Me, PDFG1, l. 664). There was significant wanderlust about how ‘life would change if you know what was going to happen in the future’ (Anessa, PDFG1, l. 966-968) and there would be more ‘control over what actually happened in my life’ (Mary, PDFG1, l. 970-971).

- Me: In history, there have been traditions which sought to predict the future. Does anyone read their horoscopes, see clairvoyants, heard of soothsayers?
- Visiting teacher: Yes, I read my stars. Not every day, but I will if there’s anything I’m not happy about, or if I’m looking for something good to happen. (PDFG1, l. 665-672)

The teachers talked about how a positive horoscope reading ‘gives you hope or something’ (Mary, PDFG1, l. 690), because ‘even though you know it’s not really going to happen, there’s just a small glimmer that it actually will’ (Penny, PDFG1, l. 693-694). In contrast, we talked about the many tools which the teachers would use to explore the possibility of futures, and through these activities there could also be ‘hope ... but more importantly agency and empowerment so that students can feel that they have a greater say in their futures’ (Me, PDFG1, l. 697-700).

Aspects of this agency and empowerment linked to notions of ‘people as futures designers and analysts in planning scenarios of alternate futures’ (Me, PDFG1, 710-711). This is part of the empowerment process, in the developing capacity to respond to what is apparent, whilst

drawing upon personal and collective expertise to articulate what else is possible. The examination of choices and alternatives are important skills within futures studies, and well beyond. Such engagement draws upon many areas of learning across the curriculum (see Chapter 2), and inter- and intra-personal skills that this school develops within their students.

- Anessa:           The people that I teach might be those ones to make breakthroughs.  
Me:                Do you think your teachers thought the same way about you?  
Anessa:           No. You always have that one or two teachers who have believed  
                      you could do anything, and encouraged you ... they encourage you to  
                      believe in your own potential for the future.  
                      (PDFG1, l. 725-734)

### ***Different frames for thinking about the future – personal, local and global***

The teachers were particularly interested in the different ways one could talk about the future. In retrospect, they reflected upon the ways each of them had entered into futures conversations. In thinking about personal, local and global frames of thinking about the future (see Chapter 1), it was apparent that some preferred to work in different futures frames to the others. For Jennie, ‘it’s all about the life I will share with my kids. Growing up as a happy and healthy family’ (PDFG1, 1141-1142). Similarly Penny and Esme also shared an image of the future which was linked to their home lives. For Anessa, there was concern about ‘the state of the US ... my family are still there’ (PDFG1, l. 1145) and clearly this highlighted the links which occur between personal and global futures. For Geri and Mary, their futures frames were strongly linked to images for their local context. In particular, Mary was strongly aligned to an image of the future based on notions of social justice.

The teachers identified the ways in which these frames could also be reflected through the learning of Civics and Citizenship. Esme suggested that this was one way ‘which made the study of the future look more manageable and relevant to the children’s lives’ (PDFG1, l.1213). It was also in this way, I suggested, that students would be able to identify the interconnectedness of personal, social and global domains. In this way, students would develop a greater



understanding of the ways in which they can more actively participate in shaping the various contexts in which they interact.

### ***The multiplicity of futures/ 3Ps in futures education***

A main ideology which underpins futures education is the different levels of futures thinking which are possible, as well as the different frames which are used for viewing the alternatives. This suggests the idea that more than one future can occur, and that many different perspectives are held by individuals. These frames reflect the different probabilities that alternative scenarios will occur. These different levels and approaches to thinking about the future were described in Chapter 1. Possible futures are non-critical, and invite creative imaginings. Preferable futures are those which the individual or group feel an alignment to. A probable future is dependent of a student's forecast, based on recognition of trends occurring in their wider worlds. The '3Ps' (Possible, Preferable and Probable) invite student participation in learning opportunities, at varying degrees of cognitive and affective engagement. As a teacher, it was this aspect of futures thinking which most attracted me, especially as I was working in a disadvantaged school where students had extremely low aspirations of what was possible in their lives. Similarly, these teachers found the multiplicities within futures thinking quite appealing in addressing the diverse learning needs of the children within their unit.

Me:                    The idea of multiple futures is that there is not one single view of the future which can be assumed. If we only project the singular future, we disempower our learners, in not addressing their ability to shape futures. So, there is the possibility for more than one future.

The teachers at Wooranna Park were passionate about 'making a difference in our students' lives' (Mary, TIMB, l. 26). 'The more options we are able to give these students ... the better' (Esme, PDFG3, l. 1.713). The way in which students could explore a number of futures provided the opportunity, from the teachers' perspectives, that each of them could make more informed choices 'about what they could actually do with their lives' (Mary, PDFG3, l. 723). Without realising what they were suggesting, the teachers were challenging some of the taken-for-

granted images of the futures their students held. Moreover, they were critically addressing their previous claims that school was educating for a students' future and describing the potential of incorporating futures thinking within the curriculum. This was particularly important in this setting, as it had it been in my own classroom setting, because these students 'are capable of so much more than they think they can. They just think in one way because that's how they see their parents live' (Jennie, PDFG3, I, 788-791). The reader will recall the ways in which Reggio Emilia philosophies of teaching and learning support these notions (see Chapter 3). In some respects, futures education demanded that teachers reconsider the ways that Reggio philosophies were and were not being brought to life in the ALU.

Me: Futures education allows us the space to work differently. It's about breaking some of the traditions ... it's about breaking some of the beliefs and stigmas that some of these people actually have about themselves

Mary: We can say that 'You won't necessarily be working in a factory, that there are other areas in which you might be working'.

Esme: That's important.  
(PDFG3, I. 770-779)

The teachers also saw that in many different levels of futures thinking, there were various entry and exit points for students of different abilities and interests within the classroom. The teachers appreciated the flexibility that the different ways of engaging with this thinking provided. In these aspects, they recognised the pedagogical appeal of futures thinking, again connected to their commitment to Reggio Emilia.

Me: In futures, we talk about the idea of the 3Ps. We describe futures as possible, probable and preferable. In possible futures, everyone can articulate possibilities, and the limits are not apparent.

Mary: So, even kids with learning difficulties could make up a possible future (which won't actually be right) ... We can't actually say that these possibilities are wrong.  
(PDFG3, I. 844-892)

Mary, in particular, clearly grappled with the idea of multiple futures. On one hand, she recognised an opportunity for special needs students to engage with the same content as other students on their own terms. On the other hand, she was still caught up in judging whether a futures idea was correct or incorrect. Arising from discussions about possible futures, teachers agreed that these scenarios were open-ended and ‘almost anything goes’ (Esme, PDFG, l. 911). They also agreed that by drawing on historical and present understandings they could judge a scenario to be probable or more likely than others. The teachers’ main concerns, then, were with how they would correct student work as ‘right or wrong’ in whatever was produced, and what they would do in the event that their students’ thinking did not match their own.

There were further conversations about what might happen if preferable and probable scenarios were not the same. When the teachers were asked to articulate their own preferable futures, they immediately responded with personal futures scenarios. These included ‘more money to take the pressure off us’ (Penny, PDFG3, l. 1011), ‘my family to be happy’ (Jennie, PDFG3, l. 1015), ‘finding a different job’ (Anessa, PDFG3, l. 1017) and ‘maybe marriage and children’ (Mary, PDFG3, l. 1021). The teachers thought that these scenarios were both possible and probable, as they had ‘some control’ in whether they occurred or not. When pushed to provide insight into global preferences, the teachers used words such as ‘peaceful worlds’ (Mary, PDFG3, l. 1041), ‘balanced family and work lives’ (Jennie, PDFG3, l. 1044), ‘a lesser use of technology and more face-to-face interactions’ (Esme, PDFG3, l. 1046), ‘a reduction in global environmental issues’ (Anessa, PDFG, l. 1048) and a ‘lay-down of all weapons’ (Geri, PGFD3, l. 1052). When asked whether these events were possible or probable, the teachers all agreed that they were possibilities, but that ‘none of them are very probable’ (Mary, PDFG3, l. 1062). They concurred that there was ‘very little we can do to change these things’ (Anessa, PDFG3, l. 1077) Amongst all of this thinking, within the immersion of these interactions, Mary realised the complexity of futures thinking. For her, this was ‘a turning point in my thinking about futures in the classroom’ (TIMB, l. 66).

Me: As we begin to draw upon what we know of the world, and how these knowings affect the way the future will occur, we become more discerning, and also become aware of the many factors which are at play in our world. We ask our students to reflect upon what criteria they use to decide what futures are more probable than others.

Mary: This is why you can't have THE future ... I need to think more about many futures.

(PDFG3, I. 1100-1108)

Amongst this conversation, there was a lot of focus on how taken-for-granted the future was as a dimension for inclusion not only in learning, but also in the teachers' personal lives. Teachers identified parts of their current classroom practice which would be enriched by concepts presented thus far. For example, a futures dimension would be beneficial in exploring the Grade 6 transition to high school program the students were about to undertake. Whilst previously the teachers were feeling overwhelmed by the apparent 'complexities' of futures thinking, and how they would possibly introduce such thinking into their classrooms, in this session they felt as though the multiple futures made this curriculum very open and accessible for a range of abilities within the classroom.

### ***The extended present/temporal mobility and connections through time perspectives***

As discussed in Chapter 2, it is important to develop temporal learning which is temporally balanced. A temporally balanced approach demands that a person is able to make connections between the different temporal frames of past, present and future, and this is achieved through the capacity to temporally scan. In the PD sessions, I described temporal scanning as an intentional awareness and movement of thinking between different time perspectives. We discussed ways in which different events connected us to other time frames, known and unknown, and tools futures studies engages referred to as incasting, forecasting and backcasting. The teachers reflected upon classroom experiences which responded to these ideas.

Jennie: We went on a trip to Canberra with our students, to the CSIRO. The kids saw a sheep which will get an injection to drop its fleece in the future. I can imagine a group of shearers sitting together retelling stories, while also imagining a group of scientists sitting together talking about the impact on the sheep. These things will have an impact on farming communities, and shearers and traditions within rural settings.

As a group, we considered some activities to further explore temporality which we would later analyse to identify various futures tools and concepts. One of the activities we pursued was to create conversations between different time frames. We did this in two ways. In the first application, we played ‘hot seat’ (Zwiers, 2004), where each of us took on a different role in representing the viewpoint of a particular time frame. The viewpoint focused on the construction of high density accommodation close to the school, and each frame was asked to think about the reasons and ramifications of the particular site. To encourage collaboration and peer support, the teachers paired up. The ‘past’ argued that the land which had been built on was of significance, due to events which had happened there. The ‘present’ argued that the high rise units had to be built because of the lack of facilities which were available for the influx of new arrivals in the country and in this specific area. The ‘future’ expressed gratitude for the multicultural community which had grown and had emerged as a ‘beacon of how differences could co-exist for the rest of the country’ (Geri, PDFG3, l. 1342-43). Whilst the teachers responded to the activity with some reticence, they were creative and enthusiastic participants, and were able to identify a number of the futures concepts we had previously explored.

Another activity we explored in a subsequent session highlighted more interactions between the temporal frames. Whereas in the first activity we had focused on collective or shared experiences resulting from the high rise construction, in the second we used our own personal future lives as our points of reference. The teachers were asked to write themselves a letter from a member of their family in the future. Based upon my own classroom experience, students enjoy sending letters from the future, questioning present and historical practices, and rethinking what is occurring in their present. I have provided an exemplar of a teacher’s work (Figure 14).

20.12.2030

Dear Nana,

We have been learning about you in our ed-collective. The mentor asked us to research how our families used to live in the ~~olden days~~ middle years of earth. On webhundred, it says that you used to decorate trees and sit on a fatman's knee to wish for all the things you wanted. It's hard to believe that people were so simple back then, and needed to wish. Today, we all know that there's no fatman or tooth fairy who will make the planet better.... Since that time that the Alluvials landed and reorganised how we live, we all had to learn that all of us are good at something, and if we work together in our collectives, all of us make our planet better.

We have learned lots of things from the way that you lived when you were younger. Thank goodness that our mentors don't lock us in horrible buildings and make us remember stuff. Because you all learned the same things as each other, there were lots of things that couldn't be done when the world changed (Remember when Alltheatans hijacked the world communications centres!) Our mentors learned that each person needed to learn different things, and that the different things covered alot more

Figure 14 – Professional learning activity: a letter from the future

Through the activities, the teachers became much more receptive to futures thinking as demonstrated through the creative responses to the tasks. Whilst two of the teachers required ongoing encouragement and further clarification with the introduction of each task, the others became more visibly excited and eager to undertake more professional learning. The teachers increasingly began to think about the ways that learning might take shape within their learning units, based upon more of their previous experiences with the students.

Geri: It was interesting this morning. We went for a walk to see the old homestead around the corner here ... I said, 'When they built this, and they designed it, what did they have and what did they plan for?' And I thought it was curious because there was nothing to cook with and no

garage and no front porch and you could almost see them saying, now what would you be building in a new house now?

The children wanted to know why we even keep some of these historical kind of old places around anyway. What's the value in actually having them there? There's a place for futures thinking here!

(PDFG2, l. 799-810)

The capacity of temporal scanning is used in many dimensions of futures studies. It is best developed through the notion of the *extended present*. Whilst highlighting the ways that the extended present demonstrates understandings for the students about how they are connected to people of other times, we discussed the rich comparisons which could be made, as shown by the previous activities. The idea (see Figure 13) that there was a 'responsibility' that each 'generation' had for another caused some contention amongst the group. Whilst the teachers saw that the students' actions had some consequences for 'future generation', two teachers felt that it was 'wrong to burden the children with such great responsibility at such a young age' (Esme, PDFG3, l. 1312), and interestingly equated the 'students' actions as negative. Further, the teachers could not identify what responsibilities they had to the past generations. Amongst the discussions, we contemplated why we gathered for 'remembrance days', and whether there was any 'responsibility'.

Me: I have always found the World War I poetry spoken on Remembrance Day particularly moving:

*They shall not grow old, as we that are left grow old:*

*Age shall not weary them, nor the years condemn.*

*At the going down of the sun and in the morning*

*We will remember them* [Laurence Binyon, *For the Fallen*, 1914].

For me, the remembering them was like a pledge, that in return for their lives and their service, we had a duty to honour the memory ...

Geri: Of course, and we do have a responsibility to the elderly ... who are kind of the living past ...

Geri's idea of the elderly as a living past reflects the understanding Elise Boulding (1978) had of the notion of the extended present. Boulding used a family chain to demonstrate the

connections between time perspectives. The teachers began to reflect upon the idea that they have simultaneously been situated within others' futures, presents and pasts. There were clear overlaps between each of the time frames which the teachers could identify and they saw the ways in which these ideas could be used within their classrooms to develop 'richer senses of time, than just talking about how it used to be' (Esme, PDFG 3, l. 894). The walk around to the local homestead had raised questions for the teachers, in terms of the ideas the builders and owners had held when they designed and constructed it. Similarly, they were able to reflect on the different demands that home-owners have, and the ways that housing might change according to the future which evolved.

- Penny: Yeah ... that is alright if you are born here, and the people you are remembering belong to your culture ... Some of the children in our school would not feel any responsibility or duty to even think about Australian soldiers ...
- Me: But, wouldn't they feel a cultural duty to remember the traditions and customs of their own groups?
- Penny: Yes ... and that's why some of our children go to their own schools on the weekend ... I guess it's a responsibility of the community ... and the way to link the past people with the future people through the people now.
- Mary: And we want our kids to feel this responsibility because it will unite them.

Whereas all the teachers had initially responded to the notion of the extended present as a family chain warmly and enthusiastically, when Geri had made a connection between the extended present and a cultural tradition such as remembering those who went to war, it was evident that the group had been polarised. As demonstrated in the conversation between Penny and Mary, due to their different ethnicities and cultural traditions, they felt excluded that they could not share some of the connections. Initially, they had been unable to see that in the same ways that the war remembrances had excluded their participation, their weekend schoolings and other traditions similarly separated those who did not belong to those groups. They later realised that this notion of the extended present and family chains could be applied on many different levels, personally, locally and collectively.



As a group, we explored the ways that the extended present could be applied within the classroom. As an example we considered the toys which have been used during our 200 year present – that is, the time which includes the birth of our grandparents, up until the birth of our grandchildren. I had brought examples of things which people have played with, including my grandfather’s marbles and pop-gun, as well as a doll and boxes of cars which my younger brother had played with. We looked at catalogues to identify toys which were currently available, and the teachers listed the toys/recreation items which their students had described. In the next phase, we brainstormed the kinds of toys we thought would exist in the future, for our grandchildren. It was apparent that the teachers saw that technologies would continue to emerge and that interactions between children, regardless of age, would become more virtual. Anessa (PDFG3, l. 1265-1268) claimed:

it’s only a minority of children who still play with blocks ... or only very young children. Everyone else has a DS (Nintendo Double Screen) or a Wii (Nintendo gaming system) ... It means that you don’t ever really go bowling because you can do it in your lounge room, on your own.

### ***The foresight principle***

The other way in which teachers became temporal scanners was through becoming familiar with the foresight principle. Effectively, this means that in making considered decisions, it is important to draw upon the lessons or precedents from the past, in order to move forward, or in alternate directions. The teachers quickly identified how such an approach would satisfy recent directives to teach history in Australian classrooms. However, prior to investigating applications of the foresight principle, they grappled with the validity of history and the challenges which arose in teaching different aspects.

Geri:                      So what do you say, as they say in the *New Scientist*, when they say that history has been written by the people in the present about the people in the past? That’s their own understanding.

Jennie:                    How critical do you get with the kids?

- Mary: You know, history has been written for somebody's agenda.
- Esme: I was at a conference recently where they said that education could be seen as a way of government having an agenda of what they want the future to be, and that history was a way of justifying it.
- Geri: I thought everybody knew that.
- Anessa: I didn't ... and I didn't think we could really say things like that.
- (PDFG4, l. 355-370)

It was important in this instance to clarify that we were not engaging in history, with a sense of adopting it as pure or accurate but that, in the foresight principle, history and events which have occurred within the past and in the present act as ways of informing new decisions, which may have been met previously. The teachers talked about ways in which governments could draw upon previous times, and other cultures' previous cultures to inform their decision making. As an example they discussed resource management, particularly water, and many instances within world history where people had responded to water shortages. Similarly, the teachers felt, whilst a sensitive topic in the classroom, that by studying wars through history, it may be possible to avoid the loss of human life, and moreover nurture cultures of global collaboration. All agreed that it was important to critically engage with historical accounts, in the same way that we would need to be critical in 'reading the future'. They remained concerned that the curriculum was not 'politicised' in the ways we worked with historical contents. Interestingly, there were many instances within the PD sessions where teachers felt concerned about, or limited in, what they could address within the content of learning.

### ***Curriculum inhibitors***

Throughout the stages of PD, there were many ways in which the teachers viewed futures dimensions as problematic. In some aspects, it was the future itself which was identified as troublesome, but in most instances, it was the teachers' sensitivities to their students' diverse backgrounds. They were also concerned about how they could 'deal with stuff as it came up in the classroom' (Mary, PDFG1, l. 1431).

In thinking about introducing the future within a classroom, it was suggested that the teachers could ask students to make predictions. Mary considered setting up a clairvoyant's

booth with a crystal ball. Esme advised that this type of approach ‘could be asking for trouble with some of our parents’ (PDFG4, l. 673), especially given that this was a ‘very different topic to what we usually study’ (Geri, PDFG4, l. 680). It was unclear whether the teachers were transferring their own anxieties about ‘teaching the future’ onto parents, or whether indeed the parents would be concerned by an activity used for the purposes of tuning students’ thinking into the topic.

There was concern about the ways ‘we will tell parents about teaching the future’ (Jennie, PDFG4, l. 1561). Within these discussions many questions were raised, further demonstrating the teachers’ anxieties in teaching futures perspectives within the classroom. These included:

- How can we show the parents what we are going to do in this project? (Esme, PDFG1, l. 773)
- We’ve spent all this time talking about the future. How can we teach parents about this way of thinking? (Jennie, PDFG2, l. 1198)
- What if the kids don’t get it? (Anessa, PDFG2, l. 1221)
- What will we do with the kids who aren’t allowed to study this? (Mary, PDFG4, l. 1400).

These were of great interest to me, during the PD. I was curious as to whether parents had such consideration in other units of study, and if not why this was so markedly different.

Mary: I don’t know, really. Sometimes parents complain because of religion. Sometimes it’s just their culture and things are different here.

Geri: I think sometimes parents just say no to things because they don’t understand them ... and because we let them say no.  
(PDFG2, l. 1232)

There were other dilemmas also highlighted within these questions and in particular about the professional judgements of teachers to make decisions about the content of their curriculum. These questions were particularly surprising, given the innovative nature of this

school, and the ‘autonomous learning unit’ these students belonged to. In many instances, I queried how autonomous learning could be if it was mediated through the interests of ‘others’.

The teachers increasingly expressed their frustration in their ability to facilitate these discussions within their classroom. When asked what they saw as the biggest ‘obstacle’, they responded that the diverse backgrounds from which their students came often meant that particular subjects were ‘taboo’. We briefly hypothesised about the ‘type of future’ which might occur if classroom learning reinforced some of the barriers which various cultures and societies imposed. Interestingly, there were many aspects of life highlighted in these initial discussions which were considered ‘too hard’ and ‘not appropriate’ in applying futures thinking. Whilst environmental perspectives were common-sensical as belonging to futures activities, values-laden and cultural aspects such as religion, traditional customs and war were too problematic, especially within a diverse setting. My own initial response to these discussions was one of concern. In not examining some of these problematic ideas, we continue to reproduce ignorance and prejudices amongst societies and cultures, particularly within adolescence. In itself, these discussions highlight the critical dimensions within this ethnographic site, previously described in Chapter 4.

In many of these conversations, teachers were concerned about how topical some of the content might be, and described elements of students’ lifeworlds which were considered ‘taboo’ or out of bounds for fear of causing tension between the students or within the school community between different families. For example, in discussing the children’s questions about the future, religion was raised. There was a great deal of agitation amongst the teachers.

“Will there be a judgement day?” (PD Slide 6, Question 2)

Mary: Oh my God, religion! This can cause problems in our classrooms. Many of our students believe in different religions, and are aware of the idea of judgement day, or the final day, or the end of the earth, whereas others believe different things about being reborn, and next lives being related to the lives we lived before ... We can’t do religious futures!

Me: Religion has an incredible influence on our futures thinking ...

- particularly in that we know, one day we will die ... I wonder why you think that we can't explore some aspects of our futures.
- Visiting teacher: Students do ask which view is right, and how many different things happen to people after they die, depending on their god.
- Me: Religion informing a futures view is very relevant, and you need to be very aware of it. Spiritual sensitivities must be observed, especially in a classroom with such diversity.
- Mary: They don't call it judgement day. They'll more talk about the end of the world ...
- (PDFG3, l. 677-698)

The discussion over religious futures evoked other interconnected conversations regarding how religion should be taught and whether a state school should or should not include any learning about religion. I reminded the teachers that the questions that we were working with were asked by students and that there are many instances where students ask questions which were not previously on the agenda, nor necessarily relevant nor appropriate to what was otherwise being discussed. The teachers impressed upon me how problematic discussions around religion, and 'other cultural things were' due to the very diverse cultural backgrounds from which their students came.

The other concern that teachers had was in dealing with negative future views. They were anxious about the ways in which they could address these images of the future when they were only learning to think about futures perspectives.

- Mary: There's a doom and gloom aspect here with kids. They look at what the media is presenting, and many of these images of the brink are negative. I feel that way, myself ... They [students] haven't got the intelligence yet to do all the unravelling and sorting.
- Anessa: Yes, there's a sense that we're all going to die.
- (PDFG1, l. 1255-1263)

Once again, the importance of disrupting these views and interrogating the foundations of these beliefs were highlighted in the PD sessions. The teachers were comforted in these

anxieties in knowing that I would partner them through the curriculum planning process and provide ongoing advice. However, they had made an assumption in this short dialogue about the limited intelligence which students brought to this thinking.

Me: Slaughter says that the child's mind is the natural playground for futures thinking. We lose the capacity to think differently as we get older ... We also lose the freedom to think about possibilities. In no way does this trivialise learning or student understandings about their worlds. As a teacher, you will have to address and respond to the ideas presented by these children, at their level of thinking. But then, you don't know what the future is either, and so the co-emergence of your ideas is important. This is learning in partnership.

Mary: I'm sure they'll have better ideas than me. I'm struggling to keep my head around these ideas. I did think the future was just common sense.

(PDFG2, I. 544-556)

### ***Some thoughts before moving on***

Through the ongoing PD sessions with these teachers, I identified several assumptions which are associated with futures thinking and education. The first is that we share the same view of 'the future' and that the future is a singular construct. Furthermore, there is the assumption that the learners in our classrooms can see the value of what they learn in regard to a view of the future which each of them hold. Students are confronted with images of the future in many domains of their lives and not taught nor encouraged to critically deconstruct or engage with what is presented. As demonstrated in Chapter 2, humans have the capacity to think within a range of time frames, and moreover with futures orientation. As educationalists, I believe we have to develop these capacities to a greater extent and far more critically.

In moving this research forward it was important to keep contextualising this professional learning in regard to the learning projects which would follow. I wanted to encourage teachers to reflect on their own futures perspectives and biases in general. I was very conscious of the need to keep these theories firmly planted within accessible practices for the classroom. The

teachers were an integral part of this project, and it was important that they feel confident, engaged and capable of implementing futures perspectives. Through the learning sessions, what became evident was that whilst the teachers had gained a theoretical perspective, it was crucial to move into the action phase. Thus, in the next chapter of the data, I will describe the ways in which we moved from the ‘talking phase’ of this research project into the ‘doing phase’ and the learning which emerged.

## ***Chapter 6 – Discourse in action: doing futures in learning spaces***

In this chapter I present the findings of the second stage of the research project – discourse in action. In the previous chapter, teachers’ perceptions of futures and their developing futures consciousness as it related to student learning were explored. This chapter documents the next stage of the project – the development and growth of a professional learning team to further develop teachers’ futures pedagogies and to support the application of these in the classroom.

In the previous chapter, I outlined the ways in which the teachers arrived within this project. Through ongoing PD, I led them in focus groups which served two main purposes. The first was in interrogating the ways these teachers thought about the future and how this affected classroom practice. The second purpose then was to explicitly provide a theoretical foundation and futures understandings which enabled teachers to develop futures based curriculum for their classrooms. In this chapter, there is a shift from the teachers theorising about futures to explicitly developing and enacting FTP within curriculum. I refer to the gatherings of the colloquial group as a professional learning team (PLT), collaboratively and independently applying and reflecting upon their futures theoretical foundations.

### ***The professional learning team (PLT)***

Drawing upon the literature highlighted in Chapter 3 which described professional learning, combined with enactivist and Reggio Emilia philosophies, I developed a model for the PLT in this research. There are three distinct stages of professional learning which occurred within this phase of the research design:

- Transition into PLT
- Supported enactment of professional learning
- Independent enactment of professional learning.

In this chapter, I will describe the data which emerged through each of these stages.



Within the transitional phase of the PLT, I remained positioned as the expert, leader and facilitator of the group, increasingly inviting greater collaboration. This stage is transitional in the ways we shifted from the teachers' PD to the ways in which they would enact these theoretical perspectives within the classroom. In the supported phase, the PLT provided a forum for rehearsal and collaborative planning of what would occur within the classroom's curriculum, with teachers increasingly reclaiming control of how their professional practices reflected their learning. As each new planning idea was implemented into the classroom, the teachers brought their student work back to the PLT for collaborative reflection, discussion and new direction setting. In the independent enactment phase of the PLT, the teachers worked within their own classroom groupings to develop project based learning. My role during this phase was as a keen observer and an occasional consultant. It was in this final phase where I was keen to note any transformation of teacher practice, and to reflect upon the ways that their professional learning had/had not empowered them to explicitly incorporate FTP within the curriculum.

During the PLT, we met weekly over eight weeks, during which I introduced teachers to a range of futures tools and techniques. Collectively, we thought about the ways in which the tools could be implemented within the Grade 5/6 ALU. Throughout the PLT, with much support, the teachers would undertake a task which utilised the particular futures instrument we were currently focusing on, or alternatively, we would negotiate the types of resources and activities which the teachers would then introduce into their teaching spaces. In this way, the tools and techniques formed the basis of futures pedagogies in enacting FTP.

### ***Transition into PLT***

The PLT activities started with an examination of the position of futures within VELS. As discussed in Chapter 2, the positioning of FTP within VELS is implicit. As such, teachers may find it difficult to identify futures within this curriculum document and to understand the ways in which futures can be enacted within Victorian schools. This was the focus of early PLT discussions.

The Victorian Curriculum and Assessment Authority (2004) identifies four key elements in developing a curriculum for the 21st century. It is these elements which underpin the VELS documents. The first element states that learning should be knowledge based, and clearly linked to what is considered 'essential learnings'. The second encourages innovation, deep knowledge and the development of thinking, and problem based curriculum. The third claims that it is necessary to identify clear standards to be achieved by all students and higher standards for those who are more able in a particular area. The fourth element includes assessment procedures which are clearly linked to the essential learning, "which enable achievement of standards to be demonstrated and which point the way to further productive learning" (p. 7). There was much discussion around the notion of Essential Learnings:

- Esme:               What are the most ESSENTIAL things to learn?
- Jennie:             That will change from year to year, depending on what class you have.
- Mary:               That's only if you're thinking about it ... about your own kids in the classroom.
- Geri:                The Department of Education's Essential Learnings are about what children NEED to know, to live in the world that the bureaucrats are thinking about ... or wanting the world or Victoria to be ... So based on the idea that everyone needs a job, essential learning will include basic literacy and numeracy ...
- Esme:               But of course all students need literacy and numeracy.
- Mary:               But children also need to spend time learning to know each other, and to be just and fair ... that's more important ... and I can't see us spending lots of time on that, even if we want to ...
- Anessa:             So whose essential Learnings do we teach to? What OUR children need, or what ALL ... according to VELS ... children need?
- Geri:                And that will change all the time depending on the government, and the actual time in the country's life.
- (PLT1, l. 140-159)

What became clear within these early PLT sessions was that teachers were very concerned about the student clientele within the school, and each had a strong sense of wanting to provide

access and equity to resources and opportunities for these socio-economically disadvantaged students. They have been very innovative as a school in developing strategies to address the issues facing the students, and the teachers described a ‘need to make these kids’ lives better’ (Mary, PLT1, l. 27). Clearly, some of the teachers felt frustrated by issues of curriculum control and the tension between a one-size-fits-all curriculum and more boutique approaches where curriculum can be tailored to individuals based on their needs. Gonzalez, Moll and Amanti (2005) also describe this dilemma, suggesting that there are two key approaches to building students’ funds of knowledge. The first is to focus on the knowledge students bring to school and use it as a foundation for learning. The alternative approach is to emphasise what students lack in terms of knowledge sanctioned by schools. These teachers believed that the curriculum documents currently sanctioning classroom learning were not responding to the needs of their particular students. The teachers, arising from conversations regarding the notion of Essential Learnings, agreed that ‘if all learning is for the future, then the future has to be an essential learning – isn’t that what we have been learning about?’ (Geri, PLT1, l. 16-18).

Individually, the teachers interrogated VELs for explicit places where futures education was mentioned. In ‘googling futures’ Anessa found four mentions in the introductory blurb of the document (PLT1, l. 32) but no further mentions beyond. This further represents the implicit futures I referred to in Chapter 2. Penny identified a ‘heap of ways I could do futures through science and technology ... it’s not here, but I know I can’ (PLT1, l. 36). For Geri, ‘the future’s not very obvious in VELs, is it? I should have known that because I’ve never taught it before’ (PLT1, l. 40-43). Jennie was unsure, and would ask for clarification from others: ‘Do you think globalization is the same as futures?’ (PLT1, l. 61). Mary and Anessa remained very quiet during these discussions. When asked if they were clear on what we were doing, Mary responded:

Yes, I know what you want me to do. I just don’t know where to find it. I’ve looked but it’s just not here. If it’s not here, does that mean that we don’t do it? I mean, I know it’s important now because we are learning about it, but the government must know about it, and why haven’t they put it in? (PLT1, 76-81).

Mary’s comments clearly demonstrated the strong directions which teachers seek from curriculum documents. In further exploring her comments, she perceived that what was important to teach was documented. This value of curriculum learning was reinforced by the

testing and standards associated with learning within any discipline. For the other teachers, they were unable to explicitly find futures within VELs, but each of them was looking for a vehicle in which futures learning could be developed. In general, the teachers demonstrated surprise at the lack of FTP within the documents.

### ***Identifying and accessing resources***

In coming to realise the lack of documental direction provided by the formal written curriculum and support which was provided by VELs, we thought about the ways in which futures learning would be implemented in the ALU. Considering the Reggio Emilia philosophy which strongly influenced teacher practices in facilitating learning (see Chapter 3), we began our sessions through immersion in futures texts. This generated conversations about relevant and accessible resources which might be used for classroom practice. We brainstormed a long list of media which reflected different aspects of the future. The teachers were trying to identify ‘resources which can be drawn upon throughout our futures projects’ (Esme, PLT1, l. 265).

- Mary: I’m thinking there’s a great series called *Sliders*<sup>47</sup> on the TV where they move forward and back in time which was excellent.
- Jennie: So there’s another series that you can actually get, I think the ABC, *The Girl from the Future*.<sup>48</sup>
- Penny:: Is that the blue girl?
- Me: No, that’s the girl from *Ocean Girl*.<sup>49</sup>
- Mary: No, *Ocean Girl* is the blue girl. The other girl is just from the future ...  
(PLT1, l. 282-290)

The teachers were surprised by the list of television shows and movies which they were able to name which had explicit futures ideas. Some of these shows included *The Jetsons* (Barbera & Hanna, 1962-1963/1985-1987), *Buck Rogers in the 25th Century* (Bender et al., 1979-1981),

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<sup>47</sup> Torme and Weis (1995)

<sup>48</sup> In this Jennie referred to *The Girl from Tomorrow* (Thompson & Shirrefs, 1991).

<sup>49</sup> Shiff (1994).

*Futurama* (Groening & Cohen, 1999-2003), *The Legend of King Arthur* (Bennett, 1987-1988), *Beyond 2000* (Carson, John-Story, Summons & Travers, 1985-1995, 1999), *Catalyst* (Willis, 2001), *Meet the Robinsons* (Anderson, 2007), *Jimmy Neutron: Boy Genius* (Davis, 2001), *Metropolis* (Lang, 1927), *The Matrix* (Wachowski & Wachowski, 1999), *Mad Max* (Miller, 1979), *Modern Times* (Chaplin, 1936), *Blade Runner* (Scott, 1982), *Barbarella* (Vadim, 1968), *Artificial Intelligence: AI* (Spielberg, 2001), *I, Robot* (Proyas, 2004), *The Millennium Man* (May, 1999), *A Clockwork Orange* (Kubrick, 1971), *The Island* (Bay, 2005) and *A Space Odyssey* (Kubrick, 1968).

In many instances, teachers also suggested science-fiction shows such as *Star Trek* (Roddenberry, 1966) and fantasy realms such as *H.R. PufnStuff* (Krofft & Krofft, 1969). There was much discussion about how they determined whether something was futuristic or fantastic.

Geri: I don't think *Star Trek* is a futures text. *Star Trek* is about the fantasy or reality of space travel and other living beings beyond what we currently know.

Jennie: But, it's not happening now and it might happen in the future.

Geri: But they don't pretend it's in the future like *Buck Rogers*. The first *Star Trek* was running in the same time that it was showing.

Mary: So, are you saying that *Buck Rogers* is the only one out of our list?

Penny: No, she's making the point about knowing whether it's meant to be the future, or if you just think it's the future because it's different from how we live.

(PLT1, l. 457-469)

These types of discussion were duplicated in later PLT activities. The dilemma of future or fantasy would become particularly apparent during resource selection or discussion. As a frame for selecting futures based resources and materials, we used Geri's criteria of whether it was intended as futures text. If this was unclear, the resource was not utilised. Other dilemmas also became apparent in the use of futures texts within teacher planning and classroom activities.

As we were trying to identify resources which would enable the immersion of students into explicit futures thinking, we narrowed the field to include only shows which had appropriate ratings. This provided challenges in itself, as schools are only able to present G or general rated to students without parents' explicit permission. One of our discoveries was that films and television shows which include images of the future are rated as PG, or with parent guidance, as "they may contain content that children find confusing or upsetting" (Classification Board and Classification Review Board, 2005). In a query to the Attorney General's Office – Classification Policy Branch, I asked why such films might be considered 'confusing or upsetting'. The reply was simply, "Well, the future is confusing ... and might be quite upsetting ... even to adults".

The teachers were concerned about seeking parents' permissions as 'it can make parents more sensitive to what we are doing ... when there is no need to be worried' (Esme, PLT1, l. 623-624). Similarly, Anessa was concerned that 'once the parents get involved, everything becomes harder. I think that some of them just say what we do isn't in their culture just so that we teach more like they had at home' (PLT1, l. 656-659). For Penny, 'if the government has a problem with them seeing the films, maybe we should too' (PLT1, l. 673-674). Amongst themselves, the teachers sifted through their list of futures texts for the ones 'most friendly to our students and families' (Esme, PLT1, l. 685). After several discussions we sought the parents' permissions to view and study images from *Futurama*, *The Jetsons*, *Beyond 2000* and *Quantum*.

The teachers were surprised by the list of media which they had generated as resources for the students' futures immersion. Jennie wondered whether a similar list of texts could be identified amongst children's literature which was appropriate for this age group.

Me: I'm certainly aware of a number of texts which are great for serial reading. Isobelle Carmody writes some really fantastic stuff which needs to be teacher supported, at this age. *Obernetwyn*<sup>50</sup> and *The Farseekers*<sup>51</sup> are about a different way of living in the future ... rather than being a society all working together, the world is broken into specialist kind of cultures.

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<sup>50</sup> Carmody (1987).

<sup>51</sup> Carmody (1990).

- Jennie: What about *The Giver*<sup>52</sup> by Lois Lowry?
- Anessa: *Lionboy*<sup>53</sup> ... it's about the future from animal perspectives ...  
Actually, there's probably lots about natural futures.
- Geri: What about the book that goes with the series on BBC? *The Future is Wild*?
- Mary: I can't believe that you know all these books ... I can't think of any future books ... Well, I might know some, but I've obviously never taken them seriously.  
(PLT1, l. 745-760)

Mary was clearly bewildered by the number of texts which had been identified. In saying that she couldn't think of any future books, she later reflected, she had simply not thought about it prior to our ongoing PD and PLT (TIMB, l. 39-42). She also remarked that during many of these sessions, it was:

difficult in my thinking to work out what was future and what was fantasy ... especially in these books. I mean, is a quest the future, just because it is unlikely to happen, or because there is magic? (TIMB, l. 50-53).

As the PLT developed, similar conversations opened up new negotiations and clarifications for the teachers' thinking and understandings in learning about futures thinking. With each new discussion, new frames for thinking about multiple futures emerged.

Resultant from this listing of resources, a 'tub of texts' ranging from reference and picture books to junior novels were collected and organised within the learning space. The teachers took some time to discuss the images and ideas about the future that the books represented. What arose in these discussions were a range of futures ideas which were described or intimated from texts. For example, through *Obernewtyn* (Carmody, 1987) we explored the image of a society in which people were streamed, and lived, within interest and ability groups, with each of these groups having a different responsibility in the way they contributed to the advancement and cohesion of the bigger community. Whilst initially the teachers responded that this scenario was very unlikely, and also not preferable as 'it would be very boring to live

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<sup>52</sup> Lowry (1993).

<sup>53</sup> Corder (2004).

with others who are all the same’ (Mary, PLT2, l. 238), through further investigation, they were also able to identify the strengths of such a scenario in developing deeper specialist knowledge and a ‘community of likeminded’ (Geri, PLT2, l. 262). The teachers employed tools we had used in the PD sessions in order to consider how likely such a scenario would be, and how it may occur, based on their current understandings of the world.

### ***Supported enactment of professional learning***

During the PLT sessions, we participated in a professional learning cycle which was reflective of the action research spiral described in Chapter 4. It also provided a scaffold for the teachers’ increasing futures consciousness and in supporting the ways in which they took futures to the classroom’ (Penny, TIPK, l. 77). The cycle consisted of three main phases:

- Teacher rehearsal and preparation
- Classroom implementation
- Reflection and evaluation of classroom implementation.

During the teacher rehearsal and preparation phase, the PLT developed content which could be used within the classroom to develop student learning. In most instances, the teachers learned a new futures tool or considered resources which would challenge and extend student understandings. At the conclusion of these sessions, the teachers planned the ways in which the futures ideas would be implemented within the classroom.

In the classroom implementation phase, the teachers applied what they had learned throughout the PD and PLT sessions. Through their interactions with students, they developed new insights and possibilities for curriculum directions with an outlook to ‘emerging ideas from the students which will provide the basis for project based learning’ (Esme, PLT2, l. 338). What occurred within the classroom interactions was brought back to the PLT meeting to reflect and evaluate during the third phase. In this reflection and evaluation phase, the teachers used student work samples and digital recordings of discussions to reflect upon their own professional learning and practices. Student data also enabled them to identify areas of interest



for the students as well as to generate new directions of learning. In the following section, I will describe a number of these professional learning cycles.

### ***Taking images of the future to the classroom***

From the various resources lists in the previous sessions, and with some time to consider some of the ideas from each, the teachers decided to immerse students in a range of futures texts. Similar to the experiences they had had as a professional learning team, they planned for early experiences which encouraged the students to engage with futures texts. In the first encounters, the students were asked to describe the future which was included within the text and later to begin to analyse the images of the futures which were portrayed within the films and books. As the children began to classify the images of the future, they also compared and contrasted these images. These activities were implemented over one week.

What the teachers brought back to the subsequent professional learning meeting were reflections about how the students interacted with futures perspectives. The teachers were genuinely curious and surprised about how the students perceived their personal and global futures. They noticed that the students ‘really enjoyed watching futures stuff like *The Jetsons*, but didn’t really think about what was being said about their futures’ (Jennie, PLT2, l. 257). The teachers also commented that it wasn’t until the students compared the different images of the future that they began to identify differences in the ways that people thought about the future. In one activity, the students were asked to identify which type of future was most likely, based upon their own views of the future. The teachers spent considerable time discussing the ways that students articulated their views.

Mary: I couldn’t believe the way that the kids thought so many different things.

Jennie: But, they didn’t ... They were all consumed by the idea of global warming and that the earth wouldn’t be around as the environment implodes.

Mary: That wasn’t true with my kids ... Well, they were concerned about

the environment, but they were more taken with the thought of them in the different futures. It was as if they saw their own lives quite differently, depending on what kind of future we were talking about.

Penny: Mine were more into technology and discoveries, and they saw the *Futurama* kind of future as what would happen to the world

Anessa: Mine were a bit the same ... lots of technology, especially computers and communications technologies.

Geri: The kids in the 'little house' were more sciencey, but basically thought all of the different types of futures could happen ... Most of them knew lots of different television futures.

Mary: The way my kids spoke made me think a lot more about the different types of future. [Child's name] especially made some really good arguments about why families and houses would change in the future. They are some of the things I assumed would always stay the same.

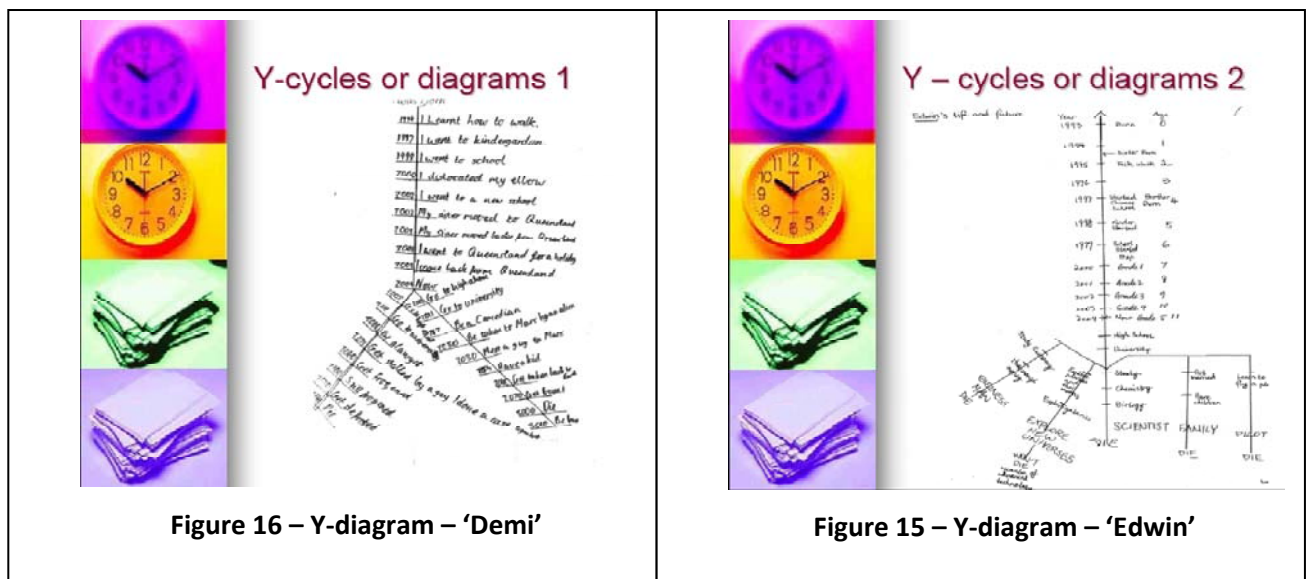
(PLT2, I. 477-498)

The teachers were very interested in Mary's observation that the child's personal future view changed, in relation to the bigger and more global future scenario. Whereas in the teachers' original discussion, different images of the future resulted in listing the possibilities, in this reflection upon what the children had described a new understanding was emerging which connected the personal and communal views of the future. At this point, in planning for further and deeper futures immersion and thinking, I introduced the teachers to another tool which they would introduce to the classroom. I call this tool a futures Y-diagram, or in some instances, a multi-pronged futures diagram.

### ***The Y-diagram***

During the PLT meetings, we spent significant time rehearsing and understanding specific futures tools and skills. The Y-diagram was the first tool which the teachers implemented in the classroom. In this section, there is much significant data. The introduction of the Y-diagram to this PLT provides a shift in the teachers' thinking about futures in their classroom. This,

retrospectively, provided a ‘turning point for us to understand exactly what we could do, just because now we had a way of talking and thinking about the future’ (Jennie, TIJV, I. 67-71).



The Y Diagram (see Figure 16 and Figure 15) is an effective means of considering different approaches to thinking about a personal or shared future. The bifurcation of the Y indicates the present; the two (or more) prongs indicate possible futures, and the singular line represents the events which have already occurred. A personal Y-diagram represents the personal futures view of an individual. Their personal history is reflected on the single line, and marks out significant events which have occurred, and contributed to the person they exist as today. The nexus point represents the present moment, and this represents their shift in thinking about the past, to what might occur in a future. In the first instance, I ask students, and in this case the teachers, to consider two possible future paths in their personal journey.

In this PLT, we commenced by slowly exploring two Y-diagrams which had been constructed by two 10 year old children in another school (Figure 16 and Figure 15). The first was drawn by a female child, called Demi (Figure 16).<sup>54</sup> Her life begins with birth, and she marks out the subsequent years between birth and her current moment with milestones such as learning to walk, going to preschool and then beginning her formal primary years of education. Demi’s past also marks a significant childhood trauma in the dislocation of her elbow. From this event, her representation shifts from an educative focus to a very personal recall of events in her life,

<sup>54</sup> Demi is a derivation of a child’s name. She had previously participated in futures activities within another school context.

much of which was done verbally through the ‘conferencing process’. Demi’s entry into the new school was forced through the separation of her parents. The first trip to Queensland occurred when her older sister ran away in response to the changing structure of the family. Demi was relieved when her parents were able to convince her sibling to return. The second trip to Queensland represents a holiday in which Demi, a parent and her sister embarked.

I conveyed to the teachers within the PLT meeting how Demi had felt assuaged at the thought that she could ‘redraw’ her future, which would look quite different to her past. In their engagement with, and collaborative deconstruction of, this futures tool, teachers are further developing their futures capacities. Moreover, with a specific study of futures tools as they have been implemented into a student’s learning, they are developing their futures pedagogies.

Me: Demi was a student who has presented at school with a number of challenging behaviours. She was very bright, but could often be quite difficult with peers and teachers. She often demonstrated frustration, and we talked about the Y-diagram as a way in which we can think about making different choices.

Mary: We have a number of students who could use some help ...

Me: Demi was very excited at the thought of writing the rest of her life ... focusing on the future, once she could move from the past.

Esme: Don’t the students find it hard, just to start writing their future?

Me: Well, in this instance, Demi was looking forward to the fact that after primary school, she would go to secondary school ...

Penny: And then, you could just get the students to think about the other things that might happen as you get older ...

Anessa: Like part-time jobs, earning money ...

Mary: When you think about it like that, the future’s probably not that hard.

(PLT3, l. 42-59)

Demi developed two separate possible future paths in her first attempt, over a number of lessons. In both, she attends high school and then follows on to tertiary education. In the left hand future, Demi is going to become a lawyer, and interestingly ‘will be stalked by a guy she

does a case against'. The teachers were very interested in the reasons why Demi may have thought this would occur, and lamented that it would be 'good to have the times and opportunities to really talk and listen to the students' (Mary, PLT3, l. 128). Beyond her legal profession, Demi is 'frozen', then 'defrosted', and ultimately dies. Upon reflection, there is much about the world that Demi is trying to make sense of, and as a PLT we discuss the ways in which she has reflected these uncertainties, or limited understandings, which present new opportunities for learning in the classroom.

The university course in Demi's alternate future is included for very different reasons. She had explained during our previous sessions that she would go to university to become a comedienne for two reasons. The first was because 'she would have something to do if she wasn't all that funny'. The second reason was because her father had informed her that 'funny people are at university'. After becoming a comedienne, Demi 'meets a guy in Mars' and has a child. As a PLT, we discussed the ways in which Demi's shifting her known existence into a different setting, such as Mars, is a good example of used futures. The teachers thought about the ways in which they too assumed that many of the events in their lives would continue unchanged, regardless of whatever changes were occurring externally. Further, they reconnected with a previous idea we had encountered that relocating the present in space does not necessarily equate to futures. One teacher commented, 'you can see so clearly how strongly we are influenced by media ... and why we just assume that the future will happen' (Anessa, PLT3, l. 344-346).

The final aspect of Demi's Y-diagram that we considered was the idea that, on re-entering the Earth's atmosphere upon her return from Mars, her spacecraft would burn. The teachers theorised about why Demi may have thought this was the case. Esme was quite dismissive, seeing it as 'more evidence of too much television ... probably *Star Trek* or something' (PLT3, l. 362-363). Penny, however, could clearly articulate why re-entry causes danger to space crafts from physics and resources (fuel) perspectives. Regardless of where Demi had gleaned this idea, the teachers were impressed that she had incorporated it into her futures timeline. They all agreed that each part of her Y-diagram provided rich opportunities for deep learning across a range of disciplinary perspectives. Furthermore, the deconstruction of this futures tool had

indicated some new directions for learning in regard to Demi and these teachers' students. It provided yet another way of 'listening to these students' (Esme, PLT3, l. 396).

- Geri: But what would you do if a student said they thought they would do something in their future you just know they'll never be able to do?
- Esme: When a child's 10, there are many things which can be done to help make something more achievable.
- Jennie: ... especially if the student is focused on making that happen, and is motivated to make the effort ... imagine making the effort from a young age instead of waiting until Year 11 and 12.
- Mary: They still need to be children ... but it would also help them to see why their schooling is relevant ... I need to focus now because this will really help me to ...  
(PLT3, l. 445-457)

Even though the teachers are engaging with futures broadly, as highlighted by Jennie their thinking comes back to 'school' futures and the idea of preparing a student for work etc. Similarly of note is Geri's concern about students aspiring to do more than a teacher believes them to be capable of achieving. In some regards this idea was frightening as it highlights the power education yields as a gatekeeper of who can do what as a result of academic calibre. This is another example of what Inayatullah, Bussey and Milojevic (2006) describe as colonising futures. This notion of colonising futures through education is also apparent in the value which is attributed through cultural expectations. This is highlighted in the other Y-diagram examined.

This Y-diagram (see Figure 15) was also considered by the teachers. As a group we looked for similarities and differences between that of Edwin, and the previous diagram of Demi. One of the key differences we noted was the way in which Edwin's many lines are focused on one particular aspect of life. This is strongly influenced by his cultural upbringing and the value his family place on a strong traditional education, which will result in his becoming a successful adult as reflected in a high status career. For example, in one path, Edwin is a businessman, and in another he is a scientist. He creates a separate path for his family life, and seems unable to

integrate different facets of his life together. Another point which was discussed is the single line which moves from past through to the future. It is clear within the diagram that he has added the other lines later. This occurred as Edwin originally completed the task very quickly, stating that he already knew what he would do as his future had been negotiated between his parents and himself.

A key similarity between the two Y-diagrams of Edwin and Demi, and subsequently those developed by the teachers, is the notion of technology for the sake of technologies. Both Edwin and Demi highlight that at some time in the future, scientific discovery will allow people to live extended lives or even to resuscitate someone who has died. In Demi's Y-diagram, she referred to this as being reborn, and in Edwin's, he would not die as a result of advanced technology. What occurred thereafter however was also similar with the teachers. Given that life was longer or re-generated, no-one was sure of what this meant in terms of what could occur. For Demi and some teachers, they simply died again as they did not know what to do with their new lives. In the case of Edwin and one of the teachers, they considered it enough to simply acknowledge the existence of the technology.

Arising from the discussions in this space, the teachers then developed their personal Y-diagrams. Having walked through the exemplars, they set about this task confidently, and were very enthusiastic to share their thoughts and to consider the ideas of others. The rich conversation which occurred reflected a high level of engagement within futures learning. Figure 17 highlights an attempt by the one of the teachers to construct her own Y-diagram, prior to introducing this tool into the learning space. Mary described this process as one 'which really makes you think about what you're doing' (PLT3, l. 522).

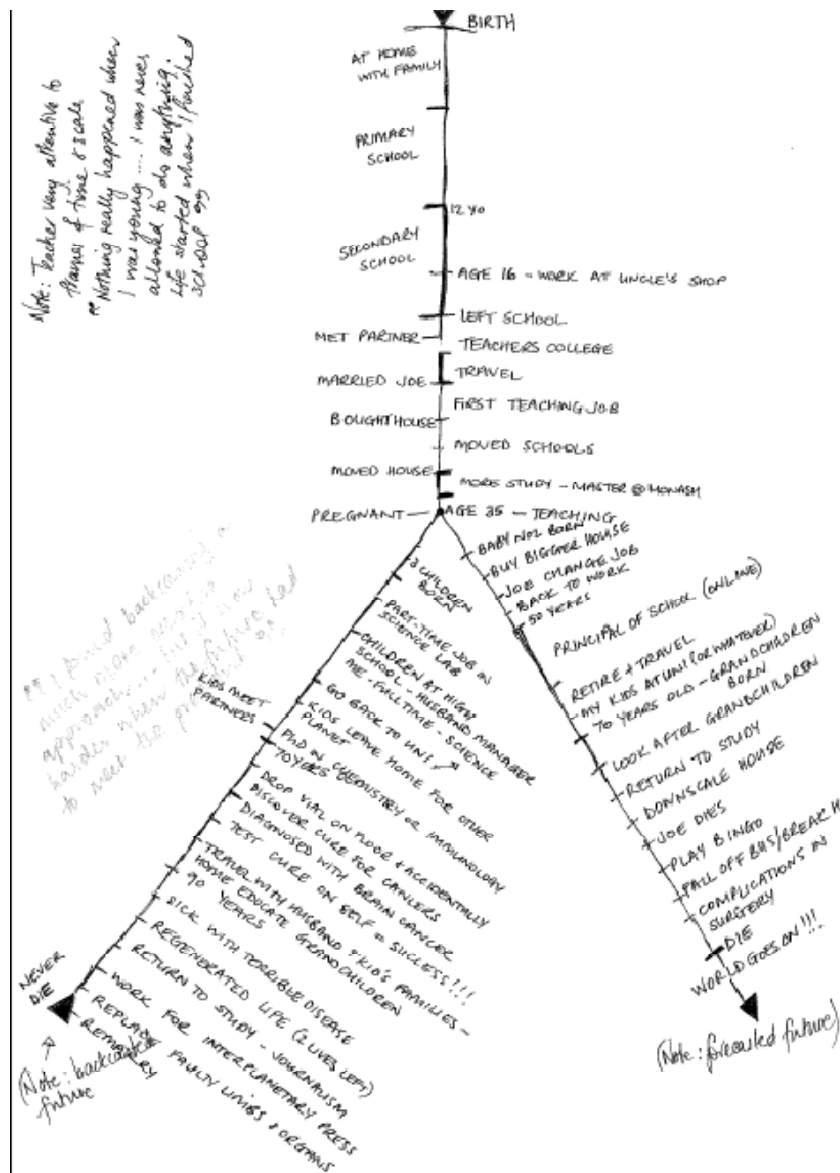


Figure 17 – A teacher's Y-diagram

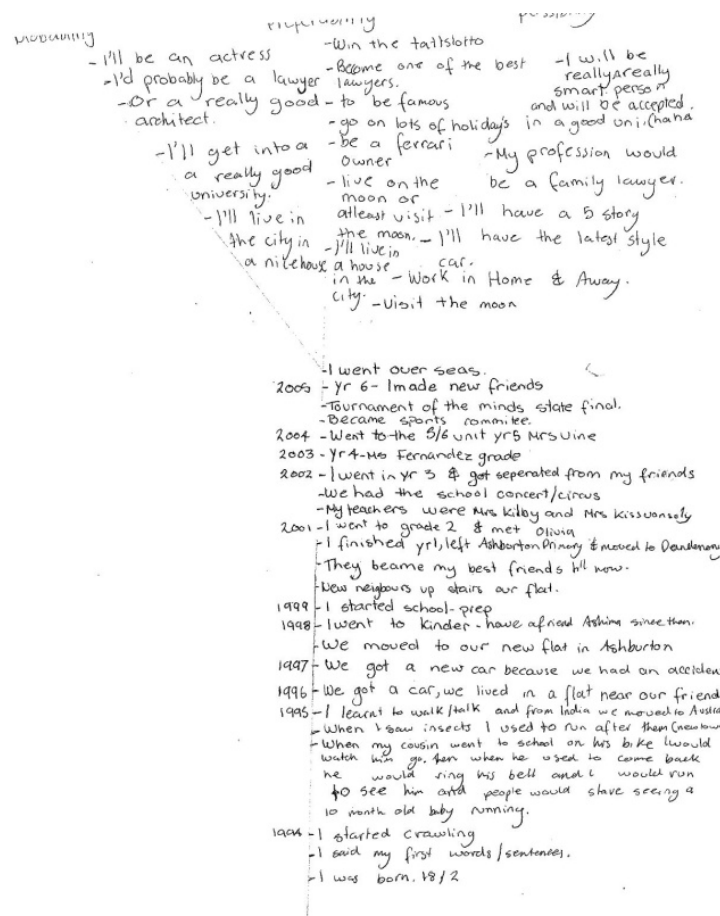
When reflecting on her strategy for completing the Y-diagram, Penny said that on one future, she ‘had just kept my life going as it will now if I don’t really think about it’, whereas on the other she had ‘been creative and tried to fit in all of her dreams as well’ (PLT3, l. 915-918). The other teachers described similar approaches. Interestingly, Penny preferred her more creative future, and some weeks later was exploring ways in which she might do further study through correspondence in order to further her science interest: ‘I’ve always regretted not doing more science which I loved, but I’d never really thought about going down that path again, to further my life. Who knows? Maybe I could discover something’ (PLT3, l. 988-991). The Y-diagram had brought Penny’s futures perspectives into a more focused gaze with possibilities



to enact this preferable future. In this way, she was ‘feeling quite empowered ... Imagine what this could do for some of our children’ (PLT3, l.1012-1013).

**Taking Y-diagrams to the classroom (and bringing them back for shared reflection)**

The teachers introduced the futures Y-diagrams into the classroom immediately after our PLT. They returned to the professional learning space very enthusiastic about sharing their insights and discussing what their students had created (see Figure 18).



**Figure 18 – Student Y-diagram: personal**

As in our sessions, the teachers had provided the students with strategies that might be used in developing their alternate futures, including backcasting and forecasting. They reported that the students chatted excitedly as they worked, and eagerly compared their projections. And, just as the teachers had challenged each others’ ideas, the children continually questioned each other, and imagined their peer undertaking the lives outlined. Further, just as the teachers

had talked about having one future which followed the patterns that their lives were currently following, and having another more ‘creative’ future, the students also used this strategy in the first instance. However, amongst the positive engagement, the teachers returned with some queries and clarifications and had thought of ways of extending the use of the Y-diagrams.

As in earlier PD sessions, the teachers were very sensitive to all of the children’s family backgrounds and other cultural contexts, and ‘how this futures thinking might really upset them’. They were unclear on why this might be the case, but drew upon earlier experiences where the parents had approached the school ‘when what they were teaching in the classroom wasn’t literacy, maths, science or had a basic subject name’. In some regards, as highlighted in the previous chapter, their hypersensitivities to the perceived and anticipated ‘issues of the parents’ (Mary, PLT4, l. 351) was an obstacle to the enactment of futures perspectives within curriculum. This was also interesting given the open and inclusive nature of Reggio Emilia philosophies as described in Chapter 3.

- Anessa:           What do you do with sensitive parents in terms of sharing this information?<sup>55</sup>
- Mary:             Yeah. Cos [child] will be an issue.
- Me:                For the parents, or the student?
- Mary:             Both. Because I can see some students, where if they are writing down some of this information, that they are going to upset the families.
- Esme:             I don’t think [child] will be a problem, really.
- Mary:             I remember doing a prediction thing with him just on the weather and he said ‘You’re not allowed to look at that bit’ and so he didn’t do the activities.
- Me:                Is that because of religion or something?
- Mary:             Dunno ... he’s just not allowed to do this stuff.
- Anessa:           I was more thinking about things like if children wrote down that their parents were divorced.
- (PLT4, l. 362-377)

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<sup>55</sup> The ‘sensitive information’ in this case was the students talking about their own lives.

In regard to some of their students, the teachers were ‘shocked’ by some of the futures ideas about their own lives (Anessa, PLT4, l. 399). Mostly what surprised them was ‘the amount of insight’ the students had into the world around them, and how they transferred what they saw of adults now, onto their own lives as adults (Jennie, PLT4, l. 415). In general, the teachers felt disappointed and frustrated that the students did not envisage futures ‘which they were capable of’ (Geri, PLT4, l. 422).

Mary:                    There were some kids who didn’t even dream big in their future ... Like one of my students was going to prison in one future, or would work in a factory and drink beer in the other. He has the potential to do something really good, but if he doesn’t even think he can now, what hope has he got?

Penny::                I had some similar ones. I asked [child] why she was not going to university and becoming a doctor or scientist ... She’s so clever. She told me that she couldn’t because she would have to take care of the family like her mum does.

Geri:                    I thought they would all say wildly unrealistic things about what would happen in the future, but really, according to them, their futures are pretty bleak.

Esme:                    Is this stuff we need to address in the classroom?  
(PLT4, l. 428-441)

In seeking this clarification about where this thinking should take place, Esme raised many points about why schools are such important sites within a community, and how knowing the ways in which children conceived themselves gave teachers important information about what was relevant to be taught, and to whom. The other teachers made similar comments, suggesting that schools play an important role in contributing to the ways in which students think about themselves and the possibilities for their futures:

If we teach them maths and English, then they get the idea that that’s what they need to know for their future ... and if they’re not good at those things, then they get the idea that they won’t be good in their future (Penny, PLT4, l. 472-475).

The teachers collectively reflected upon the ways in which they had ‘not given thought’ to ‘the future’ in teaching students, previously. This further demonstrates the passive ways in which teachers receive curriculum documents. Through this PLT, they were able to re-examine their curriculum practices through a futures perspectives. They were deeply reflective and silent for some time, as though they were grappling with the ideas raised by Penny.

In regard to the actual structure of the Y-diagram, the teachers were curious about different ways the same futures explorations could be presented.

- Geri: Do you get them to do that particular shaped diagram or could you give them a broader organiser, like a mind map?
- Anessa: One of the things is a broader box shape, because they’d be inclined to write more things.
- Jennie: I gave mine really big pieces of paper to start with, like Deb did with us, and told them that this was only a draft which we could refine later on. The big pieces of paper helped them to organise their thinking, and grey lead pencils and rubbers helped to edit.
- Me: Just like you would conference a piece of writing, you would conference something like this. You would actually talk to them about it and you would help them fill out a little bit. You might actually get them to design their own way.
- Mary: I had one student who wanted to draw it as a road map ... I should have let him  
(PLT4, I. 567-583)

It was interesting to hear the teachers’ tensions about the variety of ways students had thought about presenting their work. In this implementation phase, they had forced the Y-diagram on their students, when indeed the Reggio philosophy of the school promotes the hundred languages of children (see Chapter 3) whereby there are multiple ways of making learning visible. This is an example of the ways in which teachers in this school straddle innovative and progressive pedagogies, whilst at the same time are bound by rigid traditionalism promoted within curriculum documents.

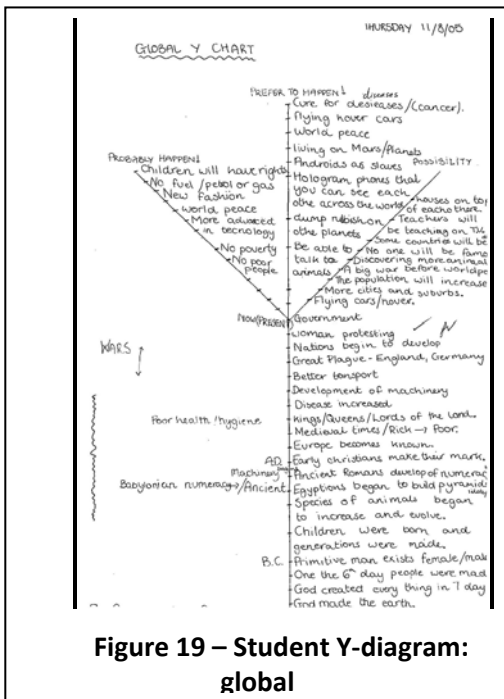


Figure 19 – Student Y-diagram: global

Another way in which the teachers utilised the Y-diagram, arising from our professional learning sessions, was to create a global Y-diagram as a classroom activity. In this task, the students identified and charted ‘significant events in the world’s history’ (Geri, PLT5, l. 213). The students were encouraged to draw upon a variety of texts to inform their historical perspective, and then to think about how some of those events were linked to the way we lived today and to forecast some scenarios for the future.

One of the main challenges the teachers reported in creating the global Y-diagrams was ‘dealing with the differences’ of the students in the classroom (Anessa, PLT5, l. 215). The teachers felt concerned that, when the children shared their work with their peers, in many instances their representation of history was quite different, depending upon their cultural and spiritual contexts. Whereas children from Christian and predominantly Anglo backgrounds referred to events such as “God creates the earth or Jesus is born” (Jennie, PLT5, l. 321), a contrary perspective was that of Darwinism and big bang theory. The concern arose as the children discussed their varying beliefs, and then began to question their own position. In some instances, what resulted was students’ inclusion of both viewpoints (see Figure 19). Once again, the teachers felt ‘very worried about what the parents will say ... some of them are very sensitive’ (Anessa, PLT5, l. 328-329).

As we collectively pored over a large sample of these global Y-diagrams, the teachers reflected upon common futures interests which emerged. The students were very interested in natural and animal futures, and foresaw capacities such as communication with animals, and new breeds of animals, as well as different habitats and ways of interacting with animals beyond the zoo. They identified science and technology as ways in which new fuels ‘and energies would be invented to stop pollution and make travel cheaper and easier’ (Penny, PLT5, 365-366). Most talked of there being ‘no poor people in the world’ and to varying degrees the types of housing and education all people will access (Mary, PLT5, 433-432). Similarly, all children were ‘very

hopeful that diseases like cancer would be cured’ (Anessa, PLT5, l. 500) and that people would live ‘for as long as they wanted’ (Geri, PLT5, l. 522). Whilst many preferred peaceful futures, most thought that ‘there has to be another big war around the world to make people sort out their differences’ (Jennie, PLT5, 611-612).

Reflecting upon the students’ global Y-diagrams, the teachers were surprised by the depth of the responses. Mary ‘confessed’ that she thought the ‘children would just talk about kid things, like advances in games, or in fantasy type things’ (PLT5, l. 727-728). The others concurred that they hadn’t expected the students to raise such important and current issues in the world: ‘We teach this stuff all the time, but really you just think that the students are answering questions and not really learning anything’ (Penny, PLT5, l. 778-780). The teachers clearly underestimated the impact of classroom learning within these children’s understandings of the world. They agreed that ‘this futures stuff was starting to bring different parts of what the kids learned together’ (Geri, PLT5, l. 813-814).

Furthermore, the teachers’ were surprised by their own and their students’ capacities to ‘learn about the futures’. Jennie commented that at the outset of this project, she could not see how ‘the future could be studied’, but since she had started using the tools, she ‘noticed the future everywhere’ (PLT5, l. 836-838). The others concurred, and said that ‘it was becoming much more obvious how the future is connected to the past and present’ (Esme, PLT5, l. 946-947). This increased temporal consciousness was changing the dynamics of their classroom teaching. They reported at early stages in enacting futures perspectives in the classroom that ‘the mood in the classroom is changing. The students really love this stuff’ (Mary, PLT5, 1251).

### ***Temporal scanning***

As stated in earlier chapters, it is one of my contentions that in order to address temporal bias within an educational setting, teachers and students need to become more temporally mobile. In developing this temporal mobility, I refer to a person’s ability to consciously shift their thinking from one time frame to another. An important futures tool which helps to develop such a capacity is that of temporal scanning. In many ways, this tool/skill had been well

scaffolded in the teacher learning by activities which included the different time perspectives within. The teachers were enthusiastic in their approach to this activity, and engaged in both past, present and futures matrices (Figure 20) and matrices of comparison (Figure 21). The two main ideas which were investigated here were the ideas of continuity and change.

Using the matrices of comparison, the teachers grappled with the differences between continuity and change, noting the subtleties of change. It was interesting to see the developments in their discussion. At the beginning of the discussion, there was the assumption that most things continue, and by the end, the teachers concurred that in fact it was quite the opposite. As previously, they were keen to find ways in which they shared ‘a criteria to talk with the children about these things’ (Esme, PLT6, l. 273). In particular, the teachers were interested in ‘how much of a change means a change?’ (Mary, PLT6, l. 339).

**Matrices of comparison**

Things that are changing			
In my life	Locally	Nationally	In the world

Things that stay the same			
In my life	Locally	Nationally	In the world

**Figure 20 – Professional learning and planning – Slide 7**

- Mary: Everything continues in one way or another, doesn't it?
- Me: Something which continues is something that repeats over and over again without any change. The seasons continue. They begin on the same date of each year, and exhibit the same characteristics.
- Jennie: Schools continue. They begin at the same time every day, and end every day
- Mary: And the curriculum doesn't really change ... The most

important things are English and Maths, just as they were a hundred years ago.

[Teachers laugh, followed by much chatter about what continues]

Anessa: It's quite interesting, besides the seasons and education, there's not a lot of things that continue for everyone. Most things in the world are changing, if only a little bit ...

(PLT6, l. 434-461)

In applying the past, present, future matrix (see Figure 21), the teachers considered individual occurrences throughout different time frames. In the example I provided, we explored the way in which clothes washing had changed over time. Whilst we recognised the use of washing machines and either clothes lines or dryers as the technology which was current, we also investigated the technologies which had preceded this. The teachers reflected upon the technologies which had been employed in their own lifetimes, and recounted the use of 'twin-tubs', where the washing cycles were differentiated from the spin cycle, in which maximum water was removed from clothing through fast rotation. One teacher recounted her grandmother boiling coppers, and manually stirring clothes in the boiled water which contained grated soap flakes. Prior to this, she thought that people used 'washboards'. Another recalled hearing stories of women cleaning clothes by beating them with rocks along river banks, or scrubbing them with abrasive soaps.

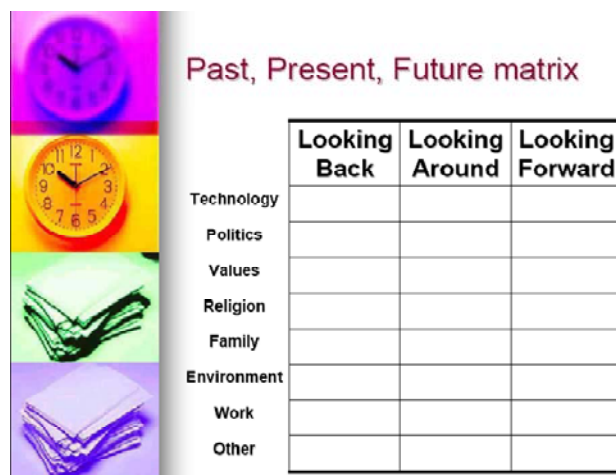


Figure 21 – Professional learning and planning – Slide 6



The teachers then moved their thinking back to consider current or present practices. They identified the highly computerised machines which in some instances also incorporated a ‘smart-dry’ facility. Such a machine integrated washing and drying features and often had the capacity to be ‘pre-programmed’ for the convenience of the user. Other discussions considered features which allowed water to be reused. In general, the teachers still favoured the use of a washing machine and clothes line to dry their clothes.

In thinking about the possibilities for washing clothes in the future, the teachers listed a number of alternatives. In the first scenario, they wondered whether there might be some type of ‘laser or microwave’ technology, where clothes could be ‘zapped’ before they were put away. Another scenario looked at the use of disposable clothes, and another considered a naked society. Interestingly, in this conversation, the most radical thought was that laundry practices might remain unchanged.

The teachers then approached the task of completing the futures matrices. Each teacher commenced work individually, through their own choice; however, as they concentrated their thoughts on any particular aspect of this temporal scanning, they would initiate discussion with their colleagues to ‘tease out exactly what we are thinking’. Then, as they clarified their own thoughts and were influenced by the ideas of others, the teachers would again return to their individual work. They were very keen to share their ideas about the future and understandings about the past, but were even more keen to hear what others had written. The teachers imagined that this would be ‘a challenging but interesting task to take into the classroom’ (Esme, PLT6, l. 766).

***Taking temporal scanning tools into the classroom (and bringing them back for shared reflection)***

The teachers worked with their groups of students in constructing their futures matrices, in the same ways in which we had worked as a PLT. Each responded positively about the ways in which the students had engaged with the task, and also with the content covered.

- Jennie: The kids were so much better at this than we were.
- Mary: They knew much more than I had thought they would. For example, I didn't think many of them would even think about what religion would have been like in the past ... and some of the religions of the future were fantastic.
- Anessa: I thought it was interesting the way they connected their ideas. There were really good discussions, and the kids didn't want to stop.
- Geri: A lot of my kids wanted to do the research for the past, especially when they weren't sure.
- Mary: They raised a lot of questions that I couldn't answer.  
(PLT6, 813-825)

Emerging from these discussions, two ideas were clearly present. The teachers had low expectations of the ways in which they had anticipated student participation within futures activities. They were surprised by the ways students were able to provide rich and 'fantastic' futures thinking. In fact, the second idea which is apparent through this discussion is the first suggestion that the students' abilities to exercise futures thinking were possibly superior to the abilities of the teachers in this instance. This is the idea which exposed Mary's traditional perception of her role as the teacher, and the limitations of her practice in not being able to respond to the queries of her students.

The teachers discussed one of the student's matrices (see Figure 22) in great detail. It became, for them, further stimulus material in comparing and contrasting their futures perspectives with those of their students. As in previous activities, the teachers noticed key themes which appeared to emerge. These related to technological futures, social futures and cultural futures.

	Looking Back	Looking around	Looking forward
<b>Technology (wheel)</b>	Before the wheel was invented, people use to walk places and ride animals.	People got around in cars, motorbikes and on trains and buses	People will use trains and rockets and space backpacks to get around
<b>Politics</b>	Kings/Emperors/Armies One person made the decisions for everyone else. Other people except the leader didn't get any choice	In Australia, and some other countries, people vote for governments and have a say about what is going to happen. Like, once aboriginals couldn't vote and everyone argued and they were aloud to.	There will be whole planet governments, and planets will be like countries are now.
<b>Values</b>	Everybody thought the same way, and used the same manners because everyone was the same and was taught the same way to act.	Most people think the same, but not everyone understands the same rules, or the right way to act if it's a different place from where you are born. You can act someways in Dandenong but you can't act that way in the city	People will just live with others who believe in the same stuff and act the same ways
<b>Religion</b>	People had their own religions, but most were Christian	There are many different religions, and more people are not Christian. There are many fights because of religion.	People will accept that people can all believe in different Gods. Maybe everyone will find out it's all the same God anyway.
<b>Family</b>	The family was made up of two parents called Mum and Dad, and more than two kids. Families use to spend a lot of time together with their cousins and grandparents.	There are different kinds of families. Some have 1 parent, and some have 2 mothers or 2 dads	Families will be smaller because people will only be able to have one baby because there's not enough food and water.
<b>Environment</b>	There were more natural jungles and rainforests. Once upon a time, there were more different animals.	There is still natural environments away from the cities. People have to be more careful how much water they use.	Scientists will find ways of reusing water and rubbish and growing more things. People might live in trees.
<b>Work</b>	The dad in the family worked to earn the money	Mums and dads both work. Some people work more than one job because families cost a lot of money.	People will work from home on their computers and machines will do the stuff like building and farming
<b>Other (fun)</b>	People use to play cards and other games. They use to go and dance with each other.	People play on computer games and talk to each other on MSN and the phone. Families have meals together.	People will have rooms in their house where its whatever you want it to be.

Figure 22 – Sample of students' temporal scanning – Immersion and teacher reflection

The students anticipated ‘lots of big technological changes and advances’. In many of the matrices, students had talked about the ways in which science and associated technologies would ‘save us from all kinds of things’ (Penny, PLT6, l. 978-979). From the work samples, the teachers identified key areas in which the students anticipated technological responses to human needs: environmental solutions (water, transport, food production), medical advances (cures for a range of diseases, vaccination, health and well-being), communication technologies and social interactions.

Another key theme which emerged was around the idea of social futures. The teachers were interested in the students’ perceptions and projections of how people lived together. The students appeared to be particularly aware of social issues which caused some concerns within the group of teachers around the pessimism which was represented in students’ views of their social worlds. Some of these issues related to drugs and social health, and were also focused on the changing structure of the family. In a number of matrices, students had identified groups of children living together and looking after each other, whilst their parents worked. Interestingly, many saw that the home would serve dual purposes in being the place of habitus, but also the remote work place. Teachers were curious about the ways in which students positioned themselves and their lives within collective futures. They felt concerned that in many cases the students perceived themselves ‘repeating the futures of their parents because they just don’t think about any alternatives. They can do so much better’ (Mary, PLT6, l. 1111-1113).

The third most prevalent theme which arose was that of cultural futures, and the ways in which the students considered the changing ‘global village’. The teachers were surprised by the ways in which the students had envisaged changing values, and the ways in which ‘colonies’ might be formed around groups of similar orientations. And, whereas in many of the previous activities, the teachers had been anxious about discussing religion or anything that ‘the parents might get sensitive about’, they felt very comfortable in the ways that the discussions arose from the matrices. The teachers observed that the students had thought about the future of religion and other cultural differences much more creatively than they had as a group. Whereas the teachers had considered escalations in many cultural clashes over diversity, the students were able to see the ways in which futures scenarios might be accepting of difference, and how

‘eventually everyone might just come to know the same god through different relationships’ (Geri, PLT6, l. 1376).

Through our PLT and reflecting upon the data evidencing student engagement, what became clear was that these emergent themes would form the basis of the project based learning within the learning space. However, before proceeding into the projects, there were some challenges and queries within the teaching group, particularly associated with the notion of temporal scanning, and change and continuities. These challenges provided further evidence of the complexities associated with the teaching of futures where ‘fact’ and ‘positivism are not valid. This raises the whole notion of speculative learning (Fullan, 2005b) with which teachers are largely unfamiliar and uncomfortable. In this project, whilst the teachers felt some discomfort, they were committed to ‘seeing where this futures stuff will go’ (PLT6, l. 1543). Based on the PLTs, thus far, and what the teachers had observed within their classrooms, they embarked on independent project based learning within their teaching spaces.

### ***A reminder about project based learning in this school***

As described in Chapter 3, Wooranna Park’s pedagogical approach is strongly influenced by Reggio Emilia philosophy of education. Evidence of this is seen through the immersion process into a particular topic, as well as through the student negotiated project based learning. In this research, alongside the teacher learning, the students were involved in futures immersion. In this process, the students were faced with many provocations and stimulus materials which encouraged their futures consciousness.

### ***Independent enactment of professional learning***

As part of the teachers’ professional learning cycles, the students participated in workshop activities led by the teachers considering the ways in which an explicit futures focus could be enacted within the Grade 5/6 curriculum. As the immersion was drawing to a close, key interest

areas emerged. These formed the basis of student negotiated learning, through five main projects: Social Futures, Techno-futures, Global Futures, Fantastic Futures and Future News.

### ***Social Futures***

The Social Futures project was led by Mary and comprised 26 children. In coming to this project, Mary had thought that she would focus on how these children wanted their lives to be, and the ways people might live together in the future. As described in her original ‘pitch’ (see Figure 23) to the students, she was interested in exploring the ways in which ‘people could work together to make the world a better place’ (TIMB, l. 39-41). On this theme, she encouraged the students to consider what social hero they might be in the future.

#### Social Futures

Our aim in 'Social Futures' is to discuss the following issues:

It is towards students developing their own heroes.

It is time to shape what we want and need now, for the future.

The hero can't be outside of us. We need to be the heroes in making the difference for future generations.

Heroes in the future! Courage in the future! Philanthropy in the future!

Who are our personal, local and global heroes?

The role of ALL superheroes is to face the world from adversity.

Our aim in 'Social Futures' is to try and answer questions, such as the following:

How do people really make a difference?

What are some of the attributes of a hero?

What does a hero mean to you?

What are the people of the future like?

How do we encourage people to make good choices in the future?

How will I make a difference?

Are there going to be heroes in the future and will they influence our lives?

How will people be treating each other in society in the future?

How can we help people around the world?

How will people live in the future?

Will there be any peace or freedom in the future?

What will the future look like?

Will we have clones?

How will we survive in the future?

What does our popular culture and media tell us about what a hero should be like?

What does a hero look like? Can a hero be anyone?

**Figure 23 – Social Futures overview**

There were a number of individual threads which emerged through this project which all came together in the Social Futures magazine. The group investigations commenced by looking at the actions of superheroes, and the ways in which they made differences in the world. The students identified the problems which these heroes aimed to address. For example, in studying Superman, they considered what justice looks like and why it is important.

The students then considered people in history who had made an impact on the world. They looked at inventors such as Thomas Edison, Graham Alexander Bell, James Naismith and Marie Curie, and the changes in the way people lived together as a result of their ideas and endeavours. After these shared stories, the students looked individually for people who had influenced others in the world. In some instances they looked towards those who had won awards, such as Nobel Peace Prizes, or others they were aware of in their local communities. The students considered what society might look like if these people hadn't taken the actions they had, or had been as passionate about the issues they were trying to resolve.

In the final phase of the project, the students reflected upon and discussed what was important in their own lives, individually and collectively, and the types of heroes and champions they could be in the future. In scaffolding this thinking, the group drew upon tools such as diamond ranking (Hicks, 1988; Slaughter & Bussey, 2006) and futures triangles (Inayatullah, 2006b; Slaughter & Bussey, 2006). Their heroic deeds related to personal realms, such as 'want[ing] to make life better for my family', to global domains where 'all children are safe wherever they live, and they've got enough food' (TIMB, l. 65-72). Each of the 'heroes' presented a plan of their action, and their analysis of the current contexts, through their contributions to webpages and other multimedia constructions. Another representation of the students' learning occurred through a production of 'This is your life' where students told their stories retrospectively from the future.

Mary reflected upon the project she had been involved in. She was very positive about the ways in which the students had engaged in the process, and how enthusiastic they were to contribute to the wider community:

They wanted to know how they were going to make a difference. And that to me was huge.

That's what my goal was maybe further down the track but they wanted to get into it

straight away ... And I thought, wow, okay. They wanted to know. I liked the fact that they would come to the table with something, even if it was a question we couldn't answer, and they were excited. And that made things exciting for me because I'm normally the one who's pushing them, motivating it, and all that sort of stuff (TIMB, l. 276-282).

Mary delighted in the fact that her students had become more curious about the world. At one stage, she described them as 'hungry to know' (Mary, PLT7, l. 33). What impressed her was that the students were motivated to engage in deeper inquiry than she previously facilitated. She commented that 'simply giving them the headlines was not enough' and how these students understood that in order to make good decisions about their futures they 'had to understand something fully' (TIMB, l. 365-371). Moreover, Mary noted that her students always looked for ways to plan action, and whereas she had felt quite 'defeatist' at times, the students showed great resilience and endeavour:

Nothing superficial ... They wanted the reality of things and if it was too hard to realise, it didn't matter because they really wanted to know how to change it. And it didn't matter that it was gloomy and all that sort of stuff (TIMB, l. 542-546).

Mary was also very happy with the ways in which these futures pedagogies traversed across and within many different curriculum areas. She commented that the learning that these students had engaged had 'really connected all of the different subjects together' (PLT7, l. 666). She also reflected that there were many opportunities where learning could be interdisciplinary or separated for specific content knowledge. Mary noted that she had covered much more content through the open-ended nature of this project in comparison with what she would normally achieve through a 'directed unit of work' (PLT7, l. 669):

I think because of this project I've been able to explore lots of different subjects. I mean, because of this and the way it was setup and the questions and the different areas that we went into, we were able to cover so much. We did more curriculum-wise than if I had planned it. I think the kids thought that, you know, anything is possible. And the fact that we had that in a project is just amazing. And I think that's something we need to think when we do the other projects, that from the beginning you already know where you're going. Whereas in this, we didn't. And the fact that we were learning as we were going through... (TIMB, l. 927-938).



Mary was very committed to the idea of future learning and development of futures perspectives within her personal and professional lifeworlds. She was ‘amazed’ by how much she ‘learned by listening and working with the students’ (PLT8, l. 17-19). One of the challenges she had faced was in ‘keeping up with the students’ (PLT8, l. 26-28), and thinking more laterally to understand the ways in which students were thinking about their futures. This is highly representative of Reggio and enactivist learning theories, as described in Chapter 3. Mary was surprised that the students’ ‘abilities to think about the future were so much better’ than her own (TIMB, l. 56). Interestingly, the other teachers made similar comments.

### ***Techno-futures***

The Techno-futures group was led by Penny and comprised 27 children. In Penny’s immersions and initial presentation of this project, she focused on investigating many different types of technology in our world. She ‘dazzled students with the ways in which different inventions have changed the ways that people live’ (PLT7, l. 37-39). As a result, the students were ‘passionate about science and machinery’ (PLT7, l. 40). Penny noted that these were also the students who were very engaged in robotic workshops which were running in the school, using Lego systems with the assistance of an engineering student from Monash University.

The project began by using the temporal scanning tools used in the earlier professional learning session. The students considered the various tools and conveniences that people employ in their lives, and the ways in which these have changed over time. The collaborative learning processes focused on investigating these technologies in the students’ lives, and then looking at technological and scientific developments on a global scale. A shared research project of this group focused on the uses of nano-technology, the ethical and practical implications of genetic modifications, and the possibilities for alternative energy sources.

Arising from the shared investigations emerged a number of individual inquiries focused on ‘passion’ projects and drawn from each child’s scientific or technological interests. In many ways, this was much more reflective of constructivist learning theories, in contrast to the more open-ended Reggio and enactivist learning theories described in Chapter 3:

What we did was we all came together with our passion. We spoke about what our particular passion was in technology so the children were interested in transport, like cars, monorails, transport etc. I was interested in photo cameras. So we all said, to differentiate the project, why not let every one of us investigate what we're generally interested in? (TIPK, l. 43-48).

Penny led the students through a joint inquiry where they examined how things had changed over time. As an example, they considered how washing of clothes had changed. They identified how clothes had been washed in running natural water, and 'for extra scrubbing' were 'wrapped in rocks and banged against river and creek beds' (PLT7, l. 432-433). Through a visit to Scienceworks museum, the students investigated more modern techniques, through the use of boiling water, in 'the copper' and the use of washboards. They jointly researched current practices which involved mechanical and computerised washing devices.



Figure 24 – Newspaper article: 'Wash clothes with thin air'

With their research well grounded in present and past orientations, the students then began to speculate and 'research the future'. They discovered newspaper and journal articles which also examined possibilities of 'futures laundries' and the associated laundry practices. The students enjoyed the opportunities to explore alternatives. These ranged from a naked society to microwave 'zapping' to the use of disposable clothes. One student referred to these disposable clothes as a 'full bodied nappy, where you really got a Huggie' (PLT7, l. 526):

And it was amazing because that's when I got kids thinking it didn't end here. This isn't the last vision that's going to be made. And Vanessa is, like, how good is it going to get. And someone else wondered how bad it could get. Most were curious, like what are we going to do. And it was one child that took me away and talked about a future that he believed was going to be the most effective (TIPK, l. 173/185).

From this collaborative inquiry, the students explored their passions, either individually or in small groups. They participated in a 'looping process' where they would work individually on their project, and then 'come back to educate the rest of the group' (PLT8, l. 73-76). Interestingly, the teacher found herself engaging in her own inquiries alongside the students. She noted that the 'dynamic' of teaching had changed considerably, and each person had become an expert in their own right, and through their own research. She felt that she had less to contribute in 'the traditional role of the teacher'. Penny also noted that alongside the students' increasing futures curiosities, she was becoming more enthusiastic to engage in the same processes to think about the different dimensions of her future.

This project concluded in the publication of an e-journal (see Figure 25 for an exemplar). This included a video clip in which the students verbally reported upon the research they had undertaken, as well as presenting a 'more formal research report'. Each student produced a 'slide' which represented their temporal investigation of scientific developments. The topics of investigation considered robotics, nano-technology, mobile communications, transport and various fuel sources. One student who had investigated the development of the refrigerator went so far as to send his design of the future fridge to LG, the global manufacturing company. LG respectfully provided feedback on his design, to which he once again responded.

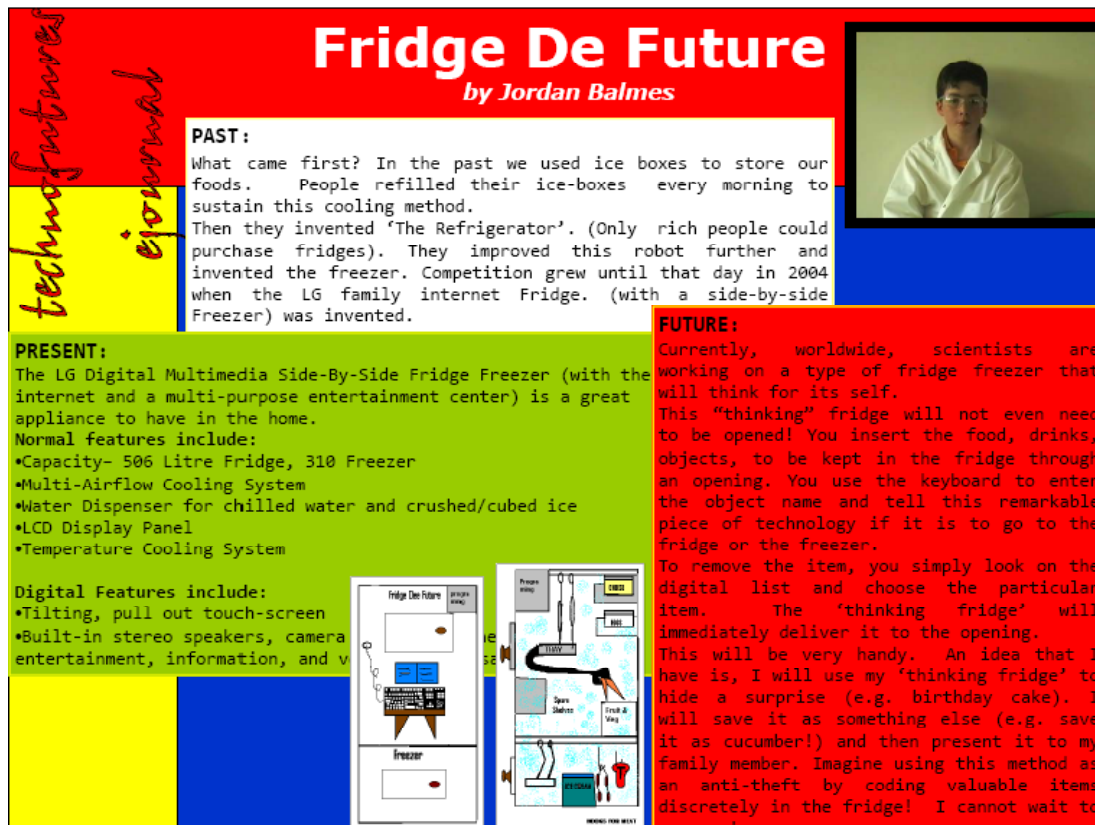


Figure 25 – E-journal entry: Techno-futures (Fridge de Future)

Penny stated that she enjoyed teaching futures perspectives through science. She said that this project has highlighted how much she takes for granted in what her students know and do not know about the physical and technological world in which they live (TIPK, l. 663-670). She was able to 'clue into' the ways in which they were interpreting the world (TIPK, l. 673). The curriculum in this case provided directions for student learning, and highlighted the deficits which were being reproduced in the classroom. As an example, some students kept repeating that the ozone layer was the reason why water was increasingly scarce. Penny came to realise that the students were connecting different 'pieces of advertising and popular culture' which needed to be readdressed (TIPK, l. 892-898). Similarly, she realised that some of the scientific understandings that she was explicitly teaching in her classroom were either not 'connecting with the students', or in some cases the students 'already knew' (TIPK, l. 1028-1029). Penny considered that futures perspectives within her curriculum allowed a 'more open-ended and challenging way of engaging students in deeper learning, as well as getting them right where they live' (TIPK, l. 1137). She was also fascinated by the 'cross-overs' between the different teachers' projects (TIPK, l. 1245).

### ***Global Futures***

Jennie designed the Global Futures project. There were 36 students enrolled. Originally, she thought that the project would investigate how people interact with others around the world, and would ‘probably take a fairly economic view’ (PLT7, l. 266-268). In our original planning sessions, we had talked about the possibility of studying organisations which work globally, such as World Vision and McDonalds. Indeed, the unit did commence in this way, but the students ‘kept wanting to learn about the countries their families had come from, and how they ended up here’ (TIJV, l. 21-23). Jennie saw new possibilities for where the project could move. She also identified ways in which she could ‘change the ways students saw their futures through the eyes of their parents’ (TIJV, l. 27-28):

I think with these particular children because of the environment, they live here in the Dandenongs, and perhaps the parents don’t value education, I don’t know ... They are what they are but that doesn’t mean that you need to be locked into that. Once you give them the thinking tools they can then go out and do whatever they like and I think that’s the most empowering part of doing projects like that. Because you’re giving them something that they can carry through for a life time in whichever area they want to go into (TIJV, l. 83-91).

Like Penny, Jennie began with a whole group investigation. She used texts recommended by the Global Education Project<sup>56</sup> to explore cultural difference around the world. The students investigated various traditions from their own backgrounds and explored their historical significances. From here, they looked at the ways their cultures and traditions had remained with them and their families as they came to Australia. Within and outside of the group, the students enjoyed the opportunities to compare and contrast different aspects of their lives. As time went on, they also demonstrated great interest in ‘hearing’ and learning about the countries where their classmates’ families originated (TIJV, l. 360-361). Jennie especially noted that children who had previously ‘been against other children because of their nationality’ became more accepting of the different ways people lived (TIJV, l. 407-409).

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<sup>56</sup> The Global Education Project has been initiated by the Australian government’s Overseas Aid Program. Its goal is to raise awareness and understanding of global and development issues amongst school students and to foster the skills, knowledge and values which will enable them to participate in a global society which is becoming increasingly interdependent.

As the project developed, the students more independently examined the ‘state of play’ of their country, and considered how the country and its traditions might change over time (TIJV, I. 487-489). In order to direct their research and inquiry, they used a template (see Figure 26) which focused their attentions around the cultural characteristics of values, social interaction, religion and beliefs, education, and material life.<sup>57</sup> Attached to each of these frames was a series of guiding questions. They considered these characteristics from historical and current perspectives, and then forecasted the ways in which the culture might stay the same or change. As the students shared their work with others, they justified the ways in which these forecasts had been made and outlined their key thoughts in this process.

DATA CHART FOR CULTURE RESEARCH PROJECT				
VALUES: What values does this culture uphold? What do you see as good/bad, right/wrong, important? How is this culture governed? What rules and laws are upheld in this culture?	SOCIAL INTERACTION: How do the people in this country interact? What are the important times of the year? How do they celebrate? What do they celebrate?	RELIGION/BELIEFS: What God or prophet do the people in this country worship? What religions are seen in this country? How much influence does religion have on the way the people live?	EDUCATION: Is education seen as important in your country? Do children have to go to school? What age do people stop going to school? What kind of schools are in that country (eg. Primary, Kindergarten, Secondary, university)?	MATERIAL LIFE: What is life like in this country? What are houses like, and who lives in them? Does this country have access to computer technology? Does it have electricity or fresh water? What do people do for work? How do they spend their time? What are the cities like? What are the country's main crops? What food do the people eat? Where do they get it from?
<p><b>Current Culture</b></p> <p>Thailand is governed with a king as the head of state. The king is head of state which is King Bhumibol Adul Yodte. A house of representatives has 360 members and the senate has 270 members. The prime minister is an elected member of parliament. The government is divided into 76 provinces, each headed by a Provincial Governor. One of the biggest and most important values of Thailand are elephants. Long ago, they used in war. Later, they were used as mounts for use in battle. The military has since taken over the government in Thailand or tried to do so. Little people in Thailand are suffering from some of these and problems which have yet to be solved.</p> <p><b>Future</b> What will the state of culture be like in 20 years? Why do you think that?</p> <p>An elephant is a symbol of Thailand because it is very important to them. In the future, it will still be important and part of Thailand's history because they were trained by Thai warriors. Thai people are happy</p>	<p>These people communicate by phone, mobile, radio broadcast stations, radio, television broadcast stations, televisions and by internet. When greeting someone in Thailand you would not shake hands but you would "wai" this is done by placing the palms of your hands together (prayer style) and bow gently. If somebody dies, you should return the ashes. Celebrations of Thailand include Children's Day, Chinese New Year, Songkran Festival, Southern Phibun Scout Day, Queen's Birthday/Mother's Day, Chulalongkorn Day, Jay Krathong, King's Birthday/Father's Day, Christmas Day &amp; New Year's Party. Children's Day is on the second Saturday of January, which is a celebration of all Thai children playing in society, church and home in a special ceremony.</p> <p>In twenty years time, the Thai people will still celebrate the celebrations they celebrate now and there is more to come. How they celebrate could be known as a value of the Thai culture because they could have</p>	<p>Buddhism is the most important and dominant religion in Thailand. There are strict rules of dress codes for visiting temples. The religions are Buddhism 95%, Islamic 3.3%, Hinduism 0.1%, Christianity 0.5% and other 0.1%. Since the 19<sup>th</sup> century, Buddhism has been the most social religion. Buddhist holy days and festivals are celebrated with great colorful ceremonies. There is also a small number of Christians, and in the south there is a community of Muslims. There is complete religious freedom for all faiths. Much of Thailand's tradition was seen only in temples and houses. Painting and stucco scenes from the life of Buddha, and sculpture, too, was confined to religious subjects. On a yearly basis, the students visit the local temple to see the stucco and sculpture. It will be the God of not people. Buddhism will still be a religion and people believe and respect. Wats and Temples (Gones) will be seen in the future. But other religions will be increased as well as many celebrations.</p>	<p>Education is free &amp; compulsory between the ages 7 &amp; 15, but some rural areas lack schools. The educational system includes six-year elementary schools. Five or six-year secondary schools will be universities, military academies, and teacher training institutes. A number of these have not been established in Thailand. Australian have not been established to continue their studies or obtain special skills. A school of modern art was established in 1933 at Silpakorn University, and Bangkok now has modern art as well as traditional sculpture or deep reading and writing that is not dead. Even for our students they have to spend hours visiting the many wats of the Thai alphabet. They need to be able to increase the number of schools.</p> <p>Thailand will continue to improve the education in Thailand because as well as any other child, he or she needs a good education. More primary schools and secondary schools will be made as well as</p>	<p>OVER 65 million people live and work in Bangkok, the capital, which is rapidly becoming the country's most important industrial city. Many people have moved from rural areas to work in factories and in industries. Many work for the government and in other sectors. This kind of people has caused a shortage of land recently. Homes were small one or two storied wooden buildings. The government provides houses for its employees. Private sector develops houses for those who can afford. Some people are still living in very primitive and moved around the cities have a big Thailand. They have access to computer technology, but they can use the internet. It has both electricity and fresh water. I know that because they have access to phone and internet. The city is pretty busy with a lot of people going in and out. Life is like</p> <p>The Thai people have created many delicious meals during the past few years. I think the Thai people will be no longer to mix and match foods to make more different and yummy foods. They might use a lot of everything but</p>

Figure 26 – Matrix for cultural futures

The students collated their investigations in a Powerpoint Producer file. They referred to this as their ‘Global-e-book’. Each student summarised the key learning of this project, personally and in regard to their family’s country. In many instances, they discovered things that they felt concerned about and ‘saw the ways in which change could happen through education,

<sup>57</sup> I had developed this template in my own classroom practice for a futures based examination of countries and their cultures undertaken in 1998 at Sacred Heart Primary School, Preston.

especially for children’ (TIJV, l. 657-659). There was much discussion in this text about the ways in which the ‘world will change as more countries and cultures come together’ (TIJV, l. 795-796).

Upon reflection of her students’ work, Jennie was somewhat taken aback by the ‘depth of the learning’ they had experienced (TIJV, l. 921). Furthermore, she was struck by ‘how much of the curriculum’ had been covered:

This is really a geography unit. Maths is also being covered. They look at a lot of numbers when they study other countries. They used lots of charts and graphs to describe what they had learned. We looked at science. The language, English component through the literature, and even understanding all the material we worked with. It’s critical thinking within each of those areas. Looking at science facts, concepts, biology, whatever (TIJV2, l. 66-74).

Jennie found it difficult to articulate the difference the ‘futures dimension’ had made to her curriculum practices. She talked about the ways in which discussing futures with her students led to many more questions than answers. Whilst at times Jennie felt frustrated by the number of questions, she more strongly identified with the challenges and ‘frustrations the students have felt in classes where they have had questions dismissed by teachers, or more commonly just been told what they had to know’ (TIJV2, l. 235-237):

I think in the past, the subjects that we’ve been doing, we all pretty much knew about, but with futures you haven’t got all the knowledge so we were all in the same sort of area together and we were all learning as we went along. So that was the difference. It was an area we have never gone into before.

Similar views were held by the other teachers. Arising from this research, I suggest that the open-ended and interdisciplinary nature of futures forced them to rethink their pedagogical practices. Further, in the scaffolds provided, they were enabled to more fully explore what it meant to teach in truly student-directed and negotiated ways. Whilst they may have claimed to be a Reggio Emilia school, it was only through this cyclical futures action research that such philosophies became enacted. The ‘messiness’ and discomfort (TIAQ, l. 231) which the teacher experienced in the Fantastic Futures project was something which further highlights this disjunct.

### ***Fantastic Futures***

Fantastic Futures was facilitated by Anessa, who develops curriculum with a strong Information Technology (IT) focus, and the students were very keen to participate. During the immersion phase, she noticed the ‘gloomy ways’ that students thought about the future (PLT8, l. 488-489). She remarked that it was often difficult to ‘just teach a class, because everything that was brought up could make the world a bad place’ (PLT8, l. 564-565). Like Penny, Anessa discovered that the students had some ‘techno-views of the future’ and many made assumptions about the world they would live in (PLT7, l. 33). For this reason, she decided to run a ‘scenario building group’ (PLT7, l. 531). Her aims were to encourage the students to think about the ways they could contribute to ‘building a better world’ (PLT7, l. 532):

We began thinking about what we thought the future would be like, and started to draft on paper our visions of futures. We then identified things that define our world today and combined them with our hopes of tomorrow. We researched to expand our thoughts and in some cases justify the ‘unbelievable’ into palatable scientific philosophy. We gained insight into others’ point of views and expertise, both young and old, and have found we are all children at heart with aspirations to better our lives and the world (TIAQ, l. 34-42).

As a group, Fantastic Futures explored their local community and looked at the way that the physical spaces were used. They went to the local council and had a presentation from the urban planning representative who explained the ways in which communities are designed to meet the needs of the people who live in them. In response to this, the students began to develop a list of the necessary resources and infrastructures which are required currently, such as hospitals, schools, childcare, doctors, dentists and facilities for elderly people. They noted where these facilities are located within the local community, and spoke with parents and others to ascertain ‘what services and resources aren’t available’ (PLT8, l. 332).

Anessa was surprised by how much knowledge she had previously assumed of the students. She had taken for granted that they all understood the roles and structures of community resources and facilities (TIAQ, l. 56-58). As previously highlighted, the students at this school are from many ethnic and cultural backgrounds. Anessa discovered a good opportunity to explore resources which were available to these students’ families, and to consider the different communities from where each of these students had come. Further through the project, she



was able to assist the students to think about how communities of the futures will best be structured to meet the needs of ‘more different people’ (TIAQ, l. 62):

I found that their questions and interests lay with future technology and our moral responsibility, the social aspects of humankind, and concerns with global citizenship. Among the responses, students became excited about robots, becoming rich, flying cars, space travel and new life, mainly aliens. But I thought it was important to help them think about how these might happen in their own worlds and communities. In this strand of futures thinking, our objective was to create positive yet realistic multidimensional futures, based on educated forecasts (TIAQ, l. 73-82).

Anessa found the process of scenario planning in the classroom ‘messy’ (TIAQ, l. 231). Whereas in traditional pedagogical approaches the teacher could direct where and how the students were focusing on their learning, she reflected that because of the futures dimension ‘there were no answers, and that forced everyone to continually justify what they were thinking’ (TIAQ, l. 247-250). She described the ways in which some of these justifications led to new futures scenarios, and that the students became very critical audiences to each scenario. In some instances, Anessa found herself disagreeing very strongly with what the students were producing, and they with her. There appeared to be some disconnect between the ways in which the students were viewing ‘the future’ as opposed to the ways in which Anessa was. She described the process as cyclical in that the students would design scenarios, bring them to ‘the drawing board’, and then go back and redevelop.

**Figure 27 – Scenario planning: student sample**

Through scenario building processes (Figure 27), one student described the increasing use of high density living. Anessa was surprised when the student suggested that the world's land would become so unusable that a 'new gravity force will be discovered and people will need to live in buildings and communities which are all attached to use the energy smartly' (TIAQ, l. 311-315). In order to move from community to community, the student saw the emergence of new 'hover' or 'flying cars'. When Anessa asked the student to clarify the difference between hover and flying vehicles compared to planes, they believed the key differences to be in the size and fuel sources. Again, Anessa was surprised at the level of 'complicatedness in the students' thinking' (TIAQ, l. 327).

The Fantastic Futures group each produced a model of their scenarios. In some instances, these were produced through digital design software (e.g. Google Sketch-Up), and in others, the students built their scenarios from materials such as foam, wire, textiles and clay (see Figure 28). Some used pen and paper technologies, and provided rich annotations throughout to represent the ways they were thinking about their community designs.

**Figure 28 – Scenario building in the classroom**

Anessa has commented upon the ‘richness’ of futures in the classroom (TIAQ, l. 433). She believes that this unit of work has ‘made the students more aware of what is around them right now’ (TIAQ, l. 440). She has also noticed that the students have continued to make links between what they have learned in Fantastic Futures and items they have seen in the local paper. Anessa is ‘hopeful’ that this unit has helped the students to think about the ways in which they participate in society, and the potential there is for them to have an active role in shaping their physical and social settings (TIAQ, l. 665).

***Future News***

Future News was developed to encompass a broad range of abilities and interests, in a streamed classroom for those students identified with a learning deficit or ‘special need’ (Esme, PLT1, l. 112). The teacher, Geri, has a particular interest in science and new inventions, and often brought to the PD agenda a range of resources which could be used to stimulate thinking about the future.



Figure 29 – Thinking about the future using the media

During the PD sessions, we had explored the ways in which media provided a means for the students to think about what might occur within alternative futures. In Figure 29, the teacher considered the alternate futures which might eventuate from this text, depending upon what decision was made about the development or restoration of a historic railway station. Similarly, in this project group, the students projected various futures depending upon what newspaper and other media texts they were working with.

**HEY THIS IS JAMES M AND I TODDY. THE FIRST INSTRUMENT IS THE DIGITAL TRUMPET. IN A DIGITAL TRUMPET THERE ARE COMPUTER CHIPS THAT WILL MAKE DIFFERENT SOUNDS ANI STYLES OF MUSIC AS THE PLAYER HITS THE BUTTON. MUSIC OF THE FUTURE WILL E DOWNLOADED ONTO THE PHONE INTO A COMPUTER SYSTEM WHICH THE HOME. THEY CAN CHOOSE MUSIC, ANI CONTROL HOW IT IS PLAYED THROUGH THEIR THINKING.**

Figure 31 – Futures news: student sample 1

You will be able to travel from one time to another.  
Jemma

Figure 30 – Futures news: student sample 2

Through their media study, students engaged with the futures of musical instruments, transport and space travel, as well as genetic modification of animals and food and global warming. They were enthusiastic to understand the things which were reported on the news and in the papers. Geri, in response, developed rich interdisciplinary learning which situated the content of the media within the curriculum.

Through the traditional disciplinary learning domains of Geography, History, Economics, Science, Visual Arts and Music, the students collaboratively and individually interrogated various texts. The children were fascinated by the notion of genetic modification. They researched the ways in which natural foods were ‘enhanced by other chemicals to make them last longer’ (TIGP, l. 243-144). Geri was not surprised when students suggested that ‘eventually everything will just be dehydrated into a tablet meal’. The students were also very curious about ‘Dolly the Sheep’ (McLaren, 2000) and other examples of cloning and mutations, such as *The Simpsons* (‘Two Cars in Every Garage and Three Eyes on Every Fish’, 1990). Geri highlighted the ways in which students initially responded with ‘wonderment and excitement in thinking about cloning and other genetic modifications’, but as their inquiries deepened ‘they became much conscious of the ethical issues’ (TIGP, l. 167-170).

Similarly, the students were very cognisant of environmental issues in the media, but according to Geri, ‘beyond the school and home recycling programs [the students] don’t identify how their personal practices contribute to either improvement or detriment’ (TIGP, l. 231-233). Many investigated global warming, whilst others considered drought and the ‘increase in natural disasters’ (TIGP, l. 238). Geri reported that the students felt despondent about environmental forecasts at the beginning of this unit. Whilst some were able to ‘pick up on the things that they could do, such as minimising their electricity usage’ (TIGP, l. 286), others were compelled to examine scenarios of ‘what would result if the environmental aspects got worse’ (TIGP, l. 292).

The Media Futures project resulted in a Futures News broadcast. Students individually or in small groups created short vodcasts which represented news items in the year 2030. The clips, which reflected the student ‘passion projects and curiosities’, included the use of robots, global

management and politics<sup>58</sup> and changing transport (TIGP, l. 309-310). The students used various software applications to genetically modify different animal species, and discussed the ways that ‘a chicken which doesn’t lay an egg’, for example, ‘removes a rich and natural source of protein from ‘the food chain’ (TIGP, l. 376-382). There were also news items describing futures where people were redistributed throughout the world based upon their cultures and ethnicities. One student drafted an interesting clip which mapped the future of a young child in the media who had suffered terrible injuries as a result of a car accident. This representation demonstrated a strong sense of hope and resilience for the futures of others.



**Figure 32 – Futures News broadcast**

Geri reflected upon her personal enjoyment in teaching this unit. Whilst she always had a ‘great love of science and all things new’ (TIGP, l. 682), she claimed that she had never ‘really had the opportunity’ to integrate her own interests into the curriculum (TIGP, l. 696). Moreover, Geri was ‘delighted’ in the ways that her students engaged in learning (TIGP, l. 711) and worked ‘in smarter ways’ than was ‘normally expected of them’ (TIGP, l. 827-828). She felt that the futures learning in her classroom provided a new edge, and that the students were more interested in classroom matters because learning was also connected to their future lives beyond the classroom (TIGP, l. 913).

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<sup>58</sup> The students noted that there had been two generations of Bush in US presidential roles. They suggested that ‘Georgina W Bush’ would be the first president of the United Countries of the Globe.

Whereas in the previous chapter I described the professional learning the teachers encountered through a variety of guided workshop activities and experiences, in this chapter I have outlined the ways that each of these teachers enacted their futures understandings within the primary classroom, whilst drawing upon Reggio Emilia and enactivist philosophies. In the next chapter, I will draw upon the previous chapters detailing the brackets of discourse-in-action and discursive practices, in order to revisit the conceptual framework which inducted the reader to this thesis, and further to respond through data to the questions which have framed the research design.

## ***Chapter 7 – Making sense of the voices from the field***

In the previous chapters, I have presented data and some analysis which has been developed through the processes of this research. Chapter 5 reported on the ways that teachers engaged in PD focus groups to increase their professional understandings of the futures field, in order to subsequently implement explicit FTP within their curriculum. The reader will recall the ways in which this first wave of data focused on what was said by the teachers, and their futures consciousness (discursive practices). Chapter 6 then described the ways in which teachers participated in an ongoing PLT to support the enactment of FTP within their curriculum (discourse-in-action). Projects which emerged within the learning spaces at the school and developed into rich open-ended challenges for both teachers and learners were outlined.

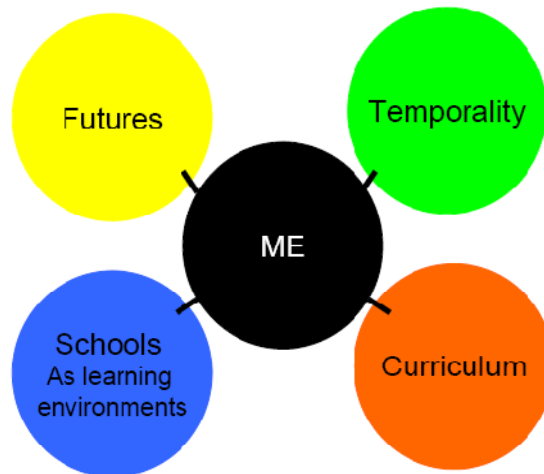
In this chapter, I will highlight the key findings which emerged through the project. There are two frames I will use to discuss what has emerged from the research design. The first is in revisiting the four central concepts which foregrounded this study: futures (Chapter 1), temporality (Chapter 2), curriculum (Chapter 2) and schools as a learning environment (Chapter 3). Through these concepts, I will develop the co-emergences which have occurred. I referred to co-emergences in Chapter 3 in relation to enactivist theories of learning. The second frame used is in responding to the research questions which guided the research design. It is my intention to synthesise these two frames in order to identify the interplay between the many ideas and concepts addressed within this study.

### ***Co-emergences between the four central concepts***

In the introduction, futures, temporality, curriculum and schools were identified as the four central concepts on which this study is founded. They were presented as a diagram (see Figure 33) and subsequently explored through latter literature chapters. At the centre of the four key concepts framing this study was ME. The reader will recall claims that my role within this research is central to this thesis as it arose out of my inability to equilibrate or make sense of



the four concepts as they occurred in relation to each other, within the context of my experiences, research and observations of/about education.



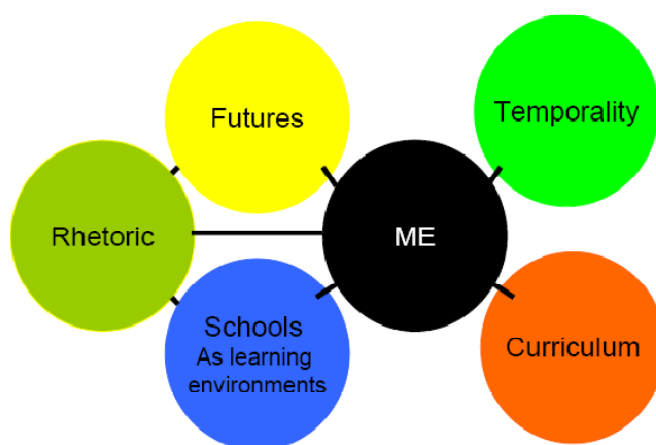
**Figure 33 – The four central concepts**

In theorising the research outlined in this thesis I will describe the early co-emergences which have arisen as I have tried to equilibrate these core concepts. I contend that four specific co-emergences emerge through the interplay of these concepts: futures, temporality, curriculum and schools. In Chapter 3, I described enactivist notions of co-emergence (Begg, 2002; Davis, Sumara & Luce-Kapler, 2000; Maturana & Varela, 1992; Reid, 1996) as the learning and knowledge which emerges as a result of the complex system of interactions between dynamic and interacting agents. Thus, in the first iteration of these co-emergences, I will provide a brief overview with an intention to revisit many of the ideas through the research questions. It is through these co-emergences that I am able to respond to the research questions which explored the possibilities of futures perspectives within the everyday practices of a school, through the interactions of teachers, students and their learning, and curriculum practices.

### ***The first co-emergence: rhetoric***

Much rhetoric surrounds the ways in which schools engage with the concept of futures. I therefore refer to rhetoric as the 'first co-emergence', as represented in Figure 34. In this thesis, rhetoric is used to describe discursive practices, and implies a disparaging or dismissive sense in

that I am endeavouring to distinguish between ‘empty’ words, or ‘spin’, and action. Traditionally, rhetoric is described as an ‘art of persuasion’ (Soder, 1990). Much of the rhetoric is based on the notion that schools are educating our students for their future, and for our future. This implies that the curriculum is developed with a foresight capacity, yet there is no evidence of what specific future we are educating children for, nor how we will specifically achieve this aim. I referred to this as implied futures (see Chapter 2). An example of this was presented in Chapter 2, which considered the current Victorian curriculum, the *Victorian Essential Learnings Standards* [VELS] (Victorian Curriculum and Assessment Authority, 2005). This document notes that we are educating for a future which is sustainable, innovative and builds strong communities.<sup>59</sup> The ‘future’ here is vague at best, and most likely assumes that the ways of the world will continue as they are presently. This is what Inayatullah (2006a) refers to as *used futures*, where what has occurred in the past, is simply transferred onto a new frame, and the past is reinvented as the future. In this assumption, the curriculum document emphasises the attributes which will be required by the student. These attributes are then assumed to be developed through the enacted curriculum of the document.



**Figure 34 – The first co-emergence: rhetoric**

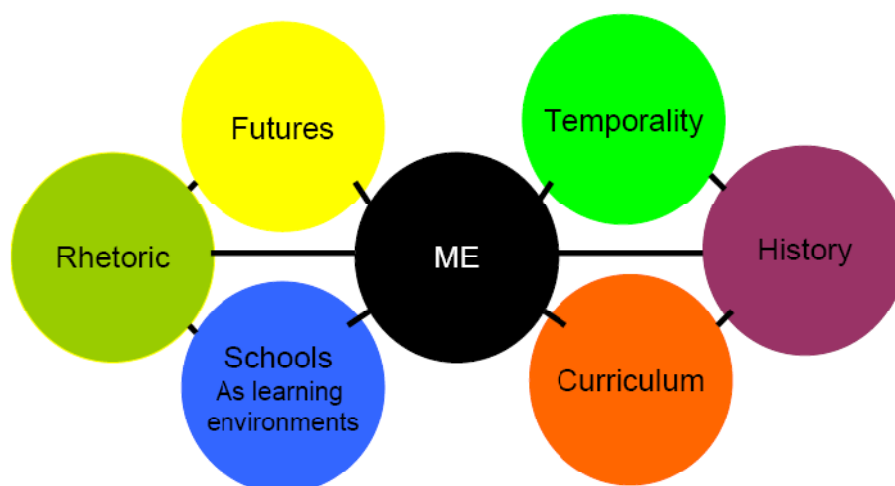
These same assumptions were also articulated by teachers during their professional learning. As they thought about the ways in which schooling prepared students for their future, they listed skills which were developed through traditional curriculum (see Figure 11), and in

<sup>59</sup> VELS describes sustainability as “developing an understanding of the interaction between social, economic and environmental systems and how to manage them”. Innovation is described as “developing the skills to solve new problems using a range of different approaches to create unique solutions” VELS describes its capacity in building strong communities through “building common purposes and values and by promoting mutual responsibility and trust in a diverse socio-cultural community” (Victorian Curriculum and Assessment Authority, 2005).

this way the future fitted their curriculum rather than the curriculum explicitly responding to a perceived ‘pull of the future’ (Slaughter & Bussey, 2006). In order to move beyond the rhetoric, I suggest that a shared notion of the envisaged future or an exploration of multiple futures would be foregrounded in exploring curriculum directions. I argue that the formal/written curriculum should incorporate explicit as opposed to implicit futures education. These ideas were explored in Chapter 2, when considering the interplay between curriculum and temporality.

### ***The second co-emergence: history***

The place of time and curriculum within schools predominantly occurs within the teaching of history. Thus, the second co-emergence is history, as represented in Figure 35. The synthesis of temporality and curriculum highlights the limited ways in which learning is facilitated in this area. Currently, in school curriculum, time concepts are mainly developed through the learning areas of mathematics and history. Mathematics tends to focus on functional time. Functional time teaches children to measure, record and read time from a number of sources, e.g. analogue and digital clocks, calendars, timetables (Gellert, Jablonka & Keitel, 2001). Effectively, it teaches children to use time to work within the demands and constraints of their society. I explored these notions of temporality more fully in Chapter 2.



**Figure 35 – The second co-emergence: history**

The other way in which time is developed within schools is conceptually through history. From the early years of schooling, children are taught about different events and times which have occurred in the past. The construction of history, traditionally, is strongly influenced by a hegemonic and political narrative (Harris & Bateman, 2008). The dominant content focus of Australian history curricula tends to focus on Australian history (settlement and colonisation, Aboriginal and Torres Strait Islander history, federation/national identity), ancient and medieval histories and world history (20th century and 21st century).

In the context of this research project, the teachers were ‘much more comfortable teaching history than futures in the beginning’ (Geri, TIGP, l. 13-15). They were experienced in teaching history curriculum which responded to ‘what Australian children should know’ (Jennie, PDFG2, l. 481). They developed historical time through local communities, and more broadly through students’ independent projects on the cultures and countries from which they had come. Whilst there is some attention paid to the basic tenets of time, such as sequencing and chronologisation, and change and continuities (Clark, 2006; Macintyre & Clark, 2004), the limited development of temporal capacities within children and adolescents is not sufficient. The distinct lack of a parallel or integrated futures perspectives highlights an explicit temporal bias within curriculum.

### ***The third co-emergence: bias***

Arising from the preceding co-emergence, what emerges when the interplay of futures and temporality is explored is a strong bias in the teaching of the past. The third co-emergence in this thesis, then, is bias, as represented in Figure 36. In the way that Australian curriculum documents are written and enacted within schools, I suggest that we are developing temporal bias. In teaching students to be competent in functional time capacities, we are teaching them to manage their present, and in the use of diary writing techniques, to re-engage with their pasts. In the explicit teaching of historical literacies (Taylor & Young, 2003),<sup>60</sup> interpretations and

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<sup>60</sup> Taylor and Young (2003) state that effective teaching and learning in history must develop ‘historical literacy’. The following elements are part of this literacy.

**Events of the past** – knowing and understanding historical events, using prior knowledge, and realising the significance of different events.

understandings as conceptual time, we offer our students a limited capacity to engage with multiple time perspectives. History, as it is currently positioned within Australian curricula and the ways in which it is enacted in schools, anchors its temporal mobility between present and past time perspectives, where past actions are promoted and glorified, to some extent (Macintyre & Clark, 2004). This notion of time, in schools and curriculum, must be broadened, and a richer connection between history, past and present be made (Bateman & Harris, 2008; Harris & Bateman, 2008). It is interesting to note the lack of explicit futures capacities which are being taught, even though schools are ‘educating for the future’ (ACT Department of Education and Training, 2008; Department of Education and Training Victoria, 2005).

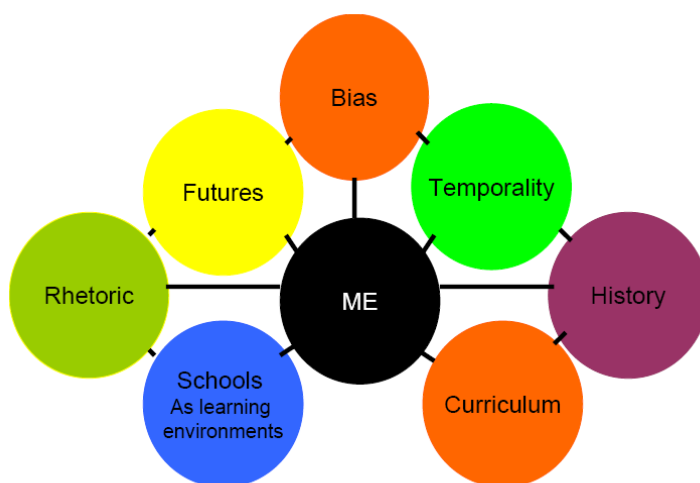


Figure 36 – The third co-emergence: bias

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**Narratives of the past** – understanding the shape of change and continuity over time, understanding multiple narratives and dealing with open-endedness.

**Research skills** – gathering, analysing and using the evidence (artefacts, documents and graphics) and issues of provenance.

**The language of history** – understanding and dealing with the language of the past.

**Historical concepts** – understanding historical concepts such as causation and motivation.

**ICT understandings** – using, understanding and evaluating ICT-based historical resources (the virtual archive).

**Making connections** – connecting the past with the self and the world today.

**Contention and contestability** – understanding the ‘rules’ and the place of public and professional historical debate.

**Representational expression** – understanding and using creativity in representing the past through film, drama, visual arts, music, fiction, poetry and ICT.

**Moral judgement in history** – understanding the moral and ethical issues involved in historical explanation. **Applied**

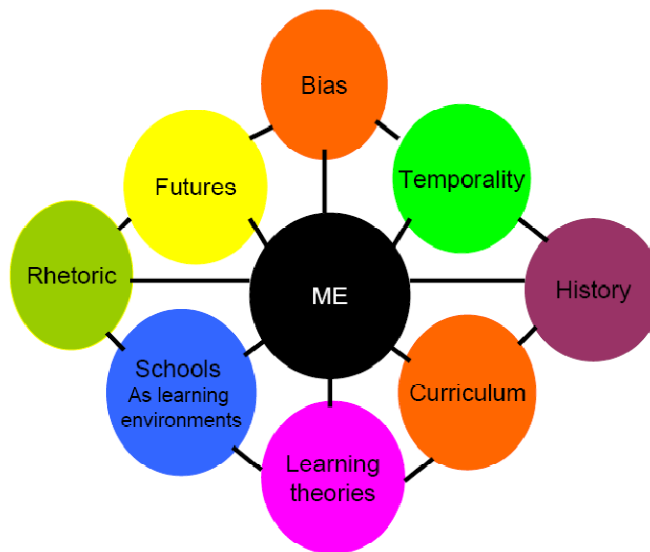
**science in history** – understanding the use and value of scientific and technological expertise and methods in investigating past, such as DNA analysis or gas chromatography tests.

**Historical explanation** – using historical reasoning, synthesis and interpretation (the index of historical literacy) to explain the past. Historical understanding is incomplete without explanation.

In this study, the teachers were proficient users and teachers of history. They were able to recall various 'history units' which had been taught in the classroom. Geri highlighted the ways she walked her students around their local neighbourhood in order to visualise what it looked like in the past. Jennie encouraged her students to learn more about their past cultures and countries, to 'help them feel more comfortable here and now with each other' (PLT8, l.783). Mary encouraged her students to investigate significant people in history, and Penny was more interested in exploring scientific discoveries over time. However, early in the PD when asked how they had developed futures in the curriculum, each in different ways replied, 'I never have' (Jennie, PDFG2, l. 273). Retrospectively, it was 'definitely not something I ever learned at school' (Anessa, PDFG3, l. 73-74). This supports Hicks' (2002) claims that indeed futures is the missing dimension in education. It is in its absence that the bias is apparent. I contend that to make FTP present, there must be a greater focus on different modes of learning.

### ***The fourth co-emergence: learning***

In the interplay between schools and curriculum, the enactment of the formal curriculum within a school environment centres on the promotion of teacher and student learning. Learning is the fourth co-emergence with which I am concerned in this thesis, particularly in regard to the development of FTP (see Figure 37). There are two dimensions of learning which I considered in Chapter 3. In the first instance, I highlighted the dynamic knowledge base required by teachers in classrooms and, accordingly, the need for constant professional and personal learning (Darling-Hammond, 2005; Hargreaves, 2000a; Yates, 2005). In the second instance, I considered theories depicting student learning (Davis & Sumara, 2003; Edwards, 2007; Kumar, 2006; Manturana & Varela, 1992; Sullivan Palincsar, 1998) and the ways in which these influence the everyday assumptions and practices which occur within the classroom (Campbell & Neill, 1994; Clayton, 2007).



**Figure 37 – The fourth co-emergence: learning theories**

In this research, the teacher’s learning was central to the ways that curriculum could be developed, in integrating unfamiliar content, such as futures. At times, the teachers lacked direction or saw the ‘steep learning curve as unmanageable’ (Anessa, TIAQ, l. 13). It was at these times that traditional modes of PD, such as one-off and teacher withdrawal modes, would not suffice to sustain teacher engagement (Anderson & Henry, 2005; Sandholtz, 2002). I suggest that where the ongoing support is not presented through *in situ* PLT (Brownell et al., 2006; Fullan, 2005a), teachers are not confident and lack resources in pursuing new content for learning in classrooms. As a result of this, classrooms continue to reproduce curriculum which is known, ‘tried and tested’ (Mary, PLT1, l. 788). The deficit in teachers’ futures knowledge and practice must be addressed and supported through professional learning. In turn, these will provide greater access to students with regard to a more temporally inclusive curriculum.

Whilst it is interesting and problematic to examine the synthesis of two specific concepts and the resultant co-emergence (as indicated in Figure 34, Figure 35, Figure 36 and Figure 37), it is also over-simplified for none of these can occur without also affecting the other concepts depicted. For the purposes of this thesis, I have been interested in examining the synthesis between and across concepts and co-emergences in what occurs when all of the concepts – futures, in schools and curriculum, enacted through learning theories (professional and student), disrupt the current temporal bias in educational practice, as is demonstrated by the limited ways in which constructs of time are developed through history and functional time. In

the following section I will demonstrate some of the complexities which have arisen within and across the concepts and co-emergences in response to the research questions posed earlier in this thesis.

### ***Responding to the research questions***

Arising from the central concepts and co-emergences, four specific research questions guided this study:

- What is the role of a school in preparing students for their future?
- How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?
- How can we empower and develop teachers' capacities to develop futures perspectives within pedagogy and curriculum?
- How do futures perspectives transform teacher practice in learning environments?

Overall, these research questions sought to respond to the multiple layers of my own existence as an individual in a personal paradigm, as a practising teacher and as a teacher educator, as well as a passionate advocator of futures thinking. In the beginning, I sought to create stronger cohesions between these competing identities, in resolving the ways in which the rhetoric of curriculum documents, which claim a role in educating for the future, can more effectively attend to the learning needs of the students in our classrooms. Underpinning these queries was the strong belief that teachers required a strong explicit futures perspective, in order to provide students within different learning spaces access to shaping multiple futures personally and collectively. Alternatively, education remained a tool of cultural transmission (Brint, 2006) colonising futures (Bussey, Inayatullah & Milojevic, 2008; Inayatullah, Bussey and Milojevic, 2006) for all.

In this section, I will draw upon literature and the previous data chapters to present key findings which have emerged from this research. Further, I will draw upon the previous diagrammatic representations to theorise the multiple and complex ways with which the



interplay of the central concepts and co-emergences resonates within these findings. A summary of these findings is presented in Table 5.

**Table 5 – Summary of research questions and key findings**

Research question	Findings	
What is the role of a school in preparing students for their future?	1	All of the teachers suggested that schools prepared students for their future, but none were able to articulate what that future 'looked like'.
	2	The teachers were all able to recall various claims of curriculum documents which positioned schools as 'agents of the future'.
	3	In retrospect, the teachers realised how little schools actually encouraged thinking about the future.
	4	Australian curriculum is temporally biased towards the past. In this, schools limit a student's capacity to see him or herself as a person who is able to actively contribute to visioning and enacting preferred futures scenarios.
How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?	5	Even though the teachers connected the role of a school to ideas of the future, none of them talked about their teaching in the school from a futures perspective. Each talked about their roles in stimulating and supporting learning.
	6	Even though the teachers connected their role to helping students to understand their worlds better and to participate as active citizens, there were many aspects of the students' lives which could not be/were not discussed in the classroom.
	7	The teachers wanted to explore many different concepts within their curriculum, but never had time because of what had to be taught.
	8	Teachers do not make connections between their views of futures and day-to-day classroom practices.
	9	Teachers assumed that what they teach is equipping students for the future. This changes when they develop futures capacities.
	10	Teachers assumed that the future would just occur. In this way, they perceived taken-for-granted futures in which they were powerless to make change.
	11	Teachers feel concerned about the responsibility which comes with greater futures consciousness. This becomes a moral dilemma as it is often a choice between responding and planning to curriculum documents, and doing what they perceive to be valuable in the lives of their students.
	12	Teachers perceived many barriers/inhibitors to explicitly addressing futures in curriculum.
	13	The teachers found it difficult to generate images of the future. They found it much easier to critique images which others had generated.

How can we empower and develop teachers' capacities to develop futures perspectives within pedagogy and curriculum?	14	Futures studies brings great anxiety at first because it is so unfamiliar.
	15	Futures consciousness is increased in abundance through explicit development of skills and conceptual understandings.
	16	Teachers enjoy the opportunity to learn alongside each other and other partners.
	17	Teachers respond to educational challenges when they are supported and have adequate resources.
How do futures perspectives transform teacher practice in learning environments?	18	Teachers felt inspired through the students' responses to futures education.
	19	The dynamic of student-teacher relationships shifts constantly through opportunities to engage in open-ended futures learning.
	20	Through an explicit futures education, the teachers enjoyed the opportunity to learn alongside their students and other partners.
	21	Explicit futures education changed the ways that teachers planned curriculum.
	22	Increased futures consciousness makes teachers reflect more critically about the ways in which school practices inform or contribute to possible futures scenarios.
	23	Students enthusiastically engage in futures education as they see connections between what they are learning in a classroom and their personal and collective lives. They are also interested in futures studies because they are keen to think about their future lives.
	24	Historical appreciation and knowledge becomes relevant to children when it is connected to their current and future lifeworlds.
	25	As children are able to move between temporal orientations, their understandings of the world broaden and deepen, as do their critical capacities.

### ***What is the role of a school in preparing students for their future?***

In previous chapters, I have foregrounded the notion that schools have a role in preparing students for their futures, which is well publicised within curriculum documents, as well as through media agencies. As highlighted in Chapter 2, some of the ways in which these claims can be identified are through 'schools of the future' programs (Schools of the Future Coordination Branch & Directorate of School Education, 1996) and similar 'lighthouse schools' initiatives (Coalition of Lighthouse Schools, 2003). There are many theorists who discuss the role of traditional Western models of schooling (Brint, 2006; Levin & Riffel, 1997; Pugach & Johnson,

2002; Senge, 2000). In most cases, these also claim a role in educating students for their futures. In this research, I have investigated the ways in which these teachers identify the school in regard to students' futures. There are four key findings in response to this question.

***Finding 1: All of the teachers suggested that schools prepared students for their future, but none of them were able to articulate what that future 'looked like'.***

When teachers discussed the role of the school broadly, they talked about it as the 'centre of the community' (Geri, PLT2, l. 144). They saw that in their particular context, it provided important resources for the families attached to the school, and also assisted their students to live in the wider community. For example, in this site, the library was shared between the school and its families. Another example was the large number of community resources which were used within the school in catering for the students from refugee backgrounds as they arrived from their countries of origin. hooks (2003) also talks about the school in this way, particularly with regard to Freirean notions of critical pedagogy (Freire, 2007).

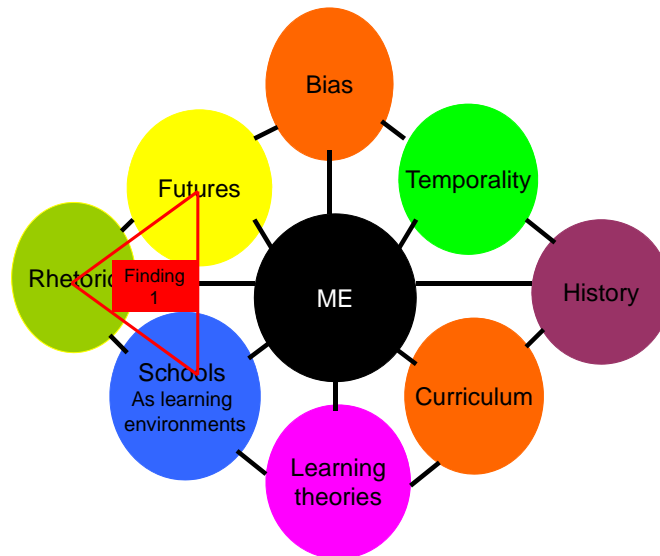
The teachers identified the role of the school as a 'place where learning will occur' (Esme, PLT1, l. 26). There were two different types of learning which the teachers predominantly spoke about. In the first instance, they highlighted the 'practical' learning which should occur. This referred to a student's abilities to recall and apply knowledge which had been explicitly developed through lessons in Maths and English, for example. This learning corresponds to the teachers' intended curriculum (Kress, 2000; Snyder, Bolin & Zumwalt, 1992). In the second instance, the teachers described the attributes of the 'idealised student'. This was described in Chapter 5 (see Figure 10 and Figure 11) where teachers listed the particular skills and capacities a student develops through schooling. These are developed inside and outside of the intended curriculum, and are often referred to as part of an incidental or hidden curriculum (Hill & Cole, 2001) These two views of the school as a place for learning remained throughout the project. From the perspectives of these teachers, a child's ability to learn could be seen through their success in 'measurable curriculum' (Fuchs & Fuchs, 2002).

In thinking about the ways in which the school developed specific attributes of the learner, these teachers saw it as a place which fostered thinking skills and had an imperative to develop

skills in critical and creative thought. They also believed that education was the way in which learners could develop imagination, and the ability to problem-solve. They noted the importance of nurturing children who were actively inquiring about their world and seeking the relevant answers. Teachers considered that the school should develop autonomous and independent learners with a love of learning which continues through their lives. They often made illustrative comments such as ‘I think school should be like an artist. Plain canvas, you have your paints, you have your brushes, you have all your stuff there, it’s up to you how you use it’ (TIMB, l. 77-79).

The teachers saw that the practical learning and attributes of the learner which they tied to the role of the school were ‘often at odds with one another’ (Esme, PDFG2, l. 124). Developing the person and developing knowledge were often seen as competing forces within the daily lives of schools. If the role of the school was to develop deep thinkers, for example, it was often compromised by the limited time which was available to participate in deep and extended studies. The teachers often commented that what they would like to be doing with the students was not possible due to the constraints of testing, standards and accountability which did not take into account the individual contexts of each school. These debates are also reflected in the work by Gonzalez, Moll and Amanti (2005) as well as Thomson (2002) and Kress (2000) who are concerned with the ways in which schools cater for their learners. They question whether schools should focus upon the learning interests of the specific children within a particular context, or whether in fact they should continue to emphasise what students lack in terms of knowledge sanctioned by schools.

The role of a school, for these teachers, was to provide opportunities which enabled their students to ‘participate in life more fully’ (Jennie, PLT2, l. 57). Schooling, according to this group, enabled students to live successfully and was the first site of belonging, outside of the home. It was a place for exploration where learners should be ‘trying out the world from different perspectives’. The teachers recognised various classroom practices which supported this claim. They described local shopping trips and walks around the local neighbourhood. In this school, specifically, they highlighted the project based learning which actively positioned the students to interact within authentic world-like experiences.



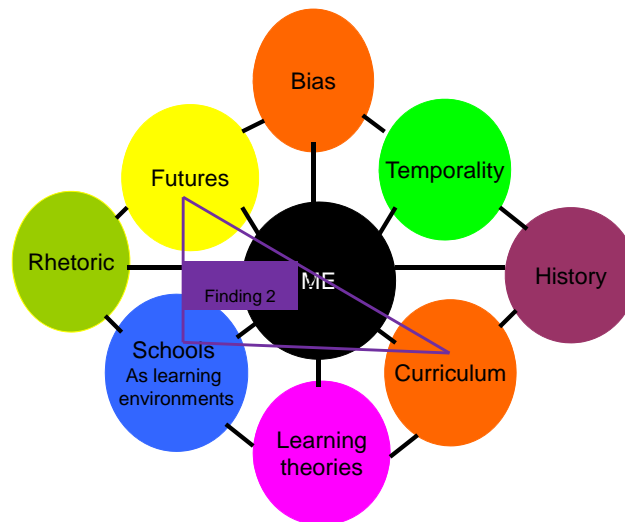
**Figure 38 – Interplay of concepts – Finding 1**

In the interplay between the concepts futures, schools and rhetoric (see Figure 38), the teachers were unable at the outset to articulate the type of futures for which they were educating students. They assumed that a student’s enrolment within a school ‘prepares them for whatever futures will happen’ (Mary, PDFG1, l. 766). The teachers had not thought about the specific types of futures which were possible. In this way, education for a future was largely taken-for-granted (Gough, 1990).

***Finding 2: The teachers were all able to recall various claims of curriculum documents which posit schools as ‘agents of the future’.***

From the outset of this research, the teachers were quite adamant that the role of the school was to prepare students for the future and referred to curriculum documents and other materials which also made these claims. As one queried, ‘If we don’t prepare students for the future, who does?’ (Geri, PDFG2, l. 421). The teachers were able to locate claims within the VELS document which linked the curriculum to the future. These claims were situated within the preface, but the teachers were unable to locate explicit links to topics of learning which were futures-oriented. Initially, the teachers assumed that because these were the claims of the curriculum documents and other sources, that this was what was occurring. In Chapter 2, I referred to Gough’s (1990) work which claimed that futures in curriculum could be described as tacit, token or taken-for-granted. Similarly, Hicks (2002) identified futures as the missing dimension in education.

In this research, the teachers assumed the ‘future would just occur’ (Anessa, PDFG1, l. 221), which is what Toffler (1970) referred to as assumed futures. Similarly, they assumed that everything they teach equips students for some type of future. This can be linked to the theorising of Bruner who suggested that the first object of any learning is that it serves us in the future (Good, 1995, p. 25). Specifically, they asserted that schools prepared students for the future by teaching them to read and write. They also claimed that specific knowledge assisted them to function within the future. For example, Geri claimed that the ‘maths curriculum helped students to be able to shop, manage accounts and become tradies’ (PLT2, l. 454).



**Figure 39 – Interplay of concepts – Finding 2**

In the interplay between the concepts futures, schools and curriculum (see Figure 39), notions of the future were manipulated to fit the curriculum, as opposed to generating curriculum which would explicitly address the possibilities of multiple futures. As discussed in the previous chapters, there were assumptions which these teachers made about educating for the future. In Chapter 3, I linked a number of these assumptions to Inayatullah’s concept of used futures (2006a) where curriculum is designed to meet a future which has already occurred as the past. In this research I suggest that, in assuming replications of the past, education does a major disservice to future generations. Toffler (1974) made these claims previously.

***Finding 3: In retrospect, the teachers realised how little schools actually encouraged thinking about the future.***

With increasing futures consciousness, the teachers became more aware of the disjuncture between the rhetoric of preparing students for the future, and the ways in which schools did not explicitly address these claims (Gidley, Bateman & Smith, 2004; Slaughter, 2002b). One reflected upon her own experiences as a secondary teacher, and the limited opportunities the students had had to think about the future:

Look, you often have secondary school students who never get an opportunity to really discuss or think about their own future. It's all rushed upon them in the final years of schooling and everyone's in a panic and course advisors are overworked, and all of a sudden the future is there and they have to think about it. That in itself is a decent reason to do more of this stuff (TIJV, l. 444-451).

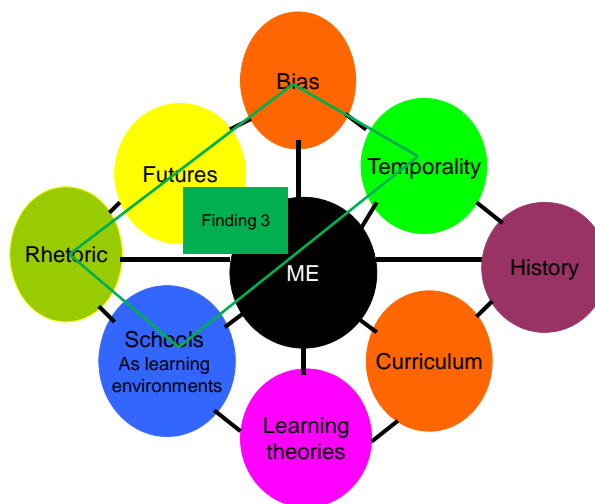
Increasingly, as the project unfolded, the teachers believed that the school has a significant role in educating for the futures. As Masini (2006), Slaughter and Inayatullah (2000) and Gough (1990) would concur, these teachers had become more critical in the ways they were working in the futures domain. They had moved beyond the pop-futures and tacit and token futures which had previously informed their reasons for thinking about the future. In the beginning, the teachers made broad and speculative comments about the future, such as:

I think the world is changing at a very rapid pace (Geri, PDFG1, l. 79)

and:

Technologies are passing incredibly quickly. And I think we all need to be prepared. We all need to be sort of able to join it in some point in time. So I think it's a very, very important factor in the school (TIPK, l. 366-341).

Towards the project's end, the teachers were deconstructing such comments and thinking about the ways in which schools could understand these changes. They also 'felt more in control' in the ways they could develop curriculum which would scaffold students' entries into these possible futures (TIMB, l. 23). In this, they also recognised the increasing tensions between addressing the state requirements for education, in contrast to providing 'a real education for many futures' (Penny, PLT8, l. 96). In this way, the role of the school in educating for the future became problematic. Bussey, Inayatullah and Milojevic (2008) describe current attitudes to futures within education in the same way.



**Figure 40 – Interplay of concepts – Finding 3**

In the interplay between the concepts futures, bias, temporality, schools and rhetoric (see Figure 40), the teachers grappled with the school’s role in educating for the future and were often ‘shocked that they had not thought about this more’ (Jennie, PLT8, l. 234). At the conclusion of this research, it was clear that their thinking was explicitly futures focused and informed by their experiences and professional learning. Whilst previously the teachers had ‘just assumed’ that the school did prepare students for a future, they were now more critical in the ways this intent was achieved, or could be addressed through classroom practices.

The teachers often commented that they had never engaged in such futures based thinking in their professional experiences. They enjoyed the opportunities to discuss futures in education and to bring ‘these ideas to life in the classroom’. These opportunities had been ‘worthwhile’ and ‘added a whole new agenda’ to the ways in which they worked. Sadly, there is a distinct lack of research in this area, and the rhetoric around the role of a school in educating for the future remains rife. One teacher represented the group’s thinking in claiming that:

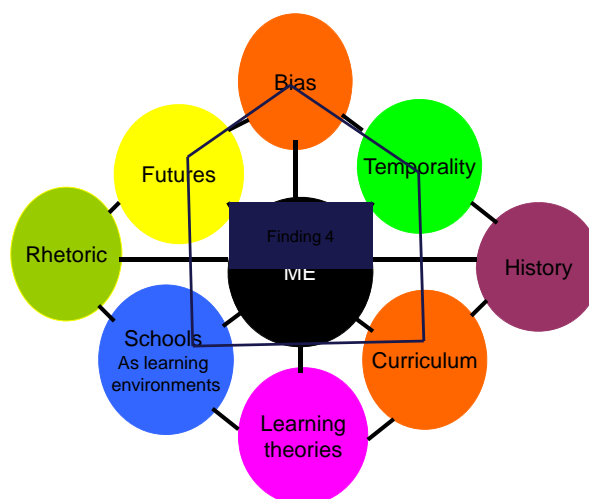
We’ve always been told that our kids will be doing jobs that aren’t around now, but we never guess at what these jobs are, or what the kids will need to be able to do. Schools have to prepare students for many futures outside of work, too. Education really rips kids off ... without the future in it (Mary, PLT7, l. 778-782).

***Finding 4: Australian curriculum is temporally biased towards the past. In this, schools limit a student’s capacity to see him or herself as a person who is able to actively contribute to visioning and enacting preferred futures scenarios.***



My exploration of Australian curriculum documents has led to a number of claims which can be revisited in Chapter 3. Of particular interest is the claim that curriculum is temporally biased. In Chapter 2, I defined temporality as a person’s ability to conceptualise time (Bash, 2000; Fuchs, 2005). Further, I described time perspectives as the ways in which we orient our temporal thinking and specifically focus on past, present and future (Bateman & Harris, 2008; Flaherty & Fine, 2001). I have highlighted the ways in which conceptual and functional time are developed within schooling. Functional time was explicitly linked to the maths curriculum, and conceptual time to the teaching of history. There is a distinct lack of explicit FTP within curriculum which contributes to the bias which occurs.

I have argued that, in order to create a stronger temporal balance, FTP must be increasingly incorporated into classroom practices alongside and integrated with these historical literacies. Moreover, I suggest that in coining the phrase ‘temporal mobility’ I am pushing educators to think more overtly about the capacities which learners require in order to move between temporal frames. To support this argument, I engaged with literature which explored the ways that temporal capacities are developed within people (Crepault & Nguyen-Xuan, 1990; Fraisse, 1982; Harner, 1982). As much of the key research had been undertaken in this area some time ago, I flagged the need for further and more current research in this area.



**Figure 41 – Interplay of concepts – Finding 4**

In the interplay between the concepts futures, bias, temporality, curriculum and schools (see Figure 41), there is much potential for further exploration of FTP within school practices to

shift the temporal bias which is currently present. Along with Hicks (2008) and Rogers (1998), I claim that explicit futures education provides students with greater access to their futures. In increasing a student's futures consciousness, and in equipping him or her with critical futures tools and concepts (Slaughter, 1995b, 1996), education empowers a student to make critical choices which connect personal, local and global futures possibilities (Jones, 1998). Without these futures capacities, governments and other powerful agencies (Freire, 2005; hooks, 1994) within culture and societies continue to colonise futures (Inayatullah, 2006b). Thus, in developing such capacities it is important to consider the perceptions teachers hold in regard to their and others' futures.

***How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?***

In this research, I examined the ways that six teachers at Wooranna Park Primary School thought about their own futures and about their roles in educating students for their futures. I was interested in the ways that teachers enacted their futures perspectives in the everyday experiences within a classroom. My initial claims in this project led with the idea that teachers did not explicitly link their practices within the classroom to their thinking about the future, regardless of the rhetoric which surrounded curriculum documents and the role of schools. In this research, I have collected data which provides insight into teacher views of the future, and further encouraged the teachers to reflect upon their practices to identify ways in which their curriculum explicitly develops notions of the future, or more specifically develops capacities 'for the future'. There are nine key findings which arise from this group of questions around teachers' perceptions about the future.

***Finding 5: Even though the teachers connected the role of a school to ideas of the future, none of them talked about their teaching in the school from a futures perspective. Each talked about their roles in stimulating and supporting learning.***

According to McGee and Fraser (2008, p. 48), “teaching is both a science *and* an art and effective teachers blend both in ways that transcend a narrow techno-rational (rules and routines) approach to stir the mind, heart and soul”. In this study, the teachers were primarily concerned with the ways in which they interacted with students to produce learning outcomes. They considered their roles and expertise as ‘generators of knowledge’, and ‘mediators of students’ understandings of the world’. The teachers also recognised ‘other roles’ outside of this learning context, including pastoral care, emotional support and as ‘critical friend’. They achieved this, they reflected, through the diverse range of experiences they provided through their curriculum and school interactions with the students.

Teachers in this study characteristically performed a wide range of activities subsumed under the general heading of ‘teaching’. These include planning and designing, demonstrating, guiding, telling, questioning, testing, recording, motivating, criticising and learning (Dowling, 2003). In this setting, they described themselves as mentors and facilitators, in guiding students through various ‘learning journeys’ (TIEC, l. 46). Drawing upon the Reggio Emilia philosophy, emphasised by the school setting, and previously discussed in Chapter 3, two also referred to themselves as ‘protagonists’:

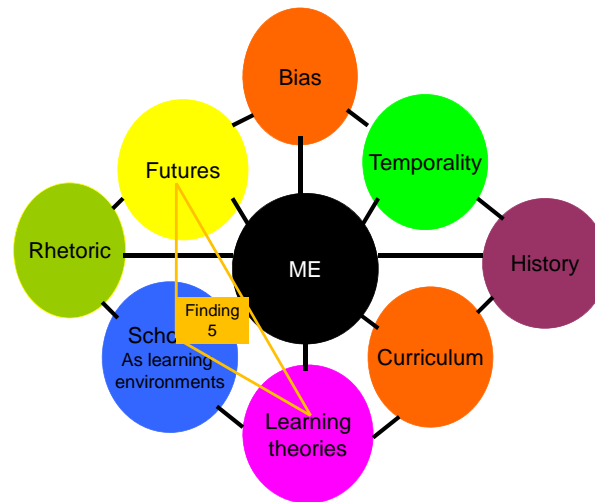
Sometimes, I provide problems for my students to resolve. I think of my role as like a board ... someone they can bounce off, and each time they revisit the board there is new learning, or new directions for how the task can be finished (Mary, PDFG2, l. 425-428).

There was little talk regarding specific competencies that could/should be developed as a result of the teachers’ teaching. Only two of the teachers specifically aligned their roles to the development of subject knowledge. The first teacher’s background was as a secondary English teacher, and she was passionate about students’ exposure to wide ranges of text:

My role is to nurture a love of literature which will develop readers who will always read. And, if you can read, you can always get new information (Jennie, PDFG, l.576-578).

The second teacher, similarly came from a secondary Maths/Science background:

Science helps students to make sense of anything in their world. They need to know that it’s not only for a particular group of society. The whole future is based on scientific discovery ... just look at the past (Penny, TIPK, l. 662-667).



**Figure 42 – Interplay of concepts – Finding 5**

In the interplay between the concepts futures, schools and learning (see Figure 42), there is much work to be done in increasing the connections between these concepts within school practices. In early stages of this study, regardless of the ways teachers described a school’s role in educating for the future, they saw their own roles as responding to the particular students in their classrooms, anchored within the context of the present. Whereas the school experiences broadly provided students with skills and capacities for the future, they did not link their specific classroom practices to these broad agendas. Geri exemplified this idea in saying ‘I can’t think about these kids and the future until I’m up to date in what I’m meant to be doing now’ (PDFG1, l. 98-99). Whilst I cannot claim generalisability of this study, I would suggest that other teachers would respond in similar ways.

As highlighted in Chapter 3, this school claimed a commitment to Reggio Emilia philosophy. I suggest that it was not until the teachers were immersed within this experience through PD and PLT that they truly understood what it meant to be a ‘co-learner’ or facilitate student directed learning. Through the utilisation of futures concepts and skills, the content of curriculum and pedagogies enacted within the classroom became more relevant to students’ lives and curiosities.

***Finding 6: Even though the teachers connected their role to helping students to understand their worlds better, and to participate as active citizens, there were many aspects of the students’ lives which could not be/were not discussed in the classroom.***

Wooranna Park Primary School is firmly committed to providing ‘authentic experiences in student learning’ (Trotter, 2005). This is reflected within the Raison D’etre (see Appendix 7) which was referred to in Chapter 3 as the ‘pedagogical frameworks in which the school operates’ (Esme, PDFG1, 1134). The teachers draw upon a Reggio Emilia philosophy of education which also advocates strong connections and partnerships between the classroom, curriculum and communities (Ardzejwska & Coutts, 2004; Edwards, 1993). Teachers stressed the ‘need to make learning relevant and real’ for their students (TIAQ, l. 234). They considered this especially important ‘given the backgrounds that some of these kids come from’ (Mary, PDFG1, l. 442-443) and ‘the fact that some of these kids won’t be at school longer than they have to’ (Penny, PLT3, l. 934-936).

Throughout this study, the teachers described the many ways in which their curriculum and other school-based experiences provided the students with ‘ways to understand their world better’ (Anessa, PDFG1, l. 633):

Where there is a chance to help the students to make sense of what is happening around them, we try and build that into our independent learning times as much as possible. I spend a lot of my homeroom time just talking about what is happening with these kids and their families (TIMB, l. 43-46).

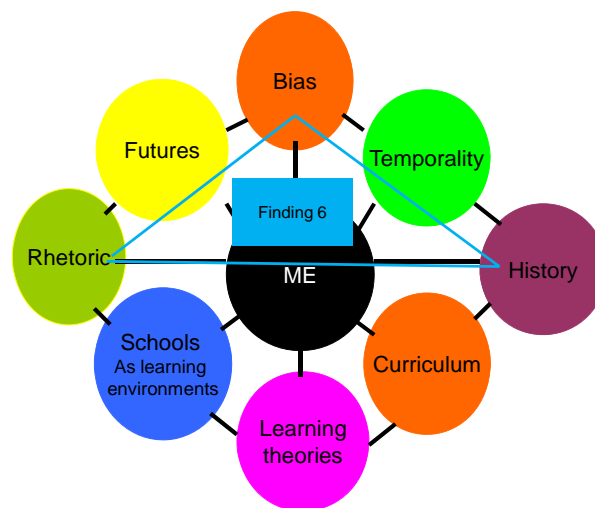
As described in Chapters 5 and 6, the teachers outlined ways that their curriculum assisted students to operate within their worlds. Within the school, ‘real-life experiences are simulated’ (TIEC, l. 122-124), and in other instances, the wider community ‘is invited to take part in the children’s learning’ (Esme, PDFG4, l. 723). An example provided was a multicultural festival which the school had hosted. The students’ participation in external competitions was another way in which learning connected classroom experiences to lifeworld understandings. Competitions included the Science Talent Search and the Wakakirri National Story Festival.<sup>61</sup> However, whilst providing rich, relevant and authentic curriculum, there were a number of

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<sup>61</sup> The Science Talent Search is an annual competition for primary and secondary students organised by the Science Teachers’ Association of Victoria. Wakakirri is a performing and visual arts festival created specifically for primary schools. It aims to teach students about themselves and others through the creation and sharing of stories, challenging them to create a story, make a positive impact and share it with Australia.

subjects or points of interest which were considered highly problematic within these students' lives and not addressed within curriculum.

Chapters 5 and 6 looked at the ways that teachers considered some topics 'taboo' as they arose in discussions about possible futures investigations within the classroom curriculum. For example, they were very concerned about the topic of religion, for fear of parents' perceptions and possible actions. In some instances, the teachers described how particular children could not participate in activities as the content was 'not seen an appropriate by his parents' (Anessa, PLT3, l. 55). The study of the future, itself, initially was considered 'worrisome' in presenting information to the parents about what the children would be learning (Geri, PLT1, l. 33).



**Figure 43 – Interplay of concepts – Finding 6**

In the interplay between the concepts rhetoric, bias and histories (see Figure 43), teachers' perceptions of the student context influence the ways in which they do and do not engage with futures education and other curriculum (Hargreaves, 2000b; Moore et al., 2002; Roeser, Eccles & Sameroff, 2000). Within this study, there were teachers' perceptions of parental resistance to openly discussing aspects of children's home lives, for example, religious affiliations, and of parental hypersensitivity to what the teachers deemed as 'controversial issues' such as futures education. The teachers' perceptions of students' bounded conceptions of the future were also present, and entrenched within classed and milieu practices of what is typically done within schooling and what might be expected (Anyon, 2006). All of these are teachers' perceptions and may not reflect the actual views of parents, but they drive the ways in which teachers enact

futures education. As a result of these perceptions, futures studies is omitted from the classroom practices, thus again making the futures purposes of the school rhetoric.

***Finding 7: The teachers wanted to explore many different concepts within their curriculum, but never had time because of what had to be taught.***

Within this study, teachers often commented that there was ‘never enough time’ to ‘fit everything within the curriculum’ (Mary, PLT3, l. 622; Geri, PDFG4, l. 458). In part, this is due to what is often referred to as the crowded curriculum (Crump, 2005), that is, the pressures which teachers face in responding to mandated curriculum documents as well as any other local demands driven by policies or events within the school context and within the confines of its timetable and resources. The teachers experienced this pressure in a number of ways.

As an innovative school, the teachers were expected to work in creative ways, whilst attaining ‘good results in testing and student learning’ (Esme, PLT3, l. 349-351) and to maintain a status as an exemplar to other schools as a site of good practice. As the winners of prestigious curriculum awards (2007 Garth Boomer Award – Australian Curriculum Studies Association), the staff and students often played host to other school staffs and students, both locally and internationally. As the ‘owners’ of rich and sophisticated technologies, the teachers through curriculum were encouraged to produce multimodal representations of student learning (Cope & Kalantzis, 1999) and documentation which would make their learning visible (Kroeger & Cardy, 2006). In providing the rich and authentic experiences for students, which were described earlier, and in competing in external academic programs, these teachers had little time or space to think creatively about different ways of working or to implement particular learning (Geri, PLT2, l. 238-239):

In some ways, we’re overcommitted before we even start thinking about running the classroom. Even if I thought there was a better way, or I could do important things like you’ve taught us ... do you have any idea how hard that would be? Because we’re already doing different things, it makes us even more accountable ... and in some ways it locks us in even further to what we do.

This is reminiscent of an observation Slaughter (2004a) makes in theorising why it is so difficult for teachers to transform educational practices to include more explicit futures studies:

Typically, there is a minister at the top; teachers and students are at the bottom – not unlike a 19th century army. The ‘meat in the sandwich’ is a layer of bureaucracy that must at all times obey prevailing political priorities. Teachers and students remind one of marginalized, disempowered ‘foot soldiers’ (p. 195).

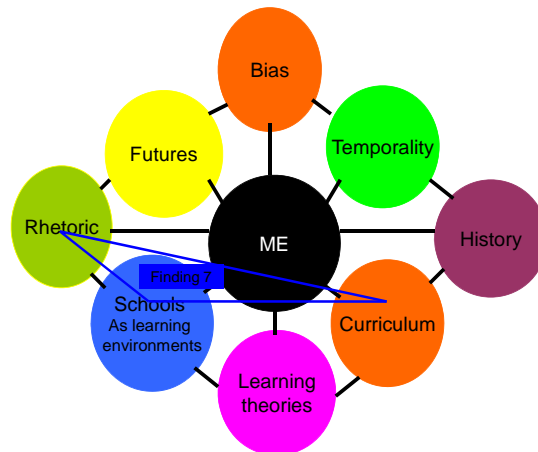


Figure 44 – Interplay of concepts – Finding 7

In the interplay between the concepts schools, curriculum and rhetoric (see Figure 44), the perceived control of curriculum from outside the site (Helsby & McCulloch, 1996) inhibits the practices and agendas for curriculum and learning within the site. Whereas teachers often identify learning, such as futures education, which is potentially meaningful and empowering to their students (Bateman & Quirit, 2006), their practices are inhibited by the ongoing and competing demands of everyday school life (Crump, 2005) within the context of their particular site and the specific group of learners (Brown & Campione, 2002).

***Finding 8: Teachers do not make connections between their views of futures and day-to-day classroom practices.***

As highlighted in Finding 1, the teachers clearly identified the school as having a role in ‘educating for the future’. Previously, I claimed that even though this was the case, they did not see their role as explicitly futures-oriented. Moreover, there was a clear disjunct in the ways they thought about their personal futures in relation to broader notions of futures, and specifically in connecting their futures perspectives to their practices within the classroom.

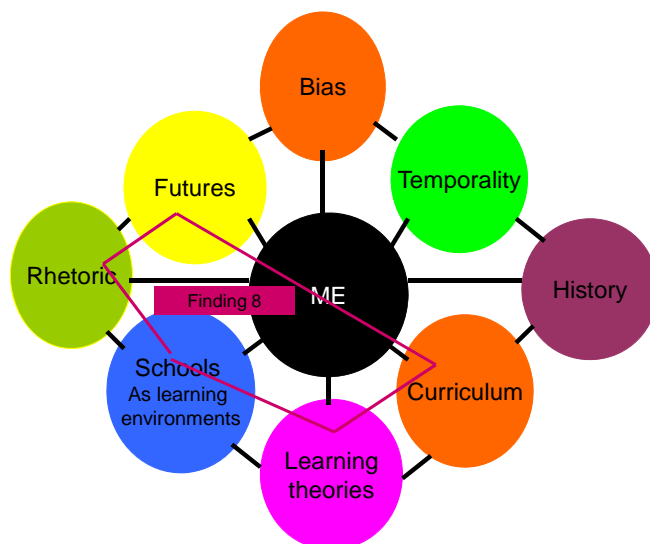


Interestingly, the teachers all assumed that the other teachers thought about ‘the future in the same ways as I did’ (TIJV, l. 111).

In Chapter 1, I described the various frames through which we later examined futures through personal, local and global futures (Slaughter, 1996). In Chapter 5, I described the ways in which teachers discussed their images of the future. Individual teachers were able to identify some events which could occur in their personal future, and similarly, the teachers each identified things which would occur locally and globally. Often, in this study, the event which was identified would remain there as an isolated occurrence. In this, the teachers did not see the ways that each of their futures images would work alongside the images of someone else. This highlights the complexity of futures thinking (Shackley, Wynne & Waterton, 1996).

In one session, for example, the teachers were reflecting upon student work (PLT7). Previously they had concurred that families could take many shapes and forms but effectively the ‘essence of a family’ would remain unchanged (PLT2, l. 454), that is, ‘providing a safe place for children to grow into independent people –emotionally, physically, cognitively and spiritually’ (Geri, PLT2, l. 384-385). In the work sample the teachers then focused on, the student had suggested that people would live in homogenous talent based groups in the future, and it would be their talents which were nurtured for the benefit of society, as opposed to the nurturing of the person. In this futures scenario, the family was no longer seen as the prime carer and foundation for the child in the world. In their interrogation of this student’s ideas, the teachers saw the different ways that the different futures frames interacted:

These students aren’t thinking the way I thought they would. I thought you all thought the same as well. I don’t like the way some of you are thinking. If your future is right, it will affect all the rest of our futures. My future isn’t really only my future, is it? ... I mean I can think what I want about my future, but what if the world’s future doesn’t work with it (Penny, PLT7, l. 560-566).



**Figure 45 – Interplay of concepts – Finding 8**

In the interplay between the concepts of futures, rhetoric, curriculum, learning theories and schools as learning environments (see Figure 45), the teachers lack the temporality required to explicitly embed futures thinking within curriculum and classroom practices more broadly. Thinking around these concepts remains quite fragmented and, until temporality is integrated, much rhetoric remains within the notion of educating for a future. In this study, it was clear that teachers were able to ‘talk about the future’, particularly with the scaffold of the formal PD. I claim through these findings that teacher capacities to enact and integrate these futures perspectives are not realised until increased consciousness of temporality is also developed.

***Finding 9: Teachers assumed that what they teach is equipping students for the future. This changes when they develop futures capacities.***

There were many instances in the professional discussions of the teachers where references to the future were made in regard to their roles. These arose alongside conversations about learning ‘which was connected to the world’ or in regard to ‘making sense of the world’. I have referred to this in earlier findings and throughout the previous chapters. I have already suggested that these teachers assumed that providing knowledge about the current world for these students was equal to educating for the future. This is another example of the ways that futures thinking is taken for granted (Gough, 1990) or assumed (Inayatullah, Bussey & Milojevic, 2006). As implied in the previous finding, these teachers lacked futures consciousness with regard to education at the outset of this project. This changed as the project developed. When

asked at the outset about the role of a teacher with the regard to the future of the student, a common response was:

I've never really thought about it ... I'm more of a day-to-day person, and the future just seems too far away. It's hard enough dealing with keeping up with what is expected without getting ahead of ourselves (Geri, PLT3, l. 234-237)

or:

I do have to equip students for the future, that's my job as a teacher. I've never thought about the actual future, though ... [laughs] ... That makes our job seem a bit more complicated, doesn't it? (Penny, PLT3, l. 666-669).

As a result of increasing the teachers' futures consciousness, this changed. They became more critical of the ways they interpreted and enacted curriculum, and articulated their roles, with regard to the future. With increased futures consciousness they reconsidered the content of curriculum through the lenses of 'what future was assumed in teaching this stuff' (TIPK, l. 438-439). At the conclusion of the PD sessions and the PLTs, teachers noted that once they became 'aware of the future, I notice it everywhere. It's like someone turned on a futures switch' (Mary, PLT8, l. 387-388).

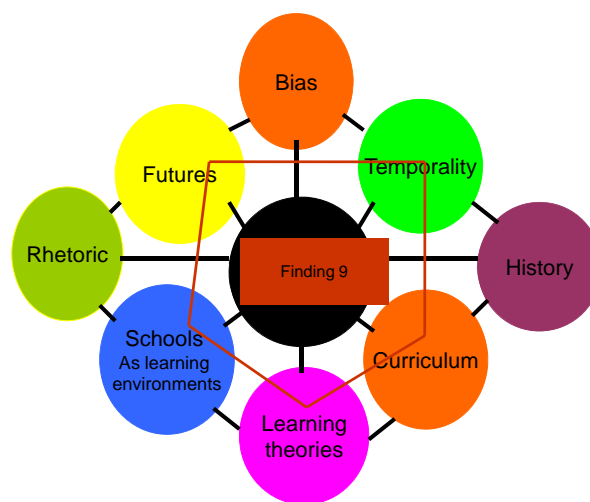


Figure 46 – Interplay of concepts – Finding 9

This interplay of futures, temporality, curriculum, learning theories and schools as learning environments presents this study with a representation of transformation of teachers' changing perceptions of the interactions and co-emergences which occurred within their involvement in this process. In this instance, I argue that the teachers have experienced an awakening of the

mind, theorised in Chapter 3 as futures embodied through the works of Rogers (1998). This particular representation is one of two diagrams which have been repeated for different findings within this thesis. This is important, and will be revisited later in this chapter.

***Finding 10: Teachers assumed that the future would just occur. In this way, they perceived taken-for-granted futures in which they were powerless to make change.***

I have already described the ways in which teachers have taken the future for granted. More specifically, in this study, the teachers assumed that the future would ‘just occur as it always had’ (Geri, PDFG2, l. 289). This was reminiscent of Tarnas’ (1988) paradigmatic description of the heliocentric worldview, dominated by religious thinking (Koltko-Rivera, 2004). Just as people believed that God would reveal himself during that time, these teachers were positioned ‘waiting to see what will happen in the future’ (Penny, TIPK, l. 48-49) – when the future is revealed. In this position, a person is indeed powerless to participate within and contribute to shaping various layers of futures.

As the PD sessions drew to a close (Chapter 5) and the PLT commenced (Chapter 6), the teachers were anxious about the ways they would ‘teach about the future’ (Esme, PDFG1, l. 12). The reader might recall the questions they asked in regard to starting points for classroom discussions and activities to commence curriculum development. The questions, such as ‘do we just ask them what they think of the future?’ (Mary, PLT1, l. 127), appeared quite simplistic, but in this study serve to highlight the limited futures thinking teachers have undertaken, and the alienness of explicitly addressing futures thinking within curriculum.

The teachers were concerned about how they would ‘deal with things which might come up, and make the future pretty bleak to the kids’ (Penny, PLT2, l. 444-445). They were also concerned about the negative images that some of these students had, and how these could be ‘avoided in the classroom for everyone else’ (Geri, PLT1, l. 862-863). In some instances, the teachers were limited by the assumptions they held about student futures, which in many ways reproduced the ‘hopeless feelings some of our kids have ... you only have to see where they come from’ (TIGP, l. 48-50). After many of our early sessions together, I noted in my journal the ways that the teachers ‘almost perceived the future doing things to them’ (FNPDFG3, p. 17) or

in other instances ‘merely waiting for the future to arrive’ (FNPLT2, p. 13). From phrases such as these, the teachers and their students were positioned as passive, and the future as active. It was a repressive force to be feared, in its unknown shape – inaccessible, looming and unfamiliar. This was interesting as a counterpoint to other descriptions of a future which will replicate the past. This notion of competing futures perspectives, or futures in counterpoint within a person’s thinking, might form the basis of future research in this area.

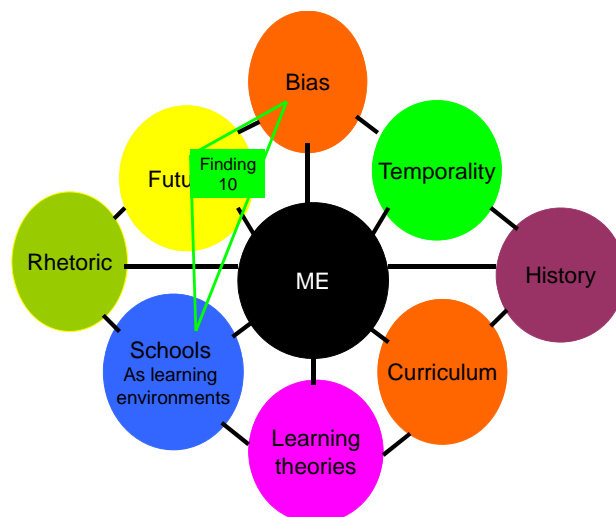


Figure 47 – Interplay of concepts – Finding 10

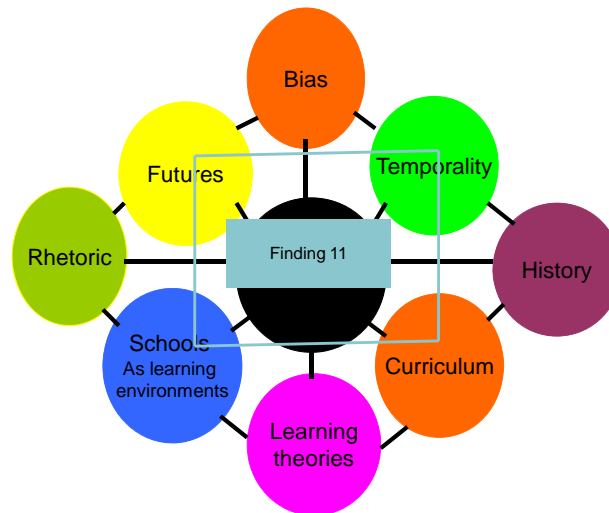
In the interplay between the concepts futures and schools, where teachers have not met explicit futures perspectives, there remains much temporal bias in curriculum. Moreover, without disrupting apparent conceptions of the futures, people continue to remain passive in their participation in, and consideration of, possible and preferable futures. As described in Chapter 1, there is much literature, about the images of the future (Hicks, 1996b; Hutchinson, 1998; Tepperman & Curtis, 1997), and these demonstrate the negative views pre-empted by the teachers (Morgan, 2002). Of particular interest was their lack of insight into the possibilities for addressing some of the students’ perceptions and challenging them through their curriculum (Gidley, Bateman & Smith, 2004; Hicks, 1998, 2008). This became more apparent to the teachers as their students engaged with futures ideas within their classroom (Rogers, 1998).

***Finding 11: Teachers feel concerned about the responsibility which comes with greater futures consciousness. This becomes a moral dilemma as it is often a choice between responding and planning to curriculum documents, and doing what they perceive to be valuable in the lives of their students.***

As the teachers' futures consciousness increased, they felt 'anxiety' and 'concern' about their responsibility in educating for the future (TIPK, I. 127-129). They became more critical in the ways they thought about the curriculum they developed within the learning spaces, as a result of the new futures lens. They realised that the curriculum being taught did not explicitly link to any specific notions of the future:

This is like a moral dilemma, now. We have to teach what is written in the curriculum documents so that the students demonstrate what is meant to be learned ... but we're also meant to be educating for the future. The futures stuff is really important for these kids. They [curriculum and futures perspectives] are not the same things. How do you decide which one to do? (Jennie, PLT8, 335-342).

The teachers became aware of the 'power' associated with the curriculum choices they made (Jennie, PLT8, I. 283). There has been much written about the moral dimensions of teaching practices, particularly with the regard to curriculum choices (Buzzelli & Johnston, 2002; Davis & Sumara, 2003; Reid, 2007). As a result of this study, I suggest that some of this dilemma could be reduced by curriculum writers being more attentive to the claims and roles of education. In auditing the standards and outcomes through a lens such as futures, it becomes apparent that such an important dimension of education becomes another add-on, when in fact, as these teachers experienced, it is an essential learning. It was the added lens of futures through which these teachers viewed their practices which made them reflect on 'what we do, why we do it and how we do it' (TIAQ, I. 106-108), which is also the critical dimension of this study.



**Figure 48 – Interplay of concepts – Finding 11**

It is interesting that, within this finding, we return to same interplay of central concepts with which this study began (see Figure 1 and Figure 33). In some respects, I argue that this finding further reinforces the ‘gap’ in knowledge within this area. Whilst Slaughter (2002b) and others (Gidley, Bateman & Smith, 2004; Hicks, 2008; Milojevic, 2005) talk about teachers’ anxieties in futures education, theoretically, there is a distinct lack of empirical studies which describe teachers’ practices in this area. Whilst this deficit exists, Gough’s (1990) claims that futures education is at best tacit, token or taken-for-granted continue to be realised.

***Finding 12: Teachers perceived many barriers/inhibitors to explicitly addressing futures in curriculum.***

In earlier discussion within this chapter, I described the ways that teachers did not feel able to address some areas of students’ lifeworlds within the classroom (see Finding 6). I have also highlighted the inability to incorporate ‘extra’ dimensions of curriculum due to their perceived lack of time and space (see Finding 7). Teachers also perceived some of these same aspects as barriers to explicitly teaching futures perspectives within the curriculum. I will not revisit these ideas here, but highlight other dimensions of the classroom/school practices which teachers also identified as inhibitors to their practice. These were resources, cultural practices and religious beliefs and the students’ abilities to think about the future.

Resources were one of the limitations teachers noted. As seen in my introduction to the school (see Chapter 3), these teachers are innovative and resourceful people. They draw upon a

range of sources to provide stimulus and provocation for learning, in line with the Reggio philosophy (Abramson, 1995; Forman, 1996) The reader might recall early PD sessions where teachers began to identify resources they might use in developing a futures curriculum. In these instances, the teachers noted that ‘the future’ in film and television media is rated beyond a ‘general’ viewing audience. Similarly, many of the books which had been identified were beyond the reading abilities of the students within this context. In subsequent PLTs the teachers sought information based texts which would inform students’ independent inquiries on topics such as nano-technologies and robotics in our world, and often remarked that ‘translating these materials in a way which the children will understand is nearly killing me’ (Penny, PLT6, l. 533-534). The teachers experienced significant frustration that there were not sufficient curriculum support materials in this area. There are others (Lee & Butler, 2003; New London Group, 1996; Unsworth, 2001) who have identified similar challenges within their research.

The second barrier teachers perceived was the notions of futures which were interpreted differently between different cultural groups and religions. At the beginning of the PLTs, regardless of the previous PD sessions, the teachers assumed that everyone thought about the future in the same way. In this regard, I am not talking about the images of the future which students held, but their actual conceptualisation of time itself. The reader will recall the lengthy discussions regarding time perspectives and temporality, through literature (see Chapters 2 and 3). I alerted the reader, and the teachers, that there is difference in the way that different cultures thought about time (Bateman & Harris, 2008; Kauffman & Husman, 2004). In this study, there were two main things which occurred with regard to futures, religion and culture. In the first instance, the teachers found it difficult to understand the circular ways that some of their students thought about time:

It is as if they don’t see a difference between the past, present and the future ... as if everything just keeps going round and round ... they don’t get it ... or maybe I don’t get it  
(Mary, email communication).

Secondly, the teachers were concerned with the ways the notion of the future was often linked to the students’ mortality:

They often say things like ‘we’ll all die’ or ‘the world will end’ ... and that’s not really a problem. The problem comes when they start adding things to their future like ‘I’ll be born

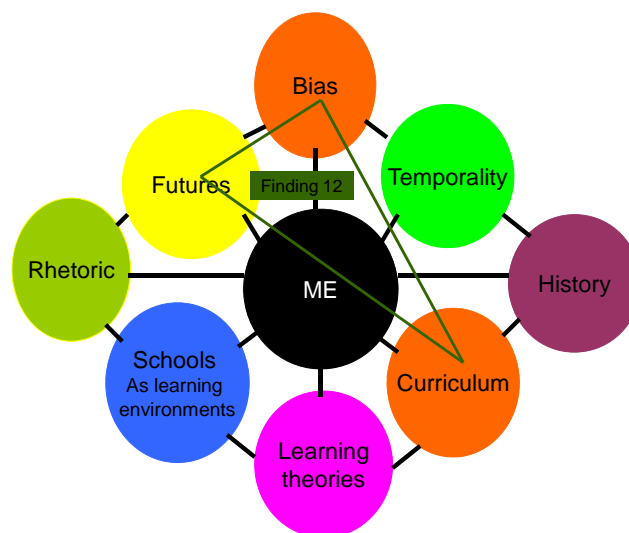


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again as a doctor' ... and you know, not everyone thinks like that ... and is being born again part of their future? (Jennie, PLT2, l. 782-786).

The perceived barrier or inhibitor in these instances is the ways in which teachers equate differences as deficits within the classroom (Wolfram, Adger & Christian, 1999). Through the PLTs, we were able to identify ways that these differences in fact enhanced our curriculum and broadened students understandings and acceptances of diversity within their school, community and the world.

Finally, the teachers were in many instances bounded by their anticipation of the ways in which students would engage with futures thinking. In this study, prior to the introduction of futures into the classroom, they forecasted that 'the students will find this very hard ... If we don't get it, how will they?' (Mary, PDFG2, l. 79). As will be discussed subsequently, there were assumptions made about the students' abilities to deal with the complexities of this unknown curriculum adventure. I suggest that these were based upon the teachers' own feelings of inadequacy, and an arrogance (Smith, 2004) which positions teachers as knowledge providers rather than as partners in learning (Brownell et al., 2006; Darling-Hammond, 1999; Shulman & Shulman, 2004).



**Figure 49 – Interplay of concepts – Finding 12**

Within the interplay of the concepts futures and curriculum, the teachers identified many obstacles which they perceived as barriers to teaching futures perspectives within curriculum.

As highlighted in a previous finding, the teachers' perceptions enabled the bias which exists in current curriculum practices. The lack of resources available to teachers in exploring new subject matter in the classroom at an accessible intellectual level highlights new areas for contributions from publishing houses to enrich the knowledge economy (Kessels, 2001).

***Finding 13: The teachers found it difficult to generate images of the future. They found it much easier to critique images which others had generated.***

In early PD, the teachers focused on a future which had been represented in the media, and which was previously referred to as pop-futures (Slaughter, 1995b). It was clear from their discussions that these external images had strongly influenced many of the assumptions they made about the singular future each of them assumed the others shared (Bateman & Quirit, 2006; Bell, 2005a). In outlining their views of the future, the teachers brainstormed many single ideas or events, and were unable to construct a narrative which grew the ideas and events into a cohesive scenario.

Hesitantly, teachers outlined technological advances, environmental crises and further globalisation as 'things that are going to happen in the future' (Anessa, PDFG1, l. 235-236). In this way, they highlighted global futures which were 'outside of their control' (Penny, PLT6, l. 778). Whilst teachers felt excited about possible advances in technology, this also led to fear. The environmental crises which were 'likely' led to a feeling of hopelessness (Hicks, 2002). In thinking about the ways in which globalisation would impact their lives, the teachers were concerned about the impacts of 'moving around' on the stability of children's lives. There were many instances in early conversations where teachers articulated their anxieties about the future and I suggest that it is these futures anxieties which inhibited their capacities to articulate images of the future.

It was not until the teachers began to examine other peoples' images and questions about the future that they were able to reflect upon, or build their own thinking about, the future. In Chapter 6, the reader will recall the cyclical nature with which the PLTs operated, and the ways in which each cycle would simultaneously end and then begin again with the sharing of student work. Through these collaborative reflections, the teachers would 'bounce ideas off each other

which would make me think about it more deeply each time’ (TIPK, I. 198-199). Moreover, through the curriculum work they were doing, they were generating new images and critiquing images in more sophisticated ways:

Looking at the student work taught me about what I thought about the future. Sometimes I went into the class thinking one thing, and then I would listen to what some of the students thought and completely change my mind. When you first asked me what I thought would happen in the future, I honestly didn’t have a clue. I learned it by using the ways that other people think about the future (TIJV, I. 916-922).

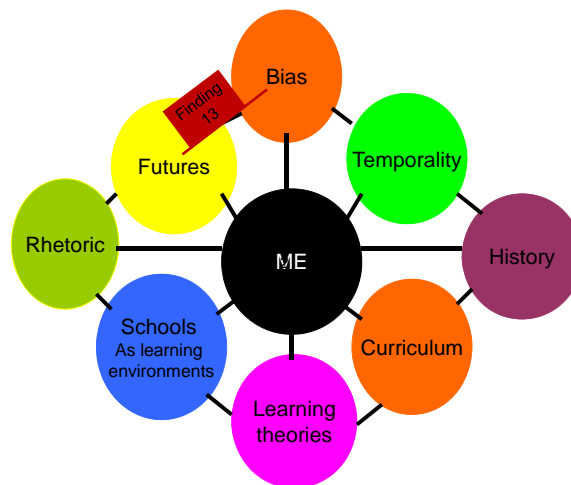


Figure 50 – Interplay of concepts – Finding 13

Without the external stimulus of the facilitator in professional learning, and an explicit development of temporality, I would argue that these teachers were stuck. In the interplay of only thinking about images of the future (futures and bias, see Figure 50), they were unable to generate futures thinking which, as seen in Chapter 1 and 2, demands rich interdisciplinary thinking. From a research perspective, and also in regard to classroom pedagogy, I suggest that the very act of asking someone to simply articulate an image of the future is paralyzing, because in this study, the complexities and frames involved in futures times perspectives are multilayered. This becomes particularly apparent as we begin to consider the transformative domains within these findings.

In this section, I have drawn upon the data and literature which has developed through this thesis to respond to the second research question regarding how teachers and their futures temporality exists inside and outside of their curriculum practices. It is clear that prior to the

commencement of this project, the teachers had given little thought to the connections between educating for the future and specifically thinking about a future. Indeed, in most cases, they had given little thought to any notion of the future. This positioned their professional learning in this area as pivotal to the ways in which futures consciousness could be increased, but also with respect to the ways in which FTP could be incorporated within curriculum practices. The teachers' professional learning is the focus of the next section.

***How can we empower and develop teachers' capacities to develop futures perspectives within pedagogy and curriculum?***

Gardner (2006) suggests that:

Unless we can help people think differently about what school can be like, what can be studied, how it can be taught, how it can be learned, then the opportunity for education for understanding is not going to be seized (p. 144).

In this research, I have worked with teachers and they have worked with each other to explore the ways in which FTP can be developed within curriculum. My approaches to teacher professional learning were outlined in Chapter 3. In the first instance, I worked with the teachers through a directed PD process where we talked about the future and I introduced them to a range of tools and concepts which scaffolded their futures thinking and increased their futures consciousness (see Chapter 5). Secondly, over an extended period, I worked with them as a PLT, through the cycles of planning, implementation, reflection and so on, to implement explicit futures dimensions within the classroom curriculum. Subsequently, I acted as a support mechanism and 'bounce board' (TIEC, l. 993) as the teachers became more confident in independently engaging in project based learning within their contexts.

There are four key findings which have emerged through the research in response to the ways in which teachers are enabled to work in different ways in developing their futures curriculum, with professional learning and ongoing support.

***Finding 14: Futures studies brings great anxiety at first because it is so unfamiliar.***

There has already been much discussion through the findings and previous data chapters with regard to the anxieties the teachers experienced during early stages of this study (see Findings 11 and 13). On many occasions, they were uncomfortable discussing their views of the futures or contributing to conversations which asked them to articulate a view of the future. As described in Chapter 5, one was particularly anxious about offering any futures thinking for fear of being incorrect:

Every time you ask me a question about the future, I feel nervous. Like I'm the student in the classroom. I don't want to be wrong, but I don't know whether I'm going to be right. Can I do anything to be right before our next meeting? (Mary, email).

Another felt quite anxious about whether she had interpreted our discussions correctly and whether she was planning her classroom activities correctly:

I just want to make sure that we're on the same page. You did tell me that I could think about lots of different futures, didn't you? During the meeting I was thinking about futures and architecture. Now that I'm on my own, I can't remember why that fitted. This is really stressing me out (Anessa, email).

In the introduction to this thesis, I suggested that futures caused disequilibrium (Piaget, 1997), or an inability to connect what is already known to the new information or ideas being presented. Futures studies were clearly a new area for teachers at personal, global and educational levels. These ideas have been more fully explored already through the data chapters and previous findings (see Findings 3 and 9). A question which emerged specifically through this communication with Anessa and through other interactions with teachers was the number of new professional learning sessions a teacher attends within the span of being a teacher. In new research it would be interesting to interrogate the long-term benefits of short-term professional learning approaches. Whereas in this project I was there to support the teachers beyond the introduction of a topic and knowledge, in most instances they do not have these support mechanisms. From this study, I would suggest that in a short-term futures based professional learning exercise, there would be few long-term gains. I would argue that the sustainability or growth of new knowledge and approaches is contingent upon ongoing support which incrementally reduces the scaffolds and supports which a facilitator has put in place.

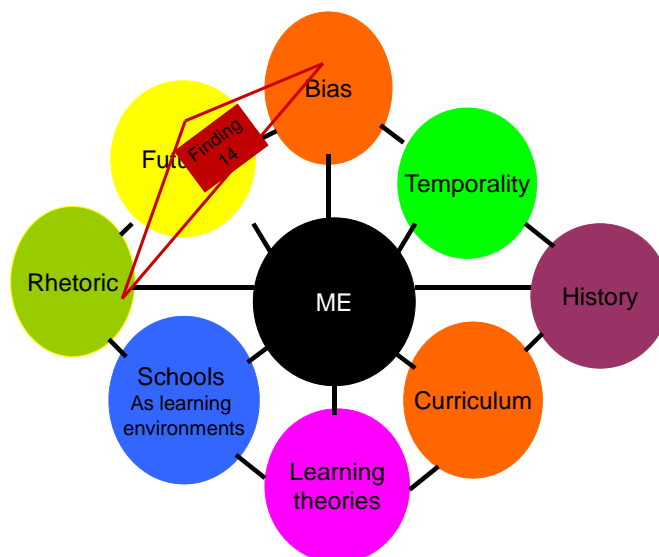


Figure 51 – Interplay of concepts – Finding 14

Without professional learning, the teachers were unable to equilibrate their thinking and apply their understandings within curriculum and pedagogy. This idea is not new in this thesis. In many instances, however, within this study, my role in supporting these teachers was as much to allay their anxieties in the early sessions, as to move their learning into action in later phases. As highlighted in Finding 12 there is much room for further research in this area in regard to the ways in which teachers' professional learning supports their ability to work with new ideas and practices within education.

***Finding 15: Futures consciousness is increased in abundance through explicit development of skills and conceptual understandings.***

There has been significant personal and professional 'futures growth which has occurred' for the teachers, through their involvement in this study (TIEC, l. 11). As highlighted repeatedly, entering this project I identified these teachers as having little futures consciousness. Through the data chapters and previous findings, the reader will identify alongside the teachers the changes which occurred.

In Finding 13, I described the teachers' inability to produce their own futures scenarios or to articulate interconnected images of the future. From the various analyses of data which have been undertaken in this study, it is clear that a significant turning point in their abilities to talk and think about the future came directly as a result of interacting with futures tools (as

described in Chapter 1 and later referred to in Chapter 6). I suggest that the tools provided a number of platforms for teacher professional learning.

In the first instance, the tools required that teachers develop a metalanguage (specialist language) in order to share, reflect upon and critique the work that they were doing. With a growing futures vocabulary they were better positioned to engage in the learning activities. Secondly, the use of the tools acted as a scaffold for their learning. Through the use of the future tools during the PLT (Chapter 6) there was a stronger framework for discussing futures beyond the more open discussions which had occurred during the PD sessions (Chapter 5). Linking teacher learning to action and practice can be linked to the strong enactivist (Gunn, 2001) and Reggio Emilia (Ridgway & Surman, 2004) learning approaches which were outlined in Chapter 3:

Deb, I get it. I came home and did another Y-chart. You should see my futures ... lol (Mary, email).

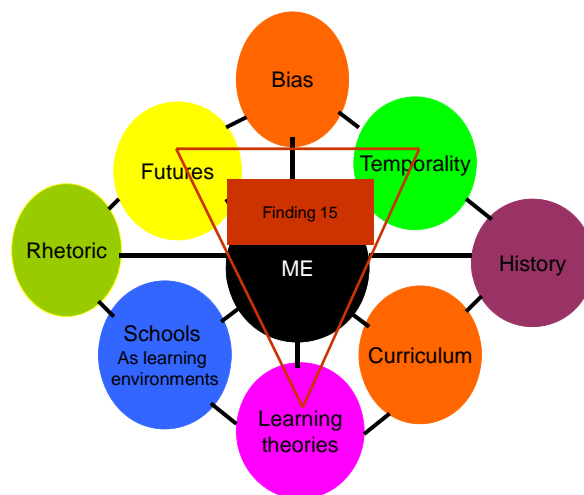
As the teachers began to successfully apply the tools, they in turn became more critical in the ways they discussed the future:

When [student] was talking about working in the factory with his dad, I talked to him about why he thought that would happen. It was funny because each time you [Deb] taught us a tool or talked to us about the future that's what you did (TIMB, l. 697-701).

As they interacted with futures tools and the associated discussions more frequently, they reported that they 'noticed the future more in everyday life' (Mary, PLT4, l. 451):

One of the things I hate about doing this each week is that I'm supersensitive to futures stuff. I used to watch these ads and shows and enjoy them. The minute they mention the future, I'm looking for the future they're talking about. I can't turn it off. It's everywhere (Penny, PLT 5, l. 739-743).

In this study, it was the use of the tools in the PLTs which enabled the teachers to engage with the different levels of futures thinking (Masini, 2006; Slaughter, 2002a) described in Chapter 1.



**Figure 52 – Interplay of concepts – Finding 15**

Through the ongoing professional learning and action research cycles in which the teachers participated, their ability to conceptualise and talk about time increased. As a result of their growing confidence and ability to apply a range of tools to scaffold their temporal thinking, they became more willing to think about futures which was foreign at the outset of this project. Figure 52 highlights the interplay of the concepts which arise within this finding. I suggest that it would be impossible to contemplate the introduction of futures thinking within the curriculum without this explicit PD to assist and grow temporal capacities within teachers. As described in Chapter 1, there is broad futures literature (Gidley, Bateman & Smith, 2004; Inayatullah, 2006b; Milojevic, 2005; Slaughter, 2002b) which examines the ways in which futures thinking enriches and complements a person’s ability to participate within their world.

***Finding 16: Teachers enjoy the opportunity to learn alongside each other and other partners.***

In Chapter 3, I highlighted the various approaches which could be used in professional learning within the school environment. In Chapter 4, I linked this notion of PD to an action research cycle. I described my preferences for the purposes of this project as blending many of these approaches together, but particularly drawing upon a more directed PD approach in the first stages (Boyle, While & Boyle, 2004; Chalmers & Keown, 2006; Darling-Hammond, 2005), and collaborative PLTs (Berman Brown & McCartney, 1999; Clayton, 2007; Guskey, 2002) as the teachers began to introduce their new understandings within the classroom.



Whilst tentative about participating in activities at the outset, the teachers increasingly looked forward to the sessions, especially when the activities were hands-on and interactive:

I loved it when we started to actually do the work our students would do. I've never talked to some of the people I work with like that. I saw things differently about how they do things. It's not that they are better or worse – they just see things differently to how I do (TIMB, l. 356-361).

The teachers identified the 'working together on stuff none of us knew about' (PLT8, l. 443) as an 'adventure where we almost had to depend on each other' (TIAQ, l. 1029). In this perceived adventure, they learned a great deal about what their colleagues thought about a range of ideas and developed understandings about the ways these teachers brought their worldviews into the classroom (Koltko-Rivera, 2004; Tarnas, 1988).

As well as enjoying the opportunity to learn about each other, the teachers also enjoyed the opportunities to learn from one another:

The best thing from each week was when we saw how we would all teach things. When [teacher] spoke, I was always amazed by how she did things ... Like once, we were planning to talk about the future and she had gone away and created all this stuff ... and all I was thinking was about literally talking about the future – you know, like 'What do you think about the future?' (TIAQ, l. 987-995).

This occurred increasingly as teachers began to 'get over our own insecurities' (TIPK, l. 465) and to recognise the different 'strengths each of us brought to the table' (TIGP, l. 322). Within the collaborative nature of PLT work, they shared 'the risks, challenges and massive successes' (TIMB, l. 1201-1202) which emerged through 'the risks of getting futures into the classroom' (TIJV, 668-669).

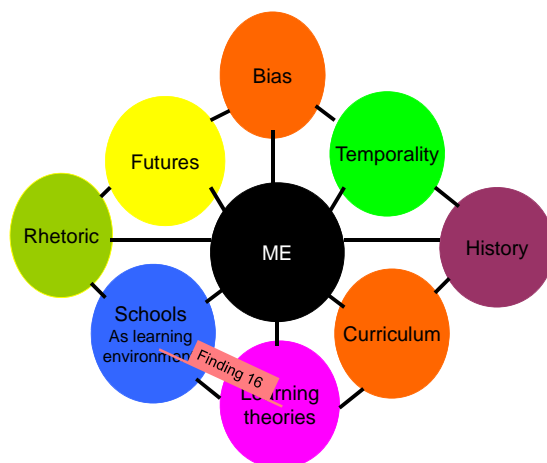


Figure 53 – Interplay of concepts – Finding 16

There was rich interplay between the concepts of learning theories and the school as a place of learning. Within the methodologies of this study there was an ongoing merger of the learning theories described in Chapter 3 with regard to children learning in schools, alongside a rich framework for thinking about the teachers’ professional learning. I suggest from the data which has arisen from this study that the teachers through immersive (Edwards, 1993; Ridgway & Surman, 2004) and reflective (Berman Brown & McCartney, 1999; Moon, 1999; Schon, 1983) practices within the cyclic action research (Kemmis & McTaggart, 2003) developed a rich and critical empathy for, and insight into, the ways in which learning can be experienced within their autonomous learning unit. It is this reflective capacity in this study which enables later discussions of transformation within this study (Williams, 2006).

***Finding 17: Teachers respond to educational challenges when they are supported and have adequate resources.***

Teachers face many challenges in constructing opportunities for student learning. Lovat (2003) and others (Darling-Hammond, 2000; Rowe, 2003) identify teacher quality as a key determinant of student learning. Other classroom related issues such as resources (Lare, 2004), curriculum guidelines (Clayton, 2007) and assessment practices (Black & Wiliam, 1998; Rinaldi, 2001; Shepard, 2000) or the broader school environment such as school culture and organisation (Angelides & Ainscow, 2000; Fullan, 2005b; Hargreaves, 2001) are also identified as supporting effective teacher practice.

In this study, the teachers have been simultaneously exposed to deficits and new opportunities within pedagogical and curriculum practices. On the one hand, they reflected upon what they were doing in the classroom through a futures lens. They identified a distinct lack of explicit futures perspectives which were being developed:

I felt a bit stupid really ... when you explained to us what this research was about. I mean, of course schools educate for the future ... and we are all really passionate teachers ... but when I saw what that looked like, I knew I was one of those teachers taking the future for granted ... [laughs] ... At least you were nice about it (TIPK, l. 838-843).

In realising what they did not do, these teachers were faced with educational challenges. In the first instance, there was a sense of shame and a feeling that they had 'been letting the kids down by not knowing this stuff' (Jennie, PLT6, l. 609-610). In the second instance, there was the need to 'fix this and redeem ourselves' (Jennie, PLT6, l. 629) and through explicit professional learning there were many dilemmas in how this 'new curriculum can be brought into the classroom' (Esme, PLT2, l. 48-49).

Through the ongoing support provided in my role as critical friend, facilitator and resources assistant, the teachers were prepared to respond to these challenges 'with the confidence that there would be a happy ending' (Jennie, PLT8, l. 677-678). They demonstrated remarkable confidence in my ability to support them through their learning and the introduction of new content within curriculum:

Knowing we had a guru working with us made it easier to take the risks. If it all turned to crap, you would have known how to fix it (Mary, PLT8, l. 873-876).

They noted different reasons why this support was important for them. For Jennie, it was the ongoing teasing out of her ideas 'with an outsider' (TIJV, l. 923). Mary also liked the opportunity to 'have help on hand. I only had to email and I ended up with the resources I needed or suggestions of what to do next' (TIMB, l. 664-666). For Geri, 'I saw things very differently. You taught me how to teach things I really love' (TIGP, l. 388-389). Anessa felt that she had been 'way out of my depth as a beginning teacher doing these things. I needed you to hold my hand' (TIAQ, l. 124-126). Penny saw her involvement as a different experience of PD:

I go to PD days all the time. Ray [principal] pays for us to go to whatever we want to really. So it's not like I don't learn anything. What you've done is different though. I didn't just come back from the day out of the classroom and think the things I'd done were great ideas but the folder could go on the shelf. I had to stick with it ... and I liked doing it because I wasn't on my own (TIPK, l. 320-327).

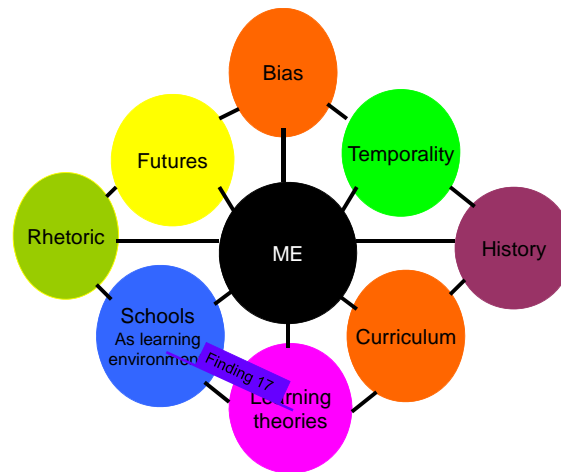


Figure 54 – Interplay of concepts – Finding 17

Teacher professional learning is incredibly important for improving teacher practice. However, beyond those transmissive pedagogies which provide teachers with explicit content to be taught, it is crucial to provide ongoing support to teachers in practising or enacting their new understandings. In this study, the ongoing nature of PD and PLTs were what underpinned change and enabled teachers to work with greater autonomy and confidence within their learning spaces. The complementary philosophies of Reggio Emilia and enactivism woven through the professional learning approaches deepened teacher knowledge and pedagogies.

### ***How do futures perspectives transform teacher practice in learning environments?***

In this study, I commenced with a number of claims. One of these was that explicit futures perspectives are absent from curriculum practices. Another was that the curriculum would change with the introduction of these explicit FTP. In this section, I will outline eight key findings which suggest that classroom practice and teacher futures consciousness and temporality were transformed during this research.

***Finding 18: Teachers felt inspired through the students' responses to futures education.***

Thus far, I have already made some claims about assumptions teachers held at the outset of this project (see for example Findings 6, 7 and 10) about the students' inability to 'deal with such complicated stuff' (Esme, PDFG1, l. 48). Many of these beliefs were also captured in discussions described in Chapter 5. In Chapter 6, as the teachers moved beyond talking about the future into using futures tools both in PLTs and within the classroom, these assumptions about the students' capacities were dispelled by the teachers' observations and experiences of what the students were able to do.

Whereas the teachers had initially doubted their students' abilities to think about the future, they were increasingly 'blown away' (Mary, PLT5, l. 700) by 'the work and thinking that's going on' (Anessa, PLT4, l. 433):

The kids showed us the way in terms of what could be done. Here I was the timid little mouse in the classroom ... scared of teaching them about the future. They just ran with it ... and it was exciting because I saw what they could do, and I saw how excited they were ... and I wanted a bit of that too ... different to a weekly spelling test (TIPK, l. 534-540).

As a result of the students' engagement through the projects, the teachers reported the different ways that their own 'motivation increased' (Esme, PLT5, l. 479). Mary reflected that she 'wanted to be on the same journey' (PLT6, 227) as the students and spent significant time 'trying to understand the same things they were making sense of' (PLT6, 231-232). Jennie 'worked hard just to keep finding new resources. The kids were so hungry, and I wanted to keep things that way' (TIJV, 121-122). Similarly, Geri:

made my husband pull out every *New Scientist* we've ever had, and just kept looking for new and exciting things that could keep pushing the children. It was like a learning addiction ... [laugh] (PLT7, l. 594-598).

Each of the teachers reported that they were especially 'attracted to how you could make students think differently about their futures' (Penny, PLT8, l. 633-634). This was the idea which encouraged teachers to rethink the school and teachers' roles in educating for the future:

We were helping students to think out their own futures, and then lined up their ideas with others. The chance to help these kids to think that their lives mightn't be the same as their parents is like, wow ... They need to do this ... It makes me think there's real purpose to my job ... apart from a babysitter (TIAQ, l. 737-744).

This notion of empowering students to rethink their possible futures was highlighted in the writing of Slaughter (2002b), Rogers (1998) and Hicks (2008). It was this same notion which increased the motivation of the teachers in this study.

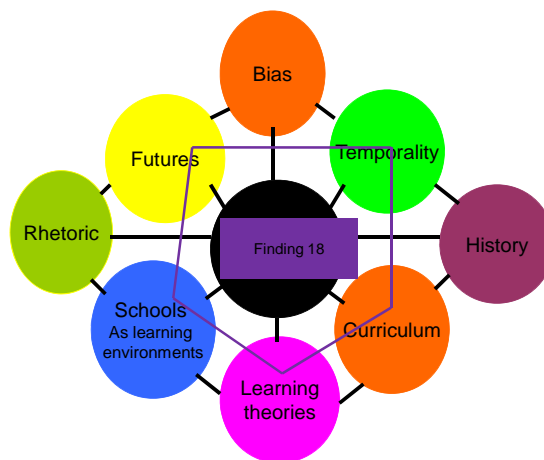


Figure 55 – Interplay of concepts – Finding 18

This finding represents the interaction between futures, temporality, schools, learning and curriculum, as seen in Figure 55. The reader will recall the same diagram appearing as a result of the same concepts with regard to Finding 9 (Figure 46). Whilst in this instance the transformation has occurred with regard to the teacher's practice, what has caused the transformation clearly occurs between this interplay of concepts.

***Finding 19 – The dynamic of student-teacher relationships shifts constantly through opportunities to engage in open-ended futures learning.***

From the outset of this study, and from the first time I entered Wooranna Park Primary School (see Chapter 3), it was stressed that 'much of the success which occurs within this school is based on the rich relationships built between the teachers and students' (Ray Trotter, principal, personal communication). As already highlighted through literature and the

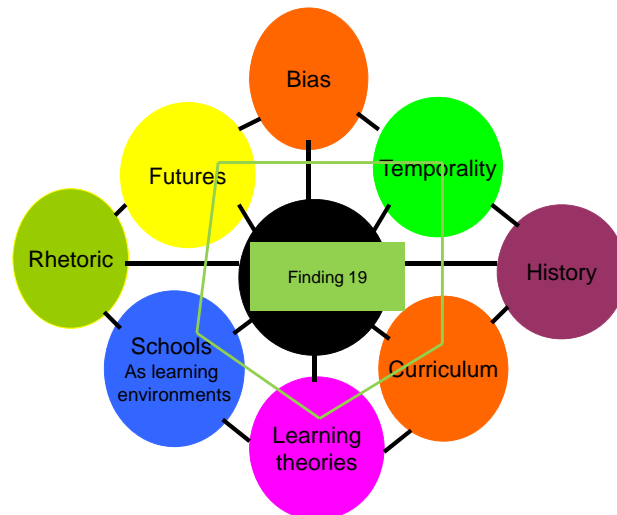
pedagogies enacted through the PLTs, the school is committed to the development of Reggio Emilia philosophies (Ardzejwska & Coutts, 2004; Edwards, Gandini & Forman 1998), and the use of autonomous learning approaches (Crebbin, 2000; Hayes-Jacobs, 2004; Matthews, 2004) within this teaching and learning setting. Both of these approaches also depend upon the strong relationships which exist in classrooms (Begg, 2002; Hargreaves, 2000b).

In this study, the teachers ‘deepened their understandings of the students they work with’ (TIEC, 223-224). From the teachers’ perspectives this occurred as a result of ‘the constant and intense dialoguing which goes on’ (Jennie, PLT7, l. 442). Whereas in most instances they considered that ‘normal curriculum is already mediated and filtered before we teach it’ (Jennie, PLT7, l. 478-479), in this study they ‘were working in real time’ (TIGP, l. 273). By this, Geri described a curriculum which was built on the interactions between the students, the teachers and the content under examination. Each of the teachers noted the ways in which the control of the curriculum and the classroom environment shifted from experience to experience:

One of the most challenging things which happened was the way that the students took over the running of what occurred in their learning. When they first met futures, they flew ... and I didn’t. I tried to keep control of the classroom, but I couldn’t because they were too good at it ... and I was holding them back. Once I let them go and I was there to help them with what I knew and was better at, everything just went great (TIMB, l. 1218-1226).

Similarly, Jennie reflected:

We thought our students are autonomous. They have Independent Learning Plans. They choose what they are doing. Futures put us all into the unknown and it was a true open-ended inquiry. That’s kind of funny ... because the students were much better at it than us ... or at least me (TIJV, l. 846-851).



**Figure 56 – Interplay of concepts – Finding 19**

This finding of transformation in the relationships between students and teachers was catalysed between the interplay of the concepts depicted in Figure 56. The reader will recall this same diagram representing other transformational aspects in Findings 9 and 17, thus far. In this finding, I suggest that the dynamic between students and teachers shifted as a direct result of the temporal and specifically FTP which was introduced within the setting. The locus of control for learning shifted according to the levels and types of futures thinking which were engaged. The open learning spaces which were generated as a result of this study provided the opportunities for rich learning partnerships between teachers and teachers, students and students, teachers and students, and students and teachers.

***Finding 20 – Through an explicit futures education, the teachers enjoyed the opportunity to learn alongside their students and other partners.***

Teachers originally felt unsettled that the students worked in different ways to themselves in futures education. As the teachers developed a greater appreciation of the quality of work the students were producing and the ways in which they were applying knowledge from previous learning, they were interested in learning more about the ways in which the students were thinking and how they came to particular positions:

[Student] was describing why we won't live on the Earth forever. The way he came to it was unreal. Some of the stuff he had learned in the Science Talent Search had left him thinking that we had to have alternative energies because we couldn't keep using the same ways.

When I taught him then, I didn't mean him to think about it like that. This gave me the



chance to see how he was using what he knew. I don't think I've really noticed that ... or thought about it like that (TIPK, 485-492).

The teachers also described 'the thrill of getting right inside the learning groups – not to watch and listen, but to understand' (Anessa, PLT6, l. 1394-1396). Jennie recalled the instance described in Chapter 6 where students created global Y-diagrams and the insight she had gleaned into their cultural backgrounds:

Growing up in the same country where everyone is pretty much the same, everyone just says pretty much the same things. Listening to the kids and learning from them about the same stories we hear on the news really shocked me. I found myself asking a lot of questions ... and the students were thrilled ... But I wasn't doing it for them. I was fascinated (TIJV, 1083-1089).

Mary also recounted being part of an unintended cooperative inquiry group:

The kids were doing stuff and learning stuff that I wanted to do ... so when they couldn't find something that I thought they would later, I offered to help out. That night I went home and worked for hours. I felt a bit nervous that they wouldn't be happy with what I had found. It was ace because they had all gone home and done the same thing (PLT6, l. 452-458).

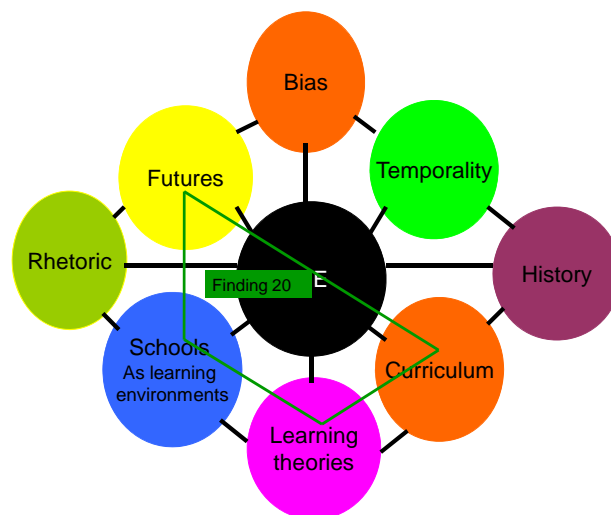


Figure 57 – Interplay of concepts – Finding 20

Where the curriculum was open-ended and of interest to the students, they were intensely engaged in their learning. The teachers valued the students' contribution in developing their own futures thinking. Through the use of Reggio philosophies, the classroom became a place of

dynamic interaction (see Finding 19). Thus, in the interplay of the concepts – futures, schools, learning theories and curriculum (see Figure 57) – the teachers repositioned themselves within the learning space, developing strong learning partnerships. There is much literature within Reggio Emilia (Edmiaston & Fitzgerald, 2000; Edwards, 1993), enactivist (Bateman, 2006; Davis, Sumara & Luce-Kapler, 2000) and constructivist thinking (Bruner, 1996; Phillips, 2000; Vygotsky, 1978) regarding strong learning relationships. Moreover, in educational literature there are new emphases on the roles of teachers as co-learners (Cook-Santher, 2002; Daws, 2005).

***Finding 21 – Explicit futures education changed the ways that teachers planned curriculum.***

As the future is clearly uncertain, any associated study provides the opportunity for open-ended and dynamic curriculum development as occurred within this study. As highlighted in Chapter 3 theoretically, and Chapter 6 through the PLT process, these teachers drew upon a Reggio Emilia philosophy to plan curriculum, whilst observing VELs as a guide to content. The framework used for planning included an immersion in the topic, followed by enrolment in specific project based learning groups. The reader will recall that these focused around Social Futures, Techno-futures, Global Futures, Fantastic Futures and Future News.

At the outset of this study, the teachers were confident that their curriculum was ‘largely directed by the students’ interests’ (Esme, PDFG1, l. 110). They believed that this student-directedness or autonomy in learning was also demonstrated through their ‘ongoing negotiation in our weekly independent and agreed learning plans’ (Esme, PDFG1, l. 117) Through this study, the teachers came to reflect that what they were doing in curriculum previously, whilst allowing some flexibility in learning, was still very teacher directed:

You know, I thought we really let the kids do their own thing in learning. I can’t explain the actual difference except that when we [teachers] know about what we are teaching, we just teach it, and kind of put the students through the motions. We still do all the planning (Jennie, PLT7, l. 232-236).

The difference Jennie highlighted, I suggest, was as a result of not knowing the content of the curriculum, and moreover not being able to direct or colonise the directions of student

learning. In this study, the teachers noted that they and their students frequently changed their thinking as a result of investigation into possible futures, and as this occurred the whole direction of what was being learned also shifted:

When we first started, I honestly thought I knew what the students would come up with. At the end of the project, we would just make a ‘This is your life’ in the future ... a few activities about how they could be heroes ... but that stuff was all over in the first two weeks ... and then it got deep (Mary, PLT7, l. 455-461).

This meant that the teachers could not generate broad learning plans across the term which they had previously done. Rather, they ‘front-loaded with rich immersion’ (Me, PLT8, l. 26) and developed an emergent curriculum (Abramson, 1995). This is much more strongly aligned with the Reggio Emilia philosophies, in contrast to the more constructivist approaches which were more familiar to these teachers.

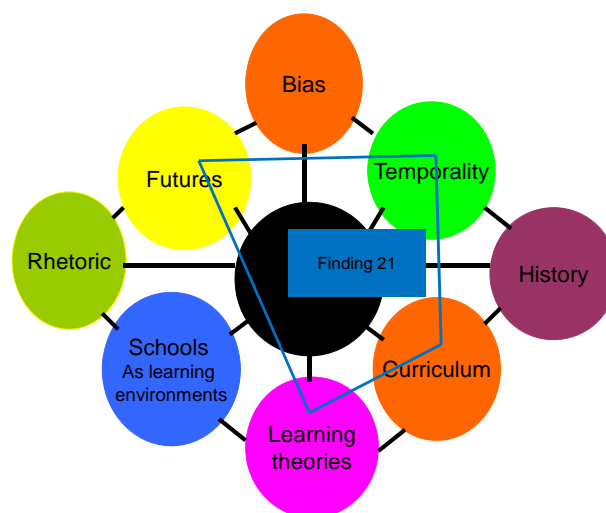


Figure 58 – Interplay of concepts – Finding 21

This transformation in curriculum practices occurred as new teacher learning about the futures and temporal domains pushed them to rethink their philosophies about teaching and learning in their implementation. Thus, it was in the interplay of futures, temporality and learning theories that the curriculum changes occurred (see Figure 58).

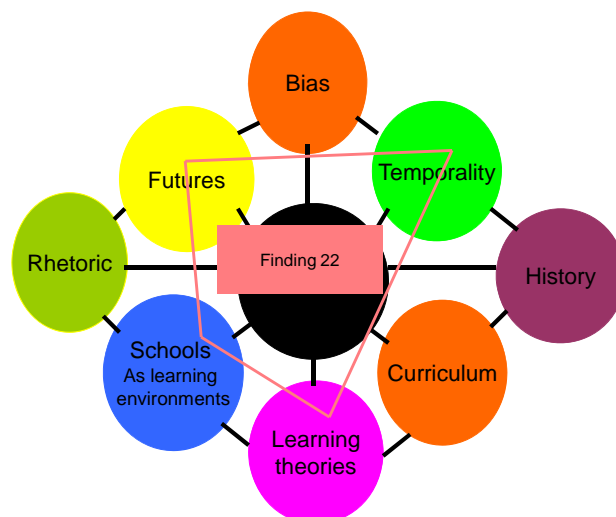
***Finding 22 – Increased futures consciousness makes teachers reflect more critically about the ways in which school practices inform or contribute to possible futures scenarios.***

Across Chapters 5 and 6, I have represented the teachers' increasing futures consciousness. In an earlier discussion regarding Finding 9, I have argued that through the use of futures tools, the teachers realised that they 'could be more active in doing stuff to the future rather than it just doing it to us' (TIMB, 28-29). In becoming more futures conscious (Lombardo, 2005; McInerney, 2004) and more temporally capable to move between the various time perspectives (Bateman & Harris, 2008; Roeclelein, 2000), they were able to think more critically about the ways in which schools could educate for the future (Bateman & Quirit, 2006; Bussey, Inayatullah & Milojevic, 2008), as opposed to their initial taken-for-granted ideas that education automatically did educate for the future (Gough, 1990).

Across the PLT, each of the teachers demonstrated interest and capacity to implement futures curriculum. Once they had moved past their anxiety about futures thinking and 'what will it look like in the classroom?' (Anessa, personal communication), each became more attuned to the ways in which their curriculum and other school practices could become more futures inclusive and explicit. In their own school setting, the teachers wanted to 'take this stuff out beyond the Grade 5/6 ALU' (Jennie, PLT5, l. 894) and thought of strategies to achieve this:

Imagine what we could do with this stuff if the children started thinking about it earlier in the school. Just think about what they could do at secondary school ... Imagine how these students could just rise above all of the stuff that happens in their life (Anessa, PLT5, l. 925-931).

Beyond their school, the teachers were also keen to educate others about the possibilities of futures education and explicit FTP within the school setting. Anessa presented at a Deakin University professional education night, explaining to teachers in her local cluster what had occurred in her classroom and the ways that it has changed her practice (Bateman & Quirit, 2006). Jennie published a short reflective piece (Vine, 2006) in a professional publication advocating the need for futures education in learning spaces. The others have presented in symposiums at curriculum conferences. Their key theme is the way that they have rethought the roles of schools and teachers in developing futures and temporality within classrooms.



**Figure 59 – Interplay of concepts – Finding 22**

Through the teachers’ professional learning, they were able to more critically engage with curriculum and broader educational policy discussion regarding their roles in educating for the future. Rogers (1998) wrote about this as an awakening of the mind and an awakening to action as a result of futures engagement. Furthermore, as a result of their new ways of thinking and working, they were enthusiastic ‘to empower others to empower others’ in the same ways that they had experienced (Jennie, personal communication). As seen in Figure 59, further transformation occurs within the interplay of futures, temporality, learning theories and schools as places of learning. As has already been highlighted, there has been limited research undertaken in this area.

***Finding 23 – Students enthusiastically engage in futures education as they see connections between what they are learning in a classroom and their personal and collective lives. They are also interested in futures studies because they are keen to think about their future lives.***

The teachers were increasingly enthusiastic about teaching futures studies within their classroom as they observed their students’ engagement within the curriculum. In reflecting upon this, the teachers theorised two key explanations which contributed to this finding. The first was around the notion that this curriculum was closely linked to their lifeworlds. The second theory was ‘because it was all about them and their futures’<sup>62</sup> (Geri, PLT8, 813).

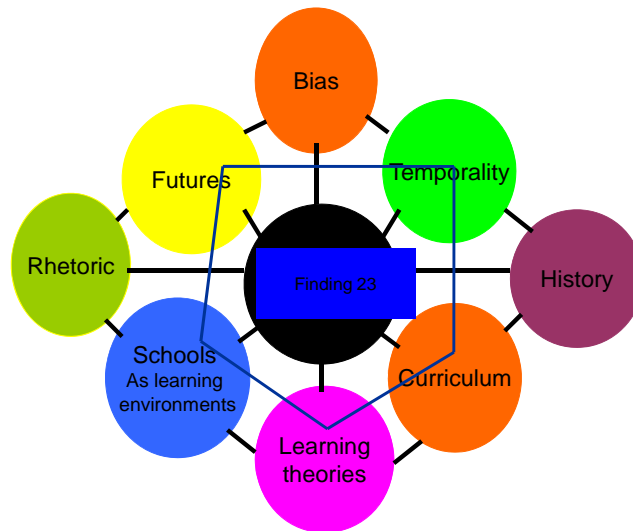
<sup>62</sup> In itself this claim is of interest, as what is education for and about, if it is not for and about the learners?

There is much literature written about the possibilities for connecting students' learning to their lifeworlds (Cope & Kalantzis, 1999; Gonzalez, Moll & Amanti, 2005; Thomson, 2002), personally and more broadly. In this study, the teachers observed that the students were using their own lifeworlds to contextualise futures thinking:

The only way the kids could think about what might happen was through the ways they know the world ... So when I asked [student] to think about something, I noticed this cycle of thinking ... It started with his family now, broadened out to the world now, then some kind of thinking about each for the specific futures task and then he brought it back again. So with everything he was learning it was moving in and out of his life ... and he loved it (Penny, PLT7, l. 1076-1083).

In this, Penny described the explicit links which were being made between the learning which occurred within the curriculum and the ways that *the student* could apply these understandings within their worldview. Thomson (1999, 2002) in her work within disadvantaged settings argues that this is an empowering approach which assists students to more critically access their worlds.

Futures studies is multilayered and moves between subjective and external frames for thinking about futures possibilities (Hicks, 2008; Milojevic, 2005). In this study, the teachers noted that the students 'liked doing this because it is all about them' (Anessa, PLT2, l. 17). As well as being connected to their lifeworlds, they were intrinsically motivated (Driscoll, 2005) to think about the world they would be living in as adolescents and adults. Through the use of futures tools and project based learning within the classroom setting, they were fascinated and enthusiastic to think about what was possible (Gidley, Bateman & Smith, 2004; Page, 1996), more than they were enthusiastic to think about trends, predictions and forecasts for the future (Slaughter, 1995b).



**Figure 60 – Interplay of concepts – Finding 23**

For the fourth time in this chapter, the diagram in Figure 60 is re-presented. Previously, it has demonstrated change within the ways teachers perceived their roles in educating for the future (Finding 9 – Figure 46). It has also signified how teachers’ views of the students changed with regard to their capacities for futures thinking (Finding 18 – Figure 55) and the subsequent effect of this on teacher motivation and engagement within the classroom. This diagram also presented the change which occurred within the dynamic of student-teacher relationships within the learning environment (Finding 19 – Figure 56). In this instance, Figure 60 demonstrates a transformation which has occurred within the ways that the students have engaged in the learning environment as a result of the change in curriculum and pedagogies which have arisen through the introduction of temporality and futures.

***Finding 24 – Historical appreciation and knowledge becomes relevant to children when it is connected to their current and future lifeworlds.***

In this thesis it has been previously claimed that the teaching of history is an example of the temporal bias which existed within the Australian curriculum. This is particularly highlighted in the absence of explicit FTP, outlined in Chapter 2. I am not arguing in any way that the teaching of history is not important, but rather that it needs to be more temporally balanced within the curriculum practices of schools.

In this study, history has been developed in many ways, and has often framed the ways in which students have engaged in futures studies. In particular, the notions of the extended present (Boulding, 1978) and the foresight principle (Slaughter, 1996) (described in Chapter 1) utilise history as an informant of the future. The teachers were surprised by the amount of history which was explored within their projects:

I couldn't have done this much history if I'd tried (TIJV, l. 69).

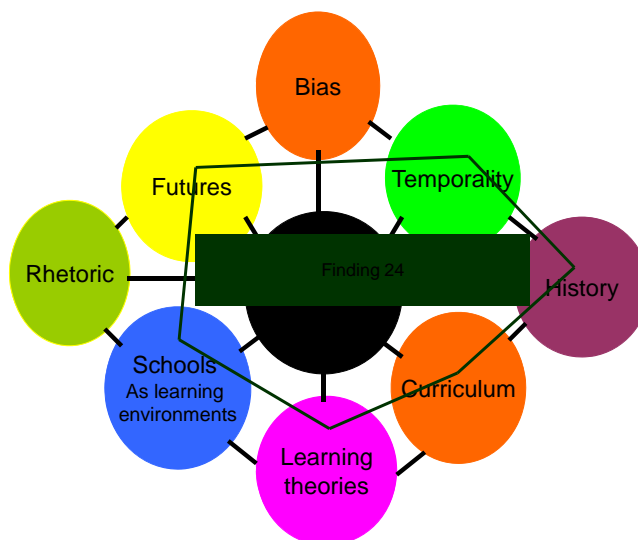
Penny's project visited history through the extended present of science and technology. Jennie's project explored cultural histories in order to think about how different countries would change over time. Mary's project explored people and events which had had an impact on the world in order to think about the 'trace that these kids will leave behind' (TIMB, l. 4). Anessa's project considered the historic construction of local communities in accordance with different demographics and Geri's project explored events in the media and what occurred subsequently as a result.

The teachers recalled other times when history had been addressed through the curriculum at Wooranna Park Primary School:

What usually happens is that it gets taught on its own ... we choose an area of history, the kids learn about it ... get bored pretty quickly, and then we move on. They don't see that the history is connected to their lives in the same way that the futures is (Geri, PLT4, l. 452-458).

They highlighted a difference in the ways that students engaged with history. According to Penny, 'futures is the hook for history' (PLT6, l. 778) as the students 'almost naturally go to the history to track what has happened to build their argument for the future' (PLT6, l. 781-782). Slaughter (1996) identifies futures studies as a forward-looking history.





**Figure 61 – Interplay of concepts – Finding 24**

I would argue that the inclusion of FTP enriched the teaching and learning of history, and historical time perspectives informed the ways that students were able to participate within critical futures studies. Thus, in the interplay between futures, schools, learning, temporality and curriculum, the teaching and learning of history can also be transformed and renewed (see Figure 61). I have also made this argument in other publications (Bateman, 2005a; Bateman & Harris, 2008). This is timely research with the introduction of a National Curriculum in Australia within the near future.

***Finding 25 – As children are able to move between temporal orientations, their understandings of the world broaden and deepen, as do their critical capacities.***

The human capacity to conceptualise time (Bash, 2000; Fraisse, 1982; Harner, 1982) was described within Chapter 2. The reader will recall the difference between thinking about time broadly, and the time perspectives (Holman & Cohen Silver, 1998; Lombardo, 2005) I outlined which people use as frames for this thinking about time. In the introductory chapter, I purposed that, through the development of a rich temporal curriculum, people could become temporally mobile. This capacity, I theorised, represented a person’s ability to shift their thinking between any of these time frames (past, present and future) dependent upon the task or knowledge.

As highlighted in the previous findings and in the data chapters, there is much evidence that the students did engage with this extended notion of temporality, through the frames of

futures, present and past. From the teachers' perspectives, the students were 'more able to do it than us' (Esme, PLT2, l. 67). The teachers' perspectives had also transformed the ways in which students perceived the history curriculum. Arising from these claims, then, are further claims that the students more deeply connected their learning to the world outside the classroom in ways which they had not done previously:

When the kids saw the same thing from different time lenses, they thought about things more deeply. It was as though they understood for the first time that everything happens for a reason, and that everything just doesn't happen on its own. This helped them to think about how their own lives were connected to what happened outside (TIMB, l. 1453-1459).

The teachers were 'blown away' with the ways that the students engaged with different resources, and in their conversations with each other (Penny, PL6, l. 25; Mary PLT8, l. 322; TIAQ, l. 237). They were particularly impressed with the depth and breadth of questions which students asked. These questions initially sought clarification of what something was, or why it was as it was. Increasingly, the teachers reported, the students asked questions which sought to transform the ways things were:

As the kids got deeper and deeper into their projects, and they understood why things were like they are between countries, they were thinking about how peace could be made. It was funny because it kind of happened right there. There were a couple of groups of kids who would never talk because of their countries, and they did in order to work out why they didn't talk and if they ever would (TIJV, l. 1892-1899).

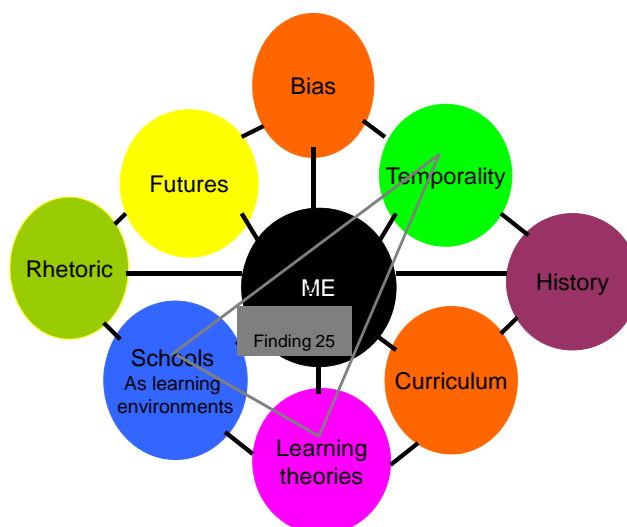
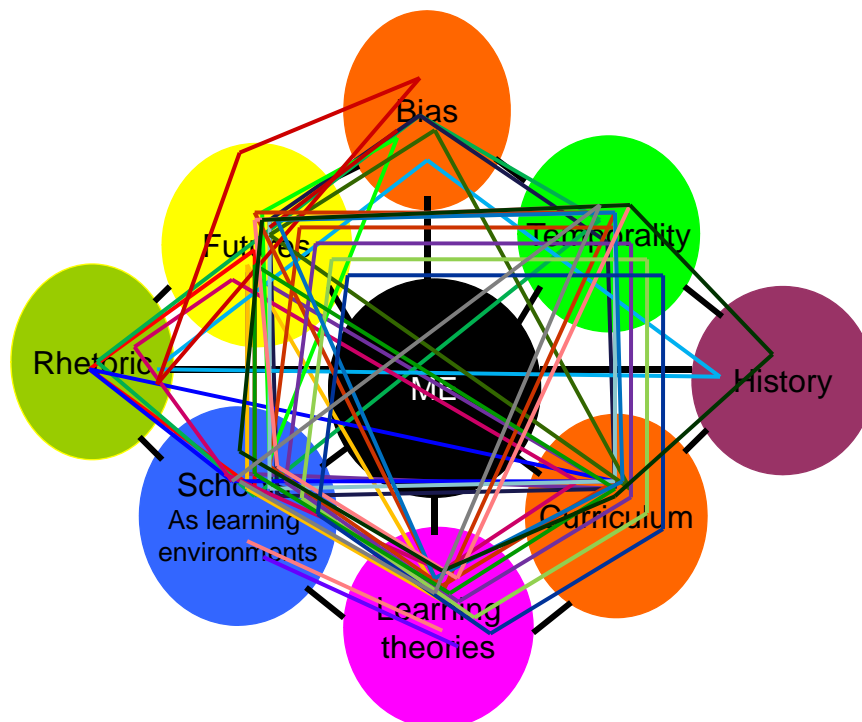


Figure 62 – Interplay of concepts – Finding 25

The explicit development of temporality within schools requires much professional learning and support (as highlighted in Findings 15, 16 and 17). In turn, teachers are able to offer students rich learning experiences about the world beyond the geo-spatial, economic and political frames which inform typical curriculum (Harris & Bateman, 2008). Further, within the interplay of the concepts of temporality, school and learning (see Figure 62), there is much opportunity to enrich students' inquiries about the world.

### ***Drawing together these findings***

I have presented my findings in this research at two different levels. On the one hand, I have provided a detailed narrative drawing upon data, literature and my interpretations of these. On the other hand, I have provided a diagrammatic representation of the findings as they may be understood through the conceptual interplay outlined at the outset of this chapter. Through the narrative, the reader has a sense of a journey which is nearing a conclusion, as we near the end of this chapter; the diagrams remain separate and discrete. Before moving on to the concluding chapter, I will present the final diagram (see Figure 63) in this analysis.



**Figure 63 – Concepts, co-emergences and interplays: complexity in thinking**

In the same ways that this study has utilised different frames for thinking about futures in schools, it will similarly draw to a close reflecting upon what occurred within these various frames. In short, there is not one tidy and well synthesised representation of all of these findings. Rather, what arises is a dense and messy set of lines and shapes which attempt to represent highly complex ideas and require much further interrogation. Layer upon layer, these lines and shapes highlight the complexity of thinking and action which has occurred within this study. In the next chapter, I will outline some concluding thoughts, as well as indicating some new potential for this work.

## ***Chapter 8 – In the end: new beginnings***

This thesis began with a number of ideas. The ‘end’ of this thesis is significant. Inasmuch as the conclusion of a thesis draws the specific research project to a close, it also provides the researcher with opportunities to pursue new findings which have arisen from the studies with which he/she has been engaged. In earlier chapters, I have sliced data and literature in a number of ways, and provided extensive detail in highlighting key findings. In this concluding chapter, I will focus upon the theoretical offerings which arise from this research and consider the significance of this study in contributing to fields of futures studies and education.

### ***Research questions, theoretical orientation and methodological issues***

This study has sought to identify and examine the ways in which futures and temporality influence schools and school curricula and the ways in which schools and school curricula influence teachers’ perceptions and enactment of futures and temporality. It was framed within the contexts of:

- Invisible fields of study within mainstream educational practices: futures education and futures studies
- Psychological understandings about how human capacities of temporality and time perspectives develop
- Curriculum documents which demonstrate temporal bias in the ways they are traditionally oriented towards the past, yet simultaneously claim a role in educating for the future
- A school with a time machine which did not go to the future (Wooranna Park Primary School).

Specifically, the existence of a time machine which demonstrated explicit temporal bias acted as a mechanism for situating this research. Initially, it was the intention to ‘power the time machine to the future’ through teachers’ practices and student learning through

curriculum which motivated me to enact my passionate interest in futures education. Four research questions guided this research:

- What is the role of a school in preparing students for their future?
- How do teachers view their role in educating for the future? What view of the future do they hold, individually and collectively? How do their views inform and influence classroom practice?
- How can we empower and develop teachers' capacities to develop futures perspectives within pedagogy and curriculum?
- How do futures perspectives transform teacher practice in learning environments?

In the previous chapter, I responded to the specific research questions. Extensively, I detailed 25 findings which arose from these specific questions, as drawn through literature and data. I will not revisit this discussion, suffice to say that there is much room for further interrogation illuminated within this thesis.

As a critical ethnography, my research sought to identify change which made futures thinking within education more accessible, critical and open-ended. Through this research, I have claimed that without explicit futures consciousness, teachers continue to replicate used futures. I have more provocatively claimed that curriculum writers and government agencies colonise students' futures through mandated and benchmarked learning standards and outcomes. As a participant in multiple action research cycles within this study, I have facilitated and supported teacher professional learning through directed PD (Chapter 5) and PLTs (Chapter 6). As demonstrated in Chapter 7, there has been significant change in teachers' practices and curriculum cycles, and the bricolage of research methodologies in this way have been informative.

The data which emerged from within this study has been analysed through various frames. In Chapter 4, I described the use of analytic bracketing in thinking about 'what teachers **say** about the future' in contrast with 'what teachers **do** for multiple futures'. These frames formed critical lenses through which the data could be viewed, and became highly complex in identifying the various ways in which the same single data sample could be interpreted. It was

through this analysis that I was forced to rethink many of the assumptions I had brought to this project. For example, I had wrongly assumed that teachers and curriculum writers made a choice to not include FTP within the curriculum. That may well be the case above and beyond the practices of teachers, but through the analysis of data it became clear that teachers did not know how to think about the future. How could they have possibly made a choice when they were not aware of futures education as a field of learning?

The reader will recall that in Chapter 4 I also struggled with the notions of reliability, validity, trustworthiness and generalisability. I offered thick descriptions (Creswell & Miller, 2000; Denzin & Lincoln, 1998) of the data waves, and crystallisation (Richardson, 1997) in drawing together multiple findings and perspectives to understand and theorise what has occurred within this particular case (Huberman & Miles, 1998). A limitation of this study is indeed the thickness of the data which has been generated. Whilst the rich narrative account may contribute to the lens of the reading in assessing accuracy of this research work (Creswell & Miller, 2000), the work is possibly denser than anticipated by the reader. A further limitation is the close proximity with which I worked with these teachers at Wooranna Park over an extended period of time. As complex as the analytic frames may have been, I interpreted and re-presented the data with added subjective understanding of the people involved in this research. These interpretations informed the key findings outlined in Chapter 7 and further contribute to the ways in which I have theorised my understandings of what has occurred.

### ***Theorising and contributing to discourse around 'educating for the future'***

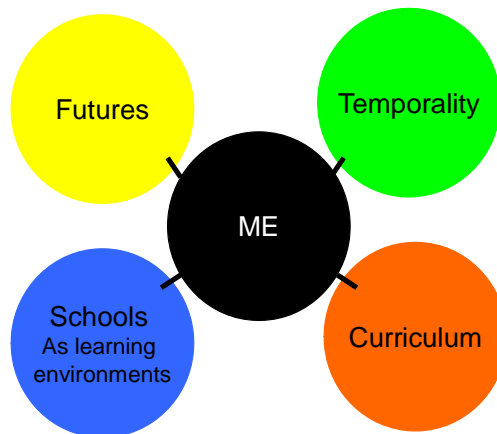
In the introduction to this thesis, I suggested that there was a paucity of research which moved beyond 'talking about the future' into actioned futures studies. Hicks (2002), Slaughter (2002b), Inayatullah (2006) and Milojevic (2005) along with other writers provide a groundswell of literature rationalising the need for futures studies in education. They also provide some entry points into how it can occur through their descriptions of various tools (Hicks, 2008; Inayatullah, 2002; Slaughter & Bussey, 2006). Alongside literature from time perspectives (Harner, 1982; Kauffman & Husman, 2004; Lombardo, 2005; McInerney, 2004) and temporal orientation (Holman & Cohen Silver, 1998; Zimbardo & Boyd, 1999), these are important

starting points for policy and curriculum development. However, as highlighted within the literature review and moreover in responding to the data (Chapters 5 and 6) and supporting key findings (Chapter 7), there is a dearth of research which interrogates the impact of enacted futures studies within curriculum. This study contributes an exemplar of what this research might look like.

Further, I argued that there was a disjunct between claims within educational documents that education prepared students for their future and the ways in which curriculum is advised, constructed and implemented within a classroom. The disjunct or rhetoric regarding the school's role in 'educating for the future' has been clearly supported by the data in this study. Through curriculum documents, I identified FTP as implicit or explicit. Dominantly, implicit futures were present; claims were made about the ways that schools educated for a future, but there was little support within the curriculum advice in the ways these claims were to be enacted. This was how Gough (1990) had previously described futures in curriculum as tacit, token and taken-for-granted. In coming to this study, the teachers also provided data which supported these claims. Prior to their participation, they had given little thought to the explicit ways in which the future was considered within their practices. Moreover, they were unable to conceptualise the ways in which futures education could occur within their classrooms. A temporal intervention in the form of PD and PLTs which increased teachers' futures consciousness led to retrospective awareness of 'how things could be done differently to really educate for the future' (TIMB, I. 4-6).

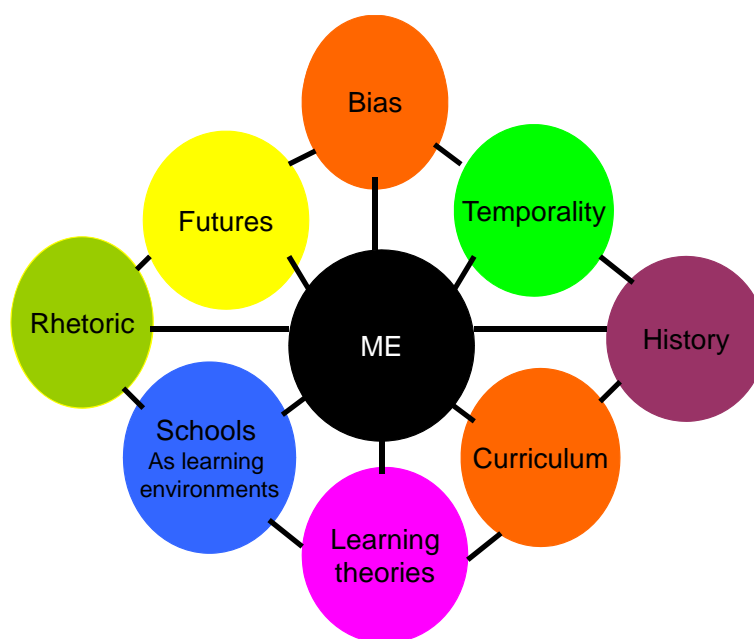
This thesis began with four central concepts to be examined – futures, temporality, curriculum and the school as a place of learning. In my own thinking, these were the four discrete ideas which I needed to make sense of, or make fit together within my experiences as a teacher, and in responding to challenges which had occurred in my life. I referred to this synthesis or cohesiveness in the same way that Piaget (1997) referred to his notion of equilibration. The four concepts were presented in a diagram (see Figure 64) and also formed a framework for engaging with the literature which formed a critical foundation for this research.





**Figure 64 – Revisiting the four central concepts**

Through the literature and data, co-emergences (Begg, 2002; Davis & Sumara, 1997) arose. These were presented as rhetoric, bias, history and learning theories, and were my early attempts to theorise what was apparent through the interplay of the four central concepts. In the same ways that the concepts had been diagrammatically presented, the co-emergences were also presented (see Figure 65). However, in their representation in this form, this conceptualisation remained flat, not layered as had been suggested by the complexity through teachers' discussions and practices, in accordance with literature.



**Figure 65 – Revisiting four co-emergences**

It was not until the data and literature had been refiltered through the original research questions that the micro-interactions and co-emergences appeared. At the macro level, conceptually these co-emergences seemed almost ‘commonsensical’ and neat in the ways that a co-emergence existed between two parallel concepts, but at the micro level there were many interplays which occurred across the concepts, around the concepts, through the concepts. It is this micro level which is extensively explored within Chapter 7 and is represented through the multiple layers of lines and shapes which attempt to capture the various levels at which multiple co-emergences and new knowledge exists. Whilst not in the scope of this thesis, there is much within this reconceptualising and theorising that I am keen to explore amongst the interplay of various findings which have been described. I believe that the findings which have emerged from this research are significant across several fields.

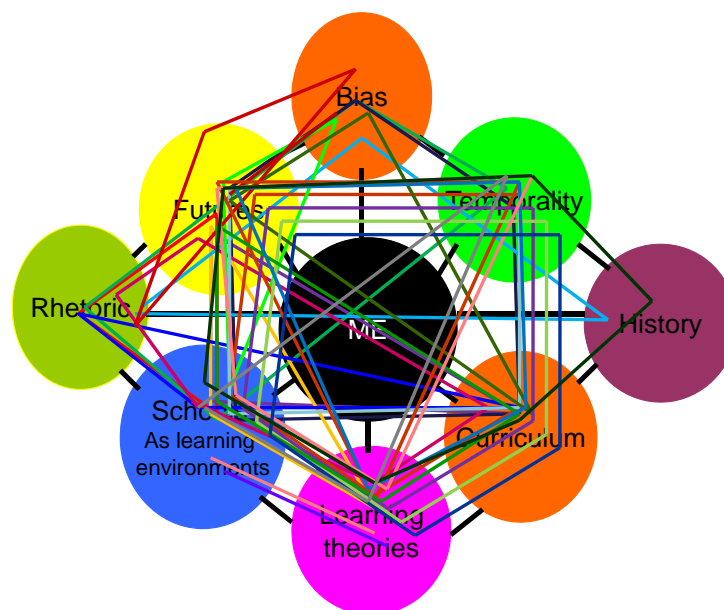


Figure 66 – Complexity and interplay

### ***Significance of this research***

This study is significant for educational and futures fields as it explored connections between the futures engagement of learners, the futures practices of schools, and the futures initiatives of departmental curriculum documents and advisors. Whilst providing some insight into the promise and possibilities of futures education within curriculum, it raises questions for policy

makers and curriculum writers in their claims about educating for the future. Do schools educate for the futures? I have argued that they do not, and also theorised why they do not. This is different to a question which has been implied by this research. Should schools educate for the futures? Again, I have argued that this should indeed be a role of schooling, or learning more specifically. This argument is, however, based upon the assumption that we want our students to be critically engaged and receptive to the myriad of possibilities which exist as a direct result of increased FTP. This is my argument. Is this a belief which is held more commonly?

This study is significant for teachers in rethinking their expertise and roles in educating students. The teachers in this study were strongly committed to the development of learning through immersive, student-directed and problem based Reggio Emilia learning approaches. Futures dimensions offered them an open-ended curriculum space which had previously not been negotiated in order to more deeply understand what their pedagogies really looked like. In doing so, this research demonstrates the rich dynamics in learning relationships which exist when teachers and students are positioned as co-learners (Daws, 2005), with each person bringing their virtual schoolbags (Thomson, 2002) and expertise into the school as a place of learning.

This study is also significant for teachers' professional learning and the hope of transformation. Teachers are busy and hard-working people. As highlighted in the data, they are increasingly under pressure to reform their practices at regular intervals (Crump, 2005). In some instances those changes occur through curriculum knowledge, and in others through curriculum implementation. Teachers require support – physically, emotionally and intellectually – in adopting change (Gunn, 2001). It is not enough to 'send us to one day workshops and expect us to know what to do. Often I've forgot stuff before I get home' (TIMB, I. 1433-1434). Teacher transformation in this project occurred as a result of sustained and varied approaches in supporting teaching learning (Peters, 2001). Moreover, the collaborative nature of professional learning provided a rich forum for identifying and addressing uncertainties and gaps within teacher knowledge. Related to this, however are issues of time and resources.

In closing, there is much to be learned from what has occurred within this study. Schools are under enormous pressure to introduce “new” aspects of curriculum. Futures education is not a new aspect of curriculum – it is an underdone aspect of curriculum. I argue that, as educators, we need to be critical and discriminating in offering our students open-ended, relevant and temporally inclusive learning experiences. Further, we must support each other in the production and dissemination of professional knowledge. As the ongoing cycle of curriculum reviews are undertaken and new curriculum documents flourish, it is crucial that we rethink the role of schooling. It is only through a renewed sense of what school aspires to achieve that we will effectively and critically refocus an attention on the possibilities which exist within a multiplicity of futures.

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*Appendices*

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## Appendix 1 – Ethics approval – Australian Catholic University

Australian Catholic University  
Brisbane Sydney Canberra Ballarat Melbourne



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Human Research Ethics Committee

Committee Approval Form

<p><b>Principal Investigator/Supervisor:</b> Dr Lyn Carter Melbourne Campus <b>Co-Investigators:</b> n/a Melbourne Campus <b>Student Researcher:</b> Debra Bateman Melbourne Campus</p>
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<p><b>Ethics approval has been granted for the following project:</b> Creatively thinking about education: Is there value in Futures Education?</p>
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<p><b>for the period:</b> 27/09/2005 to 31/07/2006</p>
--

<p><b>Human Research Ethics Committee (HREC) Register Number:</b> V200405 100</p>
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The following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans* (1999) apply:

- (i) that Principal Investigators / Supervisors provide, on the form supplied by the Human Research Ethics Committee, annual reports on matters such as:
  - security of records
  - compliance with approved consent procedures and documentation
  - compliance with special conditions, and
- (ii) that researchers report to the HREC immediately any matter that might affect the ethical acceptability of the protocol, such as:
  - proposed changes to the protocol
  - unforeseen circumstances or events
  - adverse effects on participants

The HREC will conduct an audit each year of all projects deemed to be of more than minimum risk. There will also be random audits of a sample of projects considered to be of minimum risk on all campuses each year.

Within one month of the conclusion of the project, researchers are required to complete a *Final Report Form* and submit it to the local Research Services Officer.

If the project continues for more than one year, researchers are required to complete an *Annual Progress Report Form* and submit it to the local Research Services Officer within one month of the anniversary date of the ethics approval.

Signed: ..... Date: .....  
(Research Services Officer, Melbourne Campus)

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## Appendix 2 – Ethics approval – Department of Education



### Department of Education & Training

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Office of Learning and Teaching

SOS003027

Ms Debra Bateman  
3 Rose Avenue  
SURREY HILLS 3127

Dear Ms Bateman

Thank you for your application of 22 June 2005 in which you request permission to conduct a research study in government schools titled: *Creatively thinking about the future: Is there value in Futures Education*.

I am pleased to advise that on the basis of the information you have provided the application is approved in principle subject to the conditions detailed below.

1. Should your institution's ethics committee require changes or you decide to make changes, these changes must be submitted to the Department of Education and Training for its consideration before you proceed.
2. You obtain approval for the research to be conducted in each school directly from the principal. Details of your research, copies of this letter of approval and the letter of approval from the relevant ethics committee are to be provided to the principal. The final decision as to whether or not your research can proceed in a school rests with the principal.
3. No student is to participate in this research study unless they are willing to do so and parental permission is received. Sufficient information must be provided to enable parents to make an informed decision and their consent must be obtained in writing.
4. As a matter of courtesy, you should advise the relevant Regional Director of the schools you intend to approach. An outline of your research and a copy of this letter should be provided to the Regional Director.
5. Any extensions or variations to the research proposal, additional research involving use of the data collected, or publication of the data beyond that

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DX 210083

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Melbourne, Victoria 3001



normally associated with academic studies will require a further research approval submission.

6. At the conclusion of your study, a copy or summary of the research findings should be forwarded to the Research and Development Branch, Department of Education and Training, Level 2, 33 St Andrews Place GPO Box 4367 Melbourne 3001.

I wish you well with your research study. Should you have further enquiries on this matter, please contact Chris Warne, Project Officer, Research on (03) 9637 2272.

Yours sincerely



**Sandra Mahar**  
Assistant General Manager (Acting)  
Research and Innovation Division

27/7/2005

enc

## ***Appendix 3 – Letters to participants***

Australian Catholic University  
Brisbane Sydney Canberra Ballarat Melbourne



Australian Catholic University Limited  
ABN 15 050 192 660  
Melbourne Campus (St Patrick's)  
115 Victoria Parade Fitzroy VIC 3065  
Locked Bag 4115 Fitzroy MDC VIC 3065  
Telephone 613 9953 3000  
Facsimile 613 9953 3005  
www.acu.edu.au

### **INFORMATION LETTER TO PARTICIPANTS**

#### **TITLE OF PROJECT:**

CREATIVELY THINKING ABOUT THE FUTURE: IS THERE VALUE IN  
FUTURES EDUCATION?

#### **NAMES OF SUPERVISORS:**

DR. LYN CARTER  
DR. ANDREA MCDONOUGH

#### **NAME OF STUDENT RESEARCHER:**

MS. DEBRA BATEMAN

#### **NAME OF PROGRAMME IN WHICH ENROLLED:**

DOCTOR OF PHILOSOPHY (PHD)

This project investigates the role a school plays in preparing students for their futures, and the way that this role is both presented through school policies and curriculum documents, and realised through current teaching and learning practices. The information will be gathered using tape-recorded interviews with both students and teachers, observations in classrooms, and through audits of current curriculum documents both internal and external to the school.

The interviews will be held within the familiar environment of the school. This study does not seek to make value judgements or appraise someone's ability to think about the future, but rather seeks to identify what current thinking about the future is, in regards to the role of the school. Should the participant in this study experience any discomfort or choose not to further participate, he/she may withdraw from interviews or their involvement at any point of this study.

There are a range of participants who will be involved in this study. Each participant will be invited to participate in an interview, focussing on how he/she views the future, and the role he/she considers that a school plays. I will, where relevant, make observations within the learning environment of how the futures dimension is developed. Whilst students may participate in 1-2 interviews, teachers and curriculum leaders might be involved in a number of formal and informal discussions.

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00004G, 00112C, 00873F,  
00885B

This research will form a significant part of my doctoral thesis, to be completed by 2010. I also anticipate that findings associated with this project will be published in professional journals, and field documents. This research is significant for a number of reasons. Primarily, this research is important as the world is changing at a rapid pace, and critical appraisal of current educational practices and their relevancy or appropriateness is pertinent. Secondly, schools advertise their role in preparing students for the future, or describe students as future citizens and this project seeks to identify and describe how this role is possible within a busy curriculum framework. Thirdly, as a result of being involved in this study, consciousness about learning for the future increases and becomes more accessible to teachers and learners.

Participants are free to refuse consent altogether without having to justify that decision. Similarly, participants may withdraw their consent and discontinue participation in this project at any time without giving a reason. Withdrawal from this project will not prejudice student's future care or academic progress in anyway.

Confidentiality will be ensured for minor participants in this study. Names will be suppressed at all times, and data will be destroyed at the completion of analysis. Staff who choose to protect their identity will also have names and identifiable character traits suppressed, however in the event that a staff member wants to be acknowledged for his/her contribution to this study, these requests will be also observed. Results, in general, will be reported as case studies as opposed to individual views and practices.

*Any questions regarding this project should be directed to the Supervisor and the Student Researcher*

*Debra Bateman (Student Researcher) or Dr. Lyn Carter (Supervisor)*

*On telephone number 03 9953 3282*

*Trescowthick School of Education*

*Australian Catholic University  
St Patrick's Campus  
Locked Bag 4155DC  
Fitzroy, Vic. 3065*

All findings of this project will be made available to all participants through their associated schools. Alternatively, if further feedback is required I would encourage participants to make contact with myself or my supervisor, after July 2007.

This study has been approved by the Human Research Ethics Committee at Australian Catholic University

In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Student Researcher or Supervisor has not been able to satisfy you, you may write to the Chair of the Human Research Ethics Committee (Victoria)

VIC: Chair, HREC  
C/o Research Services  
Australian Catholic University  
Melbourne Campus  
Locked Bag 4115

FITZROY VIC 3065  
Tel: 03 9953 3157  
Fax: 03 9953 3315

*Any complaint or concern will be treated in confidence and fully investigated. The participant will be informed of the outcome.*

If you agree to participate in this project, you should sign both copies of the Consent form, retain one copy for your records, and return the other copy to the Student Researcher.

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## Appendix 4 – Participant consent form

Australian Catholic University  
Brisbane Sydney Canberra Ballarat Melbourne



Australian Catholic University Limited  
ABN 15 050 192 660  
Melbourne Campus (St Patrick's)  
115 Victoria Parade Fitzroy VIC 3065  
Locked Bag 4115 Fitzroy MDC VIC 3065  
Telephone 613 9953 3000  
Facsimile 613 9953 3005  
www.acu.edu.au

### CONSENT FORM

#### TITLE OF PROJECT:

CREATIVELY THINKING ABOUT THE FUTURE: IS THERE VALUE IN FUTURES EDUCATION?

#### NAMES OF SUPERVISORS:

DR. LYN CARTER  
DR. ANDREA MCDONOUGH

#### NAME OF STUDENT RESEARCHER:

MS. DEBRA BATEMAN

#### NAME OF PROGRAMME IN WHICH ENROLLED: DOCTOR OF PHILOSOPHY (PHD)

I ..... (*the participant*) have read (*or, where appropriate, have had read to me*) and understood the information provided in the Letter to Participants. Any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realising that I can withdraw at any time (*or stipulate the deadline by when the participant may withdraw*). I agree that research data collected for the study may be published or may be provided to other researchers in a form that does not identify me in any way.

NAME OF PARTICIPANT: .....  
(block letters)

SIGNATURE ..... DATE .....

SIGNATURE OF SUPERVISOR: .....

DATE:.....

[and, if applicable]

SIGNATURE OF STUDENT RESEARCHER: .....

DATE:.....

CRICOS registered provider:  
00004G, 00112C, 00873F, 00885B



## ***Appendix 5 – Exemplar – extract of transcribed focus group***

- 1 PhD Data: Tape Transcript (PDFG0)  
2  
3 Professional Development session @ Wooranna Park Primary School.  
4  
5 Me: The idea of thinking about the future is quite a complex one because the starting  
6 point for thinking about the future begins with yourself . . . The way in which  
7 you will integrate, or develop that futures consciousness within your group, will  
8 be very much effected by how you're seeing your personal view of the future  
9 and also another think that comes into it, is what you see as your role as a  
10 teacher in constructing some sort of notion of the future. We talk about in  
11 schools, lighthouse schools, schools of the future, developing citizens of the  
12 future . . . but it's rare that we have the opportunity to engage in discourse about  
13 what future we're actually referring to. . .  
14  
15 Teacher: I never have . . .  
16  
17 Me: And, that the future that we're talking about isn't necessarily the same future  
18 that the students in our classroom will be thinking about. Because, we don't  
19 realise the degree to which they are confronted by images of the future . . . a  
20 construction of a future and even our curriculum documents . . . do that for us  
21 create some sense of a future we're working towards. We just don't think about  
22 critically and in those kind of terms.  
23  
24 Me: So, what I thought I'd do as a starting point . . . Just thinking about the idea the  
25 human mind as a way of unlocking the future, and futures education is about  
26 empowering . . . it's about believing that we have the ability to shape things to  
27 make a difference. And then a school such as this, . . . it's about breaking some  
28 of the traditions, it's about breaking some of the beliefs and stigmas that some  
29 of these people actually have about themselves – not all, because we can't  
30 generalise like that. But we can say that "you won't necessarily be working in a  
31 factory, that there are other areas in which you might be working". We can open  
32 it up to a dialogue or conversation. . . . I want to run through some skills . . .  
33 And I want to talk about how you would like this to run in your classrooms..  
34 How do you actually want to organise this? How can we work together to create  
35 a different or changed way of learning? Ultimately, what kinds of projects will  
36 meet the school's philosophy of education? It is valuable to have some projects  
37 to be worked towards. And based on some pedagogy, we want to be able to  
38 problematise learning about the notion of the future for students to engage.  
39 Because if it's there, and it's given, the purpose is not apparent. So, if we can be  
40 problematising . . . Now, there's a pile of stuff we can be using as stimulus  
41 materials - even for you some beginning activities . . . stories, audio-visuales,  
42 movies.  
43  
44 Me: How do you think about the future? What kind of future do you think that  
45 you're preparing students for?  
46  
47 Mary: Are you talking about in regards to their schooling, or what they view?  
48  
49 Me: Any aspect of their future . . .  
50

## **Appendix 6 – Interview questions**

### **A Guideline to interview questions @ Wooranna Park**

#### ***Teachers***

##### **Contextualising questions**

What is your vision of the future?

How has that changed through the course of this project?

How has this project challenged some of your ideas about the future?

Did you and your students have similar ideas about the future?

How were those ideas different?

How would you compare the engagement of yourself and your students within this project? (Who found it easier? On what basis?)

##### **The project from the outside**

What did you understand the project to be about?

Can you describe the process we have undertaken in this project since it began?

What do you consider the role of a school to be?

What then do you consider your role as a teacher?

##### **Your project**

Tell me about your project

What were the strengths of your project?

What were the limits of your project?

What was the highlight of your project? For learning? Personally?

What did you learn from your project?

What were the key understandings/learnings that your students got from this project?

What evidence can you provide for the development of your project?

##### **The future of Futures in your school and teaching life**

Were you familiar with Futures Education prior to the beginning of this project?

What is the significance of Futures Education for learning?

Is it appropriate for Primary School children? Beyond?

What are the key learnings you have developed from Futures Education?

What would you see as the possibilities for Futures Education in learning?

Can you foresee yourself using Futures perspectives in future units of investigation?

##### **The facilitator**

How have I supported your personal and academic learning in this project?

Has the support been sufficient?

Did you have enough opportunity to fly with your own ideas?

Did we share the way in which the projects emerged?

Did the projects reflect the teaching and learning philosophy of the school?

#### ***Curriculum Coordinator***

##### **The School**

How would you describe Wooranna Park Primary School?

Is there a current school profile available?

What is the teaching and learning philosophy of the school?

How is the school organised?

Is there any significant information about this school?

**Contextualising questions**

What is your vision of the future?

How has that changed through the course of this project?

How has this project challenged some of your ideas about the future?

Did you and the other teachers have similar ideas about the future?

Did you observe that teachers and students shared ideas about the future?

How were those ideas different?

How would you compare the engagement of yourself, your staff and your students within this project? (Who found it easier? On what basis?)

**The project from the outside**

What did you understand the project to be about?

Can you describe the process we have undertaken in this project since it began?

What do you consider the role of a school to be?

What then do you consider your role as a teacher?

**Unit projects**

Can you describe the projects undertaken?

What were the strengths of the projects?

What were the limits of the projects?

What was the highlight of the projects? For learning? Personally?

What did you learn from the projects?

What were the key understandings/learnings that the students got from these projects?

What evidence will best exemplify the development of these projects?

**The future of Futures in your school and teaching life**

Were you familiar with Futures Education prior to the beginning of this project?

What is the significance of Futures Education for learning?

Is it appropriate for Primary School children? Beyond?

What are the key learnings you have developed from Futures Education?

What would you see as the possibilities for Futures Education in learning?

Can you foresee yourself using Futures perspectives in future units of investigation?

**The facilitator**

How have I supported your personal and academic learning in this project?

Has the support been sufficient?

Did you have enough opportunity to fly with your own ideas?

Did we share the way in which the projects emerged?

Did the projects reflect the teaching and learning philosophy of the school?



**Appendix 7 – Wooranna Park’s Raison D’etre**

**WOORANNA PARK PRIMARY**

**La raison d’etre**

(the reason for being)

Principles of Learning	Pedagogical Practice	Assessment	Organisational Structures	Physical Environment	Educational Theorists
<p><i>“The mind is not a vessel to be filled, but a fire to be ignited.”</i> Plutarch</p>	<p><i>“The art of teaching is developing into the art of teaching children to teach themselves.”</i> Anonymous</p>	<p><i>“Formative assessment is part of students ongoing learning and simultaneously informs future directions.”</i> Capp</p>	<p><i>“Change the system, not the child. Do things with children, not to them.”</i> Betts.</p>	<p><i>“Design is primarily about purpose and function - out of which grows aesthetics”.</i> Featherston.</p>	<p><i>“It is easier to assimilate a thousand new facts in any field than to assimilate a new point of view of a few already known facts.”</i> Vygotsky.</p>
<p>Children are active, important members of a variety of communities, which may include: family, school, ethnic cultures, sporting teams and friendship groups; their understanding of the world develops through these social and cultural interactions.</p> <p>Education must value and support democracy. The rights of a child necessitates they have a ‘voice’ which is actively listened to. Children are to be respected.</p> <p>Learning is life long. Children are born with the potential to be autonomous, curious, powerful learners with a desire to make meaning of all experiences they encounter.</p>	<ul style="list-style-type: none"> <li>Communities of learners</li> <li>Collaborative learning</li> <li>Modelling collaboration through team teaching</li> <li>Use of mentors</li> <li>Co-creation of the curriculum by children, parents and teachers</li> <li>Exploration of ‘big ideas’; issues important to children, families, community and their future</li> <li>A focus on the exploration of values, attitudes and character development by the school community</li> <li>Exploration of and listening to the ‘100 languages of children’ / Multi-literacies developed</li> <li>Documentation to make learning visible</li> <li>Choices in learning</li> <li>Negotiating Learning</li> <li>Active citizenship, including student leadership teams and committees</li> <li>Inquiry based learning</li> <li>Learning to access different ways of learning</li> <li>Learning to access knowledge</li> <li>Learning thought passion studies</li> <li>Sustaining attitudes of</li> </ul>	<ul style="list-style-type: none"> <li>Analysis of collaborative learning initiated by children, within the learning communities</li> <li>Analysis of questioning and discussions of children</li> <li>Documentation of the learning process includes teacher’s and children’s voices.</li> <li>Analysis of parent involvement in the learning program</li> <li>Parent surveys</li> <li>Peer assessment</li> <li>Documentation of the ‘100 languages of children’ to make learning visible; displayed through wall panels or folders</li> <li>Weekly analysis of Learning Journey forms which document the negotiated learning (children, parents and teachers involved in Years 2-6)</li> <li>Student surveys</li> <li>Digital and hard copy portfolios which share the journey of the child through the school</li> <li>Student led conferences mid year and as required</li> <li>End of year portfolio evening</li> </ul>	<ul style="list-style-type: none"> <li>Communities of learners (averages 48 children in Years Prep-4, 100 children in Year 5/6 complex) stay together throughout their learning journey in the school. The support and interaction of families is viewed as part of this community</li> <li>Teachers, children and integration aides work collaboratively within learning complexes</li> <li>Mentor relationships developed in meaningful contexts</li> <li>Flexible timetabling allows for varying forms of collaborative learning and negotiated learning</li> <li>Links between families and school: <ul style="list-style-type: none"> <li>open classrooms from 8:30 to 9:00am for parents to collaborate with their child in beginning the school day and throughout the day</li> <li>junior school 3:15pm reflection time, parents welcome</li> <li>weekly newsletter, classroom alternating with school publication</li> <li>parent meetings with open question time</li> <li>communication diaries</li> <li>exhibitions of learning throughout the year</li> </ul> </li> <li>Open ended questions focus discussion forums on specific big ideas (involving children and teachers); reflection of which informs planning</li> <li>Analysis and interpretation of documentation: observations, artefacts and conversations; informs practice</li> <li>Child ‘Learning Journey’ proforma used to document negotiated learning</li> <li>Class meetings / Class Parliament are a forum for student initiated ideas</li> <li>Learning agreement time (LAT) each day</li> <li>Daily ongoing reflection on learning <ul style="list-style-type: none"> <li>Self reflection</li> <li>Group reflection</li> <li>Teacher directed reflection</li> </ul> </li> <li>Weekly Individual or small group meeting with home teacher</li> </ul>	<ul style="list-style-type: none"> <li>Large areas created to allow for communities of learners, involving collaborative teaching</li> <li>Reflection of the children in the environment.</li> <li>Shared facilities and tools for learning</li> <li>Purposeful selection and design of every physical element for a welcoming, amiable, purposeful, clarified environment</li> <li>Physical design to support comfortable, aesthetically pleasing learning environments</li> <li>Diverse spaces are always available to the children, enabling children to move freely from one setting to another throughout the day</li> <li>On going maintenance, enrichment and evolution of the environment.</li> <li>Some areas are semi permanent (stable) whilst enabling flexibility for temporary change</li> <li>Provision of home group</li> </ul>	<ul style="list-style-type: none"> <li>Cultural- Historical theory: Vygotsky</li> <li>Socio-cultural theory: Dewey, Rogoff</li> <li>Community of learners: Dewey (1938) Rogoff</li> <li>Reggio Emilia Project</li> <li>Radical Local theory: Hedegarrd &amp; Chaiklin</li> <li>Reggio Emilia Project</li> <li>Habits of the Mind - Costa</li> <li>DATT Tools - De Bono</li> <li>Autonomous Learning Model - Betts</li> </ul>

<p>The knowledge and technological age has transformed the concept of being 'educated'.</p> <p>People construct and co-construct meaning. People bring to any learning situation, pre-existing understandings and theories, which are always partial. Learning is not linear.</p> <p>People learn through engagement in complex experiences, in which they make relevant, purposeful connections. Skills and a body of knowledge are needed, to acquire success in life.</p> <p>People have particular pre-dispositions to learning styles, modalities of learning, and intelligences.</p>	<p>self responsibility and self motivation for learning.</p> <ul style="list-style-type: none"> <li>• Development of time, organisational and change management skills</li> <li>• ICT as a research, documentation and creative tool</li> <li>• Teachers as co-learners with children and as researchers</li> <li>• Team teaching to promote reflection through dialogue</li> </ul> <ul style="list-style-type: none"> <li>• Listen for pre-existing understandings and theories.</li> <li>• Differentiation in the program to cater for different abilities, interests, experiences, attitudes and temperaments</li> <li>• Scaffolding of learning in meaningful contexts,</li> <li>• Meta-cognitive skill development</li> <li>• Reflection on learning</li> <li>• Philosophical questioning</li> <li>• Research based projects</li> <li>• Authentic / Real Life learning Tasks</li> <li>• Discipline knowledge and skills are learnt in context</li> <li>• Trans-disciplinary learning</li> <li>• Higher order thinking</li> <li>• Deep learning: content and processes</li> <li>• Critical, lateral and creative thinking</li> <li>• Meta-cognitive understandings of learning</li> <li>• Personal differences are valued</li> <li>• Promoting a positive self esteem, self confidence, resilience and tenacity.</li> <li>• Pedagogical practices cater for varying dispositions of learning</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment criteria is made explicit though, learning profiles, key understandings and rubrics</li> <li>• Analysis of discussion forums re teacher participation</li> <li>• Teacher professional development plans</li> <li>• Teacher performance reviews</li> </ul> <ul style="list-style-type: none"> <li>• Tracking of students understandings through a variety of techniques: checklists, anecdotal records, interviews, school developed profiles of learning and key understandings</li> <li>• Reflection by children, parents and staff</li> </ul> <ul style="list-style-type: none"> <li>• 'Exhibitions of children's work through a variety of languages which also demonstrate the process of learning through documentation</li> <li>• Level of engagement of children</li> </ul> <ul style="list-style-type: none"> <li>• Collaborative analysis of preferred dispositions of learning involving child, parents and teachers</li> </ul>	<p>(conferencing) to discuss learning and personal welfare</p> <ul style="list-style-type: none"> <li>• Staff have collaborative planning time</li> <li>• Weekly staff meetings and team level meetings with a pedagogical focus (Administration through emails and school intranet)</li> <li>• Teacher professional development includes: mentors, professional reading, interstate and overseas travel, university links, Designer PD</li> </ul> <ul style="list-style-type: none"> <li>• Target teaching to scaffold learning ( group size 1-15 )</li> <li>• Workshops to promote opportunities for LAT ( group size 15-25 )</li> <li>• Tracking of children by home teacher ( average 24 children )</li> <li>• Variety of grouping practices used: interest, need based, random selection, child selected</li> <li>• Limited use of specialist programs outside of learning complexes ( Japanese and Physical Education )</li> </ul> <ul style="list-style-type: none"> <li>• Planning by teachers of ' Big ideas' to be addressed during the year, implementation of which is a collaborative process between children, parents and teachers</li> <li>• High level teacher knowledge of the Victorian Essential Learning Standards to implement Government policy within a contextual learning framework</li> <li>• High level teacher knowledge of current research and teacher initiated school based research, informs understandings of how people learn and is reflected in practice</li> <li>• High level teacher knowledge of learning dispositions informs all aspects of pedagogy</li> </ul>	<p>meeting areas</p> <ul style="list-style-type: none"> <li>• Display areas for 2D, 3D and multi media work</li> <li>• Other purposeful areas within the school             <ul style="list-style-type: none"> <li>➢ Art Studio: large projects</li> <li>➢ Research Centre: Literacy resources</li> <li>➢ Da Vinci Centre: radio station, blue screen</li> <li>➢ Asian studies: Japanese resources</li> <li>➢ School hall : presentations/ whole group meeting space</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>• Creation of functional areas within the space for specific purposes</li> <li>• Provision of diverse and rich settings to support a wide range of experiences- each setting to have an appropriate sense of place enclosure and to provide clues as to use.</li> </ul> <ul style="list-style-type: none"> <li>• Each type of experience requires different facilities (space, boundaries, services, surfaces, storage, acoustics, furniture, learning materials)</li> <li>• Diverse settings are seamlessly connected.</li> <li>• Clear circulation routes</li> </ul> <ul style="list-style-type: none"> <li>• Provide discreet settings with appropriate enclosure to avoid visual and aural distraction.</li> <li>• Attractive provisions of loose items which provoke, attract, stimulate, support and engage children's minds and bodies.</li> <li>• Acoustic: design for expression and listening.</li> <li>• Freedom to move within the spaces</li> </ul>	<ul style="list-style-type: none"> <li>• Constructivist learning - Bruner</li> <li>• Scaffolding - Bruner</li> <li>• Zone of Proximal Development - Vygotsky</li> <li>• Reciprocity between Spontaneous and Scientific Concepts - Vygotsky</li> </ul> <ul style="list-style-type: none"> <li>• Four processes model of Literacy - Luke &amp; Freebody</li> <li>• Literacy - Smith</li> <li>• Mathematics - Lovett, Booker</li> </ul> <ul style="list-style-type: none"> <li>• Learning styles - Gregoric</li> <li>• Learning Modalities - Coil</li> <li>• Intelligence Theories:             <ul style="list-style-type: none"> <li>➢ Emotional Intelligence - Coleman</li> <li>➢ Multiple Intelligence - Gardner</li> <li>➢ Creative, Academic, Practical Intelligence - Sternberg</li> </ul> </li> </ul>
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**The above principles, beliefs and practices are not discrete, but interrelate with each other to form a multitude of nuances.**