‘The Millennial School: A Theoretical Basis for Curriculum Design in a Time of Educational ‘Transgression’

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Abstract
This study is an insider, practitioner, case study presented under a narrative framework, occurring within one well regarded and successful school in the western suburbs of Melbourne. It is a study about the relationship between theory, practice and values in a rapidly changing world, based on evidence from my own experience and belief. The thesis examines the changing nature and characteristics of curriculum design and development in a school at the beginning of the 21st century (2000 – 2009). It critically traces my journey as I develop a living curriculum theory of practice to describe the processes used to produce and implement a more holistic curriculum relevant to education today. It describes and analyses the conceptual models and tools used to design, develop and implement that curriculum. The research reflects significant global changes within a local setting. In particular the move to personalization of curriculum, the inclusion of the ‘thinking curriculum’ and a more holistic approach is explored. This has resulted in the development of a learning ‘lattice’ as a model of curriculum along with a number of curriculum design tools. A detailed narrative approach is taken to the transition from one paradigm to the next in what I describe as an educational ‘transgression’ (in the geological sense). The narrative is essentially a single case study organised chronologically into 6 years exploring different elements of this dramatic transition. Extensive use is made of diagrams to both present data and show developing ideas. Future scenarios are also used to explore the directions of the transgression. In this study a ‘living educational theory’ (Whitehead 1989, 1993, McNiff and Whitehead 2005) leads to a ‘living curriculum theory’ for contemporary Australian schools which allows teachers and students to maximise planning and learning in an increasingly complex educational environment in which they face ever growing demands. 21st century curriculum planning characteristics are identified and incorporated into an appropriate curriculum model. A rigorous and systematic approach to sustaining this model is also described. Teachers are seen as designers of curriculum rather than mere implementers. The value of this type of insider practitioner, narrative research is also endorsed.
Declaration

This is to certify that

- the thesis comprises only my original work towards the PhD
- due acknowledgement has been made in the text to all other material used,
- the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices or the thesis is [number of words] as approved by the RHD Committee.

Signed: __________________________

Brian R. Mundy

June 2012
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A thesis such as this, considered and written over many years, could not have been written without the support and encouragement of family. I thank my children Elliott, Chris and Marissa and my partner Eileen for their on-going encouragement, feedback and support as I took time from our world together to think, write and construct this study. Without that support this thesis would not exist.
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Chapter 1 An Introduction

This is a thesis about the changing nature of curriculum and curriculum design in schools over the first decade of the 21st century and the response of one teacher and his school to those changes. The study describes an educational transgression and identifies the increasingly complex expectations that teachers face as they deal with these changes. Managing these increasing demands is a major task for all teachers. Constructing curriculum using older models is no longer seen as appropriate.

This study adopts a narrative approach to look at the story of one teacher as he responds to these changes, and develops and implements curriculum with appropriate 21st century characteristics. A living curriculum theory of practice is developed that reflects these characteristics and a new more holistic model of curriculum is adopted. This theory developed over the course of my 6 year case study. This case forms the basis of the data for this narrative study.

The story is set in a highly disadvantaged school in the West of Melbourne that has been recognised as successful against a number of external measures. The narrative is told using three separate but intertwining research voices, an insider practitioner voice, a narrating voice and a metacognitive, more philosophical voice that each provide distinct lenses into this story.

The value of narrative
In its simplest definition narrative means story. This narrative inquiry is my story. “Narrative scholars would generally agree that a narrative is not simply a factual report of events, but instead one articulation told from a point of view that seeks to persuade others to see the events in a similar way.” (Riessman 2008, p.187). Consequently, a first person approach has been taken to the writing of this thesis. In my work I frequently support my statements with written extracts and/or diagrams produced by both myself and others in our collaborative work. But this
narrative traces my story, told from my perspective even though much of the work has been completed in teams or has been informed by the views of others.

“Narratives do not establish the truth of...such events, nor does narrative reflect the truth of experience. Narratives create the very events they reflect upon. In this sense, narratives are reflections on-not of-the world as it is known.”(Denzin 2000 pp. xii-xiii in Riessman 2008, p.188)

In this thesis I have used narrative analysis as a means to analyse and interpret the content using the 3 research voices. It has also been a way to analyse the issues, to evaluate my developing theory and to synthesise my ideas. Analysis has occurred within the narrative as well as during the discussion chapter. The story and my data are presented as an extended insider narrative. This is the core of the thesis. Meaning has been made within the rich context described.

**The research Question**
How does a participant agent encounter, develop and process theory and ideas to develop curriculum in their role as a teacher and curriculum leader during an educational transgression?

This question has led to three specific research goals:


2. An insiders’ examination of the complex processes and practices involved in designing and implementing 21st century curriculum within the described educational transgression.

3. A documentation, analysis and interpretation of the process involved in completing this narrative.

These goals will have been achieved when the living curriculum theory has been developed and presented. 21st century curriculum design processes have been trialled and proposed and the value of the narrative has been identified.
**The Context Spatial and Temporal**

As this study is firmly embedded in the narrative tradition, it is hence very important to begin this study with a detailed examination of the spatial and temporal contexts of the study. 1978 was a long time ago, but in some sense it seems just like yesterday, as that was when I first started teaching at Green Gully Secondary College (not its real name). It is a place I have known longer than my home, a place I care about and a place I want to see continuously improve. But it is not just this school that I am interested in but all others as I see education as being in the middle of a significant change a true paradigm shift (Kuhn, 1970). This change I regard as an educational transgression wherein one educational environment is replaced by another. This study will trace my work as a classroom teacher and a curriculum innovator at the school. Although the setting is Melbourne I will be examining curriculum design and implementation through a wide range of perspectives. The findings of my study will be relevant to schools as I explore how curriculum in the changing educational paradigm can be designed and implemented, to produce an appropriate 21st century curriculum. The findings may also be valuable as the study school has become highly regarded as an example of a successful school operating in a highly disadvantaged area.¹

**Role of context**

The role of local context is important in any narrative study. “And stories must always be considered in context, for storytelling occurs at a historical moment with its circulating discourses and power relations.” (Riessman 2008, p.8). The connection of context and audience is also important because I have been acting as a local practitioner, as an insider and a collaborator with other teachers, and have produced curriculum materials for that context. Some of the value of this study lies in the detail in the narrative.

Teacher knowledge researchers have argued for the need to bring teacher reflection, teacher first-hand experience, teacher wisdom,

¹ The school was selected as part of a study by Melbourne University and the Department of Education as an example of a high performing disadvantaged school in 2010. The school also performed above expected levels for this type of school according to the NAPLAN results of 2010. The on-track data in 2009 was released at the school because of the excellent results for post secondary pathways achieved by students from the school.
and therefore teacher voice into the research conversation. (Atkinson and Rosiek, 2009, p. 176)

I worked within this context for 31 years and contributed significantly as a curriculum leader. Having held several curriculum leadership roles\(^2\) and been involved in curriculum committee meetings for more than 25 years I brought to this study local curriculum and contextual expertise. The curriculum theory that has emerged from this context has been shared at conferences and seen to have value in other settings. Narrative investigation attends to time and place and therefore context. I have tried to keep intact the detail of my story to increase its value for transfer, significance and also its validity.

Stories don’t fall from the sky (or immerge from the innermost “self”); they are composed and received in contexts-interactional, historical, institutional, and discursive-to name a few. (Riessman 2008, p.105).

Context is very important when looking at individual teachers’ narratives. Within my own school and even within the one faculty, different narratives might emerge as teachers “speak in individualised and dissonant voices that have been shaped by immense variations in the contexts in which they teach.” (Atkinson and Rosiek, 2009, p. 177). Other narratives would emerge across the local area and the region within Victoria. Processes and practices that have been developed within my own context have been shared and replicated within the school and the curriculum developed collaboratively through these local processes, has now been shared within the school and in wider settings. “Although it may be “natural,” telling and writing stories is invariably situated and strategic, taking place in institutional and cultural contexts with circulating discourses and regulatory practices, always crafted with audience in mind.” (Riessman 2008, p.183). Context has been critical within this narrative and has influenced this story dramatically. The immediate school context, the local community context, the wider Western suburban metropolitan Melbourne context, the Victorian context and the national and

\(^2\) Positions held included Science Coordinator, Curriculum Coordinator, Learning technologies Coordinator and Individual Learning Plans coordinator.
International contexts have all had an impact. These multiple layers have all influenced my work in one way or another.

Figure 1 Aspects of the local context

Figure 1 identifies some aspects of the immediate local context that impact upon the school environment. The nature of the school community, the background of the staff, the disadvantaged character of the community, its history, the resources available are just a few. Many more have been identified within the graphic. “Finally, we can see that teacher voice(s) are profoundly shaped by the local district, region, and state in which the teachers practice.” (Atkinson and Rosiek, 2009, p. 192) Across the district there has also been the pressure to amalgamate and change the nature of the curriculum we offer. Work supported by the Leading Schools Fund (LSF) program illustrated a commitment to change and to offering a more personalised approach to the curriculum. Work to incorporate learning technologies into the curriculum has reflected the policies of the Victorian government. The development of an open learning space and improved
pedagogical practices reflect the trends seen across Victoria, Australia and in the wider global setting.

**The temporal context**

The first decade of the 21st century has been a time of great change in education. This change has been described by many authors as a paradigm shift. (Costa 1997, Lindberg 1999, Marshall 1999, Beare 2001, Krakow 2001, Cheng 2002; Smith and Lovat 2003; Caldwell 2003; Demchenko 2005; and Rogerson 2005). Schools of the 20th century were built to similar designs as those of the 19th century. They fulfilled similar purposes and teaching and learning closely resembled that of the previous 100 years. But by the end of the 20th century this was starting to change. Significant changes in building designs, curriculum, pedagogy and practice were starting to occur around the globe. These have begun occurring in schools here in Victoria including Green Gully the school where I taught, learnt and researched.

In 1962 Kuhn first published ‘The Structure of Scientific Revolutions’ and in doing so perhaps changed our understanding of the world and its history for ever. The term paradigm change was to enter the language and with it came a significant shift in understanding about how our view of the world can change.

Led by a new paradigm, scientists adopt new instruments and look in new places. Even more important, during revolutions scientists see new and different things when looking with familiar instruments in places they have looked before. It is rather as if the professional community had been suddenly transported to another planet where familiar objects are seen in a different light and are joined by unfamiliar ones as well. (Kuhn, 1970, p. 111)

A paradigm shift changes our perception, it changes views on relationships and reality, it provides an entirely different perspective upon the nature of ideas, our world or in my case, schools and schooling.
A word on curriculum

The core of this study is about how curriculum is designed and implemented at one school. Many authors have developed their own definitions of curriculum, e.g. Pratt (1980, p. 4), “A curriculum is an organised set of formal educational and/or training intentions”. I have used the word more in the sense of Marsh (2004, p.66) who defines it as “an interrelated set of plans and experiences that a student completes under the guidance of the school”. Wiggins and McTighe (2005, p.6) have a more extensive statement regarding curriculum that is very relevant.

The etymology of the word suggests this: Curriculum is the particular “course to be run” given a desired endpoint. A curriculum is more than a traditional program guide, therefore; beyond mapping out the topics and materials, it specifies the most appropriate experiences, assignments, and assessments that might be used in achieving goals.....They specify what the student should have achieved upon leaving, what the learner needs to do to achieve, and what the teacher needs to do to achieve the results sought. In sum, they specify the desired output and means of achieving it, not just a list of content and activities.

For me curriculum includes the specified outcomes (knowledge, skills, values, concepts), the activities and processes to develop these understandings and skills, along with the assessments that demonstrate understanding and the outcomes.

The curriculum and pedagogy³ at Green Gully is changing rapidly. The Victorian Essential Learning Standards (‘VELS’, DET, 2005) ⁴ were considered as we designed the new curriculum. The study school is part of the Victorian state school system, consequently there are expectations, policies and priorities that the school has to adopt. We focused on personalising the curriculum which allowed us to report on students taking more responsibility for their own schooling. The models and frameworks I developed and trialled infused this into the curriculum planning

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³ Pedagogy: I have used this term as the art and science of how we teach
⁴ VELS represents the Victorian government’s current curriculum guidelines, the Victorian Essential Learning Standards, DET is the Department of Education and Training
process. A 20th century curriculum and its older pedagogy, was succeeded by new curriculum and pedagogy, in a process like that seen when one environment is replaced by another. Indeed there are so many innovations and changes occurring within this paradigm shift, that I compare the change to a geological transgression, when one environment is totally replaced by another over time. Consequently, I refer to an educational transgression in the title of this thesis (see figure 2). Some changes were initiated as a result of the publication of the Victorian Blueprint for Education (DET, 2004), but others arrived in schools as a result of workshops undertaken by staff or through professional reading. Practice and curriculum responded to these. In this study a detailed case study has been used to describe and reflect on the arrival and impact of these changes and innovations on the curriculum landscape, its design and implementation.

Figure 2 An Educational transgression
Changes are happening in schools. Students rather than teachers are taking centre stage. This research looks at the need to develop a ‘living curriculum’ within this 21st century context. Curriculum today has different characteristics and requires new implementation processes and strategies to support it. There is a need for an understanding of the increasingly complex educational environment emerging. Schools are starting to develop a more personalised approach that aims to encourage each individual to achieve best growth and to develop learning.

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5 The Victorian Blueprint identifies the future directions for education in Victorian Government school system. It includes 6 flagship strategies covering Student learning, resource allocation, Leadership capacity, A performance and development culture, teacher professional development and school improvement.
communities that foster and encourage this process. This research explores a sustainable, living curriculum and identifies some ways to personalise this curriculum for the 21st century. The narrative consists of an insider, practitioner case study written over 6 years, supported by many diagrams and complemented by a series of scenarios looking into the future. The living curriculum developed represents the living educational theory (Whitehead, 1989, 1993, McNiff and Whitehead, 2005) that has developed along this learning journey.

Within the narrative various gateways to change will be discussed (Hargreaves, 2004, 2005). Processes used for planning will be developed that are built upon a new model for curriculum and curriculum design (a learning lattice). This model eventually provided a structure for our curriculum units; it shaped the curriculum, strengthened it and supported its design and implementation. It is based on 21st century planning characteristics that will be identified. Starting as a tool, over time it has become for me a model of curriculum and learning. Other tools developed or adopted at Green Gully are described, discussed and evaluated as they were used in curriculum planning and implementation. Over the course of this study curriculum units were planned, taught, observed and evaluated through an action learning spiral. The living curriculum at Green Gully was reviewed, planned and taught with the aim of producing improved outcomes or understandings. A commentary, written later, provides further reflections and analysis within the extended narrative.

This living curriculum was also seen as needing to be differentiated (Tomlinson, 1999, 2000, 2001, 2003, Tomlinson and McTighe, 2006) and personalised so that an appropriate curriculum is offered to meet the needs of all students (Marshall 1999, Taberer 2001, Cheng 2002, Caldwell 2003, Smith and Lovatt, 2003, Hargreaves 2004, Behrenbruch and Bolger 2005). A flexible living curriculum is required that is responsive to their readiness, abilities and interests and that is most likely to engage them and meet their learning needs. These were to become important characteristics of 21st century curriculum and curriculum planning.
The paradigm change
Many social scientists researching change in education and commenting upon schooling around the end of the 20th century have described a paradigm shift occurring (Costa 1997, Marshall 1999, Lindberg 1999, Beare 2001, Krakow 2001, Cheng 2002, Smith and Lovat, 2003, Caldwell 2003, Rogerson 2005, and Demchenko 2005). Other authors have not used the term paradigm but have described the dramatic changes occurring or needed as a ‘new renaissance’ (De Bono 1990, Costa 1997). David Hargreaves (2004) uses the term imaginary to summarise the differences that are occurring and need to occur as this paradigm changes. In this thesis I am referring to the period of transition from one paradigm to another as an educational transgression. In 2005 Brian Caldwell presented a paper to a group of local schools in which he discussed this paradigm shift and described the work of Cheng (2001). See figure 3.

<table>
<thead>
<tr>
<th>New paradigm</th>
<th>Traditional site-bound paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual teacher and teaching</td>
<td>Reproduced teacher and teaching</td>
</tr>
<tr>
<td>▪ Teacher is the facilitator to support students’ learning</td>
<td></td>
</tr>
<tr>
<td>▪ Multiple intelligence teacher</td>
<td>▪ Teacher is the centre of education</td>
</tr>
<tr>
<td>▪ Individualised teaching style</td>
<td>▪ Partially competent teacher</td>
</tr>
<tr>
<td>▪ Teaching is to arouse curiosity</td>
<td>▪ Standard teaching style</td>
</tr>
<tr>
<td>▪ Teaching is a process to initiate, facilitate, and sustain students’ self-learning and self-actualisation</td>
<td>▪ Teaching is to transfer knowledge</td>
</tr>
<tr>
<td>▪ Sharing joy with students</td>
<td>▪ Teaching is a disciplinary, delivering, training, and socialising process</td>
</tr>
<tr>
<td>▪ Teaching is a life-long learning process</td>
<td>▪ Achieving standards in examinations</td>
</tr>
<tr>
<td>Localised and globalised teacher and teaching</td>
<td>▪ Teaching is a transfer and application process</td>
</tr>
<tr>
<td>▪ Multiple local and global sources of teaching and knowledge</td>
<td></td>
</tr>
<tr>
<td>▪ Networked teaching</td>
<td>▪ School-bounded teacher and teaching</td>
</tr>
<tr>
<td>▪ World-class teaching</td>
<td>▪ Teacher as the sole source of teaching and knowledge</td>
</tr>
<tr>
<td>▪ Unlimited opportunities for teaching</td>
<td>▪ Separated teaching</td>
</tr>
<tr>
<td>▪ Teacher with local and international outlook</td>
<td>▪ Site-bounded teaching</td>
</tr>
<tr>
<td>▪ As a world class and networked teacher</td>
<td>▪ Limited opportunities for teaching</td>
</tr>
<tr>
<td></td>
<td>▪ Teacher with only school experiences</td>
</tr>
<tr>
<td></td>
<td>▪ As a school-bounded and separated teacher</td>
</tr>
</tbody>
</table>

Figure 3 Paradigm Changes

In his work Cheng (2001, 2002) highlighted some changing aspects of pedagogy in the new paradigm. He identified the changing role of the teacher to that of
facilitator and emphasised the student as central. He provided good contrasts between the old and new paradigm. He compared the school site bounded teacher with the localised and globalised teacher, emphasised the importance of networks and also a new openness for the profession. Certainly what I see emerging reflects a much more collaborative process for curriculum design and pedagogy. In the new paradigm there are teams of teachers, both within and across schools, working collaboratively to improve schooling both in a local and a wider context.

In the year 2000 Green Gully S.C. certainly possessed many of the characteristics of the traditional site–bound paradigm as described by Cheng (2001). In the vast majority of classrooms the teacher was at the centre of education and there was a more limited range of teaching styles. The main goal of teaching was the transfer of knowledge and its application. Teaching was seen as a disciplinary process delivering content and training students. Examinations played a large role in determining the standards set and reached. The teacher was school–bounded rarely participating in networks. Teachers taught in their own classrooms with limited collaboration within the school let alone outside of it. Many teachers at my school had gone straight from school, to university, to classroom, and had limited outside experiences. Indeed many had taught at only the one school.

Hargreaves (2004, 2005) also summarised what he saw as the differences between the educational imaginary of the 19th century, much of which is still seen in schools around the world today, and an envisioned 21st educational imaginary (see figure 4).

<table>
<thead>
<tr>
<th>The 19th Century Imaginary</th>
<th>The 21st Century Imaginary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools prepare students for their fixed station in life</td>
<td>Students’ identities and destinies are fluid</td>
</tr>
<tr>
<td>Intelligence is mono-dimensional, fixed and innate</td>
<td>Multiple intelligences are plastic and learnable</td>
</tr>
<tr>
<td>Schools of each type are similar and interchangeable</td>
<td>Schools are culturally heterogeneous</td>
</tr>
<tr>
<td>School is culturally homogeneous- by class, ethnicity, gender, religion – high</td>
<td>Schools are diverse and not interchangeable</td>
</tr>
<tr>
<td>Education is lifelong, formal and</td>
<td></td>
</tr>
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<td></td>
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</tr>
</tbody>
</table>
He examined the nature of schools, their characteristics, their physical presence, the ways in which teachers interact, the place of education in life and the organisation of schooling. He identified the need for personalising learning, but had not yet explored the nature of the new curriculum. In other publications (2004, 2005) he described the 9 gateways to transforming schools and discusses aspects of pedagogy, assessment and learning. Hargreaves (2004, 2005) has given strong directions to the movement for personalising learning. At our school we used these gateways as axes for change. In addition we added the need to differentiate the curriculum (Tomlinson, 1999, 2000, 2001, 2003, 2006).

In 2000 the school still seemed to belong more to the 19th century Imaginary than the 21st. We did not yet have any understanding of multiple intelligences and hence saw intelligence as fixed and mono-dimensional. There were fairly rigid boundaries between the school and its community. Networks were generally very limited. Schools and teachers were fairly autonomous units hence the lack of collaboration and more limited forms of accountability. Roles were clearly defined. Little personalisation of the curriculum occurred.

One of the major ideas, that writers describing the new paradigm support, is that of lifelong learning (Gross, 1992, Costa, 1997, 2001, Hargreaves, 2005). This impacted on our teaching styles, professional development within schools, our links and relationships with our local communities. Support and commitment to this
process will be seen as important when exploring strategies for successful implementation of curriculum and pedagogical change.

In 1992 Ronald Gross identified 10 megatrends in lifelong learning.

1. We will learn throughout our lives.
2. We will learn in a rich array of organisations, institutes, associations and networks.
3. We will focus on real needs.
4. We will learn with our whole brains.
5. We will learn together.
6. We will learn via multiple media, technologies, formats and styles.
7. We will direct our own thinking and learning.
8. We will learn by teaching.
9. Our systems of formal education—schools and colleges—will change radically (if slowly) to support the ideal of lifelong learning and a learning society.
10. We will learn how to learn. (Gross 1992)

In 2000 at Green Gully many of these ideas had not yet arrived. Ideas such as the value of co-operative learning and learning to learn skills were not yet part of our general practice. These ideas were to permeate into secondary colleges through the writings and research that came with the Middle Years movement in Victoria and later within the Principles of Learning and Teaching (POLT) and Victorian Essential Learning Standards (VELS) publications. Literature from England and Scotland also picks up on these trends, with much discussion of lifelong learning and learning to learn, occurring within publications developed by the Specialist Schools Trust and iNet (International Network for Educational Transformation). An example of this is the series of pamphlets written by David Hargreaves (2004 and later) on each of the 9 transforming gateways that include learning to learn, student voice and assessment for learning. These 9 gateways were for us the routes to transforming learning into a more personalised form.

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6 The Middle Years Reform project was conducted between 2001 and 2003 and explored student engagement in the middle years of schooling variously regarded as covering years 5-9
In 2004 a study on Innovative Learning Environments in School Education was published by the European Commission Directorate General Education and Culture. This clearly identified the movement towards a new paradigm in education and noted that this was seen as a global change, not one with limited local distribution. There are a number of important points made in the report.

The findings of the study suggested a clear move towards a new learning paradigm. This new learning paradigm represents a shift away from instructionism towards constructivism (p.1).

The change from ‘instructionism towards constructivism’ is critical, reflecting a change from teacher centred to student centred curriculum, and one in which the concept of process in curriculum is becoming more important than the content that is being transferred. The report then went on to describe the common elements of this changing paradigm. These include a focus on ‘pupils’ as individuals’, the need for a ‘differentiated learning approach’, ‘an increased focus on social collaboration’, changes in the role of teacher to advisor and ‘provider of a framework for the learning process’, a shift away from content transmission to knowledge construction and a shift in the organisation of the curriculum. (E. C report, 2004)

This report highlights many implications for classroom practice including the importance of differentiating the curriculum. It discusses a shift from content to process. It suggests a move away from the traditional organisation of the curriculum to a more integrated or multidisciplinary approach. All of these ideas were being incorporated into the living curriculum developing at Green Gully, as we sought to further student engagement, and provide a more meaningful 21st century curriculum. In 2000 we were generally still very much involved in instructionism rather than constructivism.

In their book *Envisioning Process as Content Towards a Renaissance Curriculum* edited by Costa and Liebmann (1997) the authors devote an entire chapter to a discussion of shifting paradigms in education. Early in chapter 3, in order to help the reader understand what they mean by a paradigm they state that
A paradigm simply places a hold on our perception of reality so deep that it is hard to imagine any other way of looking at the event, situation or content. (p.32)

It is often difficult to envisage a school as anything but a traditional organisation and building, with most students in a class in rows and a teacher out the front, but that is what is needed. They then describe the purpose of the paradigm shift.

Paradigm shifts are necessary to support a curriculum that values the interaction of process and content, growth and development.

Although Jerome Bruner and others hold the belief that all children can learn, we believe all children do learn—the questions are what and how. (Costa and Liebmann, 1997, p.32-33)

This quote highlights the importance of process within the curriculum. There is a relationship between process and content that I further explore in my study. In engaging students, the question of what should make up the core content is critical, questions on curriculum construction relate closely to this issue.

In 2000 our curriculum touched on process learning when we dealt with specific discipline skills but rarely outside of this time. In the rest of the chapter Costa and Liebmann (1997) identify the characteristics of the old and new paradigms. I have summarised their points in figure 5.

<table>
<thead>
<tr>
<th>OLD PARADIGM</th>
<th>NEW PARADIGM</th>
</tr>
</thead>
<tbody>
<tr>
<td>The school’s mission is to produce an educated, literate person—-one who has mastered the basic skills and acquired significant concepts.</td>
<td>The school’s mission is to produce lifelong learners who continue their personal development and who promote the well-being of the larger community.</td>
</tr>
<tr>
<td>It is the responsibility of the schools to educate the child.</td>
<td>It is the responsibility of all community agencies to contribute to the development of the continued growth and lifelong learning of all members of the community.</td>
</tr>
<tr>
<td>Learners should check their deepest personal selves on the steps of the school and should be passive recipients of the teachers’</td>
<td>Learners are active participants in the learning process. Educational settings should be created as arenas in which relationships, creativity, innovating, authenticity, self-expression, and</td>
</tr>
<tr>
<td>knowledge.</td>
<td>human spirit are valued while embracing diversity in the community.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Evaluation of student learning is a summative measurement of how much content students have retained. It is useful for grading and separating students into ability groups. It is useful in predicting success in after life and indicates aptitude for profiting from more advanced academic instruction.</td>
<td>Evaluation is neither summative nor punitive. Rather, assessment is a mechanism for providing feedback to the learner as a necessary part of the spiralling process of continuous personal development: self-analyzing, self-evaluating, and self-modifying.</td>
</tr>
<tr>
<td>The understanding of the whole can be achieved only as a result of studying the smallest unit (reductionism).</td>
<td>Nothing can be truly understood by studying it in isolation as well as in connection (holonism).</td>
</tr>
<tr>
<td>The intent of objective, linear, scientific/mechanistic inquiry is to establish causality, laws, truth and how to control and make accurate predictions.</td>
<td>The quantum paradigm of process intends to continue seeking greater understanding of multiple causalities, non-linear and chaotic systems, interactions, connections, and to continually discover hidden meanings.</td>
</tr>
<tr>
<td>Only knowledge that is discovered through the use of sensing and thinking is worthy of acceptance and recognition.</td>
<td>The process of knowing through the use of feelings and intuition are valid and result in greater depth of understanding.</td>
</tr>
</tbody>
</table>

**Figure 5 More Paradigm Changes (Costa and Liebmann)**

Costa and Liebmann (1997) highlighted some of the significant differences between the old and new paradigms. They have commented on some practical aspects of teacher practice such as assessment changes in some detail whilst most of the other characteristics are somewhat more theoretical.

I have attempted to summarise many of the key elements of this older paradigm as they operated at the school in figure 6. This concept map shows grouping of various ideas and some of the key characteristics and influences upon our
Writers and theorists I have included within this thesis are those that have contributed significantly to my understanding of the changing paradigm and my new emerging personal curriculum theory. All aspects of schooling as we knew it were changing. The buildings themselves were being redesigned, walls taken down, the curriculum taught, the pedagogy used, the time and place of the learning, the roles of students and teachers, the professional development undertaken by teachers, the networks of teachers, the form of planning and assessment. It is this wide range of changes that I discuss.
A metaphor that I have been using is that there is a transgression occurring within which one widespread set of ideas and behaviours is being totally replaced over a short time with another, in the same way as one sedimentary rock environment is replaced by another during a geological transgression. It takes time for the transgression to be completed but it is clearly possible to see wave after wave of ideas arriving in schools and being taken up. Unlike a tidal change however, the waves are not retreating. The paradigm shift is upon us, and as teachers and researchers we need to be aware of it and the rapidly changing nature of teaching and learning today.

Another writer convinced of this changing paradigm is Professor Lindberg of Telemark College in Norway who wrote in 1999 about the need for a new pedagogy.

The educational institutions are entering into a new era. We are experiencing an *information and communications revolution*. New technology and new possibilities for operating undertakings and businesses, puts pressure on the educational institutions to change and deliver new products. The companies become more and more conscious towards developing the competence and skills of their employees. As a result the way we view teaching and learning is changing. The themes *learning, lifelong learning, continuing education, continuing professional development, distance education, flexible learning etc.* has been subject to remarkable attention. (Lindberg 1999, p.1)

In this quote Lindberg is highlighting the role of technology to change schools. This is certainly one we are seeing at Green Gully as we develop our more personalised curriculum. This whole process is taking place in an increasingly digital environment which will also be supporting professional learning and curriculum...
access 24/7. The paradigm change occurring in education will eventually lead to changes at every level, from the individual classroom to the policies of the department, and to the very nature and role of schools. The curriculum will need to be rebuilt, with the student at its centre, instead of the teacher. Professional development will be seen to change from externally provided to internally developed. Roles of students and teachers will also change. School and classroom visions will need to be developed to look with new eyes at what is/can be. Paradigm changes will be occurring within smaller elements such as our assessment practices, as well as across the entire school curriculum.

There is an extensive range of writing on this new paradigm. In my study I have placed some of these more theoretical ideas into a specific local context and applied them to my own classes. In particular I will be looking at curriculum development and implementation for the 21st century. I will be examining the processes that are used to develop a curriculum that is more personalised (Hargreaves 2004, 2005), differentiated (Tomlinson 2000) and appropriate to the standards (VELS, 2005) expected of us, both here in Victoria but also globally.

**Living Educational Theory**

In this thesis I discuss the development of a Living theory of curriculum and in particular a theory of curriculum practice. This term has been developed from the work of Whitehead and McNiff over a number of years. In 2009 McNiff and Whitehead discussed the process of “Theorising” in relation to the concept of Living Educational Theory (Whitehead, 1989, 1993).

Your theory of practice is not static; it is living, part of your life. It is your own living theory of practice (Whitehead, 1989, 1993). Your living theory of practice is your explanation of why you are doing things the way you are. You are making your practice problematic by questioning taken-for-granted assumptions (your own and others’), and by questioning whether you are living your values in your practice. You are stating your reasons for action in terms of your values, and by showing how you can justify
your action in terms of what you believe is a right way of living. You can then go on to show the potential significance of your living theory for wider social and political debates. Your living theory is created from within your work and represents your present best thinking. It is always developing because you are always in process of development. If your living theory shows how your work can be understood as educational, you can claim that you are creating your own living educational theory. (McNiff and Whitehead 2009, p.47)

Britzman (2003, p. 31) echoed this when she stated “Learning to teach-like teaching itself-is always the process of becoming: a time of formation and transformation, of scrutiny into what one is doing, and who one can become”. In line with this thinking, I will be examining my practice in the light of my values with the goal of improving curriculum design and practice. Whitehead (1989, 1993) puts a strong focus on clearly identifying values, and how the practitioner is in reality meeting them. Whitehead (1989) places what he terms the “Living I” at the centre of inquiries. Through asking the core question “How can I improve my practice?” one is led to a recognition of self as a “living contradiction” (Whitehead, 1989, 199, McNiff et al. 2002, 2003). This recognition then leads to a series of implications that are fundamental to the case study I have used as a method within this narrative.

I experience a concern when some of my educational values are denied in my practice;
I imagine a solution to that concern;
I act in the direction of that imagined solution;
I evaluate the outcome of the solution;
I modify my practice, plans and ideas in the light of the evaluation. (Whitehead 1989, p.43)

In examining my educational values and practice I develop and enact theory to develop a deeper understanding of curriculum and its design.
In 2004 Morrison described the poverty of the curriculum field and the need to develop theories demonstrating the following hallmarks “authenticity, discovery, diversity, novelty, multiplicity, fecundity, and creativity”, (Morrison 2004 p.488). It is to this field that I want to add a “living curriculum” theory of practice that reflects these hallmarks. Morrison goes on to add that he wants “a theory of life, not of sterility” (Morrison 2004, p.492), a living growing curriculum reflects this position.

**Why a living curriculum?**

The curriculum, that will be explored and detailed in this research, is described as living because it is changing and growing. It evolves from year to year, unit to unit and day to day. It is pruned, as areas are seen to be no longer engaging students, part of the formal required curriculum or relevant to their needs. It is shaped and framed to allow differentiation and personalisation to occur within the constraints of the local curriculum guidelines. The curriculum constructed is not identical in my classroom and that of others, but the techniques and processes that are developed, the frameworks and models that are used, the theory developed may be applicable across the wider landscape. As I question and seek improvement so does the curriculum evolve. This reflects my developing living educational theory (Whitehead 1989, 1993, McNiff and Whitehead 2005).

This thesis will describe how ideas are collected and adapted from one context to be reinterpreted and integrated into another. The networks I am involved with are invaluable for this process – to support the arrival and collection of ideas and also their dissemination. The ideas and innovations adopted need to be sustainable. They need to be able to be supported in an on-going fashion and benefit the school community. They need to fit into the ecology of our classroom and school without damaging or reducing the quality of interactions that occur. I identify key components and their interactions, aiming for sustainability and for quality performances, outcomes and products.
Metaphors and diagrams in this study

This research uses a number of metaphors to extend and enrich the understanding of curriculum. “The essence of metaphor is understanding and experiencing one kind of thing in terms of another” (Lakoff and Johnson, 1980, p.5). Metaphors can also help “create realities for us” and “may thus be a guide for future action”. (Lakoff and Johnson 1980, p.146).

As a researcher who is also a teacher for the majority of the week I find value in the view of Connelly and Clandinin (1988, p.71) who regard “metaphors as important parts of our personal practical knowledge and as a central form in our language of practice”. The metaphors used in this study have contributed to the growth of my understanding and helped develop theory, but at the same time contributed to the growth of practice, and in this way assist in drawing practice and theory together. The metaphors used throughout this narrative have drawn upon my educational background and my interests. The use of geologic and geographic images is a result of my professional background and the gardening metaphors relate back to my interests in this area.  

Metaphors have been used extensively to help understanding of the nature of curriculum. The garden or growth metaphor has been a common example. (eg. Kliebard 1975, Connelly and Clandinin, 1988, Lawley and Tompkins 2000, Baptist 2002). Other metaphors such as banking have been taken up by authors such as Freire (1970 p.58). Mayes used the landscape metaphor “because I wanted to suggest that each approach to curriculum is, in one sense, an independent territory with its own native charms, dangers and possibilities” (Mayes 2003, p.5).

In the “Metaphorical roots of curriculum design” Kliebard (1975) discussed three metaphors for curriculum design in those of production, growth and the journey. The ecologically sustainable, curriculum permaculture used in this study builds upon these interpretations to identify wider dimensions to the metaphor that help interpret curriculum as a living and growing construct and highlight key ecological principles and relationships that are explored during the study. “Garden as metaphor for curriculum sows new beginnings, new forms and new possibilities for re-imagining curriculum” (Baptist, 2002). Understanding and interpreting curriculum as permaculture will have an impact because preferred metaphors “have such an influence on the way you teach”, (Tompkins and Lawley 2000) and also on the way you learn and plan. Apple also commented on the value of metaphors when he stated that “metaphors work in creating the horizon against which we interpret our problems” (Apple 2000 p.56). Metaphors provide us with a challenge and a gauge and can give us paths to follow. “A curriculum can become one’s life course of action. It can mean the paths we have followed and the paths we intend to follow” (Connelly and Clandinin, 1988, p.1).
My use of diagrams throughout the thesis, reflects this background as a geologist and geographer, as does my use of ideas such as validity crystals, transgressions and permaculture in my theoretical work. I found myself using these diagrams to develop ideas, as a constructive thinking tool, to deepen understanding but also for portraying ideas and processes ready for communication to others. Some may appear quite idiosyncratic but reflect my understandings and thoughts at that time as I dealt with the many complexities involved. Attending curriculum and narrative conferences with individuals from many different backgrounds has highlighted the importance of the lenses that I bring to my work and that encourage me to view, understand and present in different ways to others.

Relevance and importance of the study

The case study completed at the heart of these studies could be considered as using a form of insider, practitioner action research, (Cochran-Smith and Lyle, 1993, Herr and Anderson, 2005) and “Action research is about working toward practical outcomes, and also about creating new forms of understanding, since action without reflection and understanding is blind, just as theory without action is meaningless.” (Reason and Bradbury 2001). However, after initially starting with this methodology, I eventually adopted a narrative framework as the most appropriate considering the length of this study. I am however, using a form of action learning cycle as a process within my case study method and have drawn upon the work of Herr and Anderson on validity and Whitehead and Winter on theory development. The values of this type of narrative research are however, closely aligned with those of action research.

The research I conducted within this extended narrative framework is important in a number of ways. It provides valuable insights into the local setting. It aims to develop improved practices within the specific school setting with regard to processes of collaborative curriculum construction and implementation. To the wider international audience however, it can also provide a case study of curriculum and narrative processes and products that can be shared. The models,
tools, products and understandings generated represent a theory of practice that can be shared for use in other settings developing 21st century curriculum. Alongside this a set of understandings of narrative processes and practices have been developed that may also have value in other research settings. Although the research is being formally conducted within a small number of classrooms, the models, tools and understandings have already been shared within the local community of primary and secondary schools and are now reaching a wider tertiary audience.

As listed earlier there are 3 main goals for this research. More specifically the research has a larger number of intentions. These being to

- document the development of my own 'living educational" theory (Whitehead, 1989, 1993),
- contribute to an understanding of how personalised living curriculum appropriate to the 21st century can be developed,
- contribute to the literature on successfully implementing curriculum change processes into the curriculum,
- provide a curriculum model and a number of tools for planning, assessment and evaluation of curriculum that could be taken up by other schools or teachers at the local or wider levels, and contribute to the theory of curriculum design,
- identify curriculum design characteristics appropriate for the 21st century and
- contribute to an understanding of the practice and value of insider, practitioner research narratives and reflective practice by teachers.

**The structure and format of this thesis**

Using a detailed personal narrative, this study will explore and discuss the three goals listed earlier. The narrative with its 3 distinct researcher voices, makes up the core or central chapter of this thesis where the data is presented and an embedded paralleling commentary provides some discussion and analysis. The three voices
include myself writing as practitioner, as narrator and finally as theoretician or philosopher. These voices are presented through a form of messy\(^8\) text. Each voice has its own distinct format and style. Extracts from the original case study are directly quoted and included within inverted commas. Alongside these three voices many diagrams are also presented. They are an important form of communication as well as a thinking tool for the writer. Some of the most complex ones have been included and portray how teachers were at times feeling overwhelmed and confused by the huge number of things they were expected to respond to.

The introduction to the thesis has set the scene and provided important context. A literature review follows and discusses the contribution of particular writers with regard to curriculum design, complexity theory and living curriculum theory. This is followed by a detailed methodology chapter outlining the narrative framework and the case study approach used as research method in this research. The narrative itself begins with a description of the paradigm existing at the beginning of the educational transgression before the extensive 6 year long case study, written in its 3 voices, is presented. Analysis and implications are included in a chapter exploring the impact of the transgression on curriculum design, and summarising ways to improve sustainability of curriculum innovation. A discussion of the value of this type of narrative research is the last important component of this chapter. Overall findings are presented in a separate concluding chapter. Finally, a post-script briefly outlining some events since the close of the case study, is provided.

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\(^8\) Many authors have discussed the use of messy text, some are listed below. I am using it in this thesis as a form of writing to discriminate between my various voices and to present the narrative in a more interesting format.

Chapter 2  

Literature Review

This literature review discusses a number of important themes and authors relevant to this study. It briefly explores and discusses literature on curriculum theory and practice, curriculum planning and processes, complexity and a living curriculum theory.

Theory and practice

Central to this thesis is the notion of a practicing teacher producing theory and processes for the design of a living curriculum. A theory of practice is developed. In 1988 Clandinin and Connelly (p.89) wrote, “We learn something new and that may be said to be theory. It becomes practical when it seeps into our personal knowledge and becomes part of us so that we act in ways that reflect the new idea”. In following this process we are taking an idea and using it in the classroom or school context. It is referring to and being used in a new reality. “Whereas practice presents reality, theory represents it. Theory tries to copy or reproduce reality. Theory is a reproduction” (Gauthier 1992, p.187). Living curriculum hence can become a representation of the curriculum we desire, it can reflect it and also go on to predict it. In 1993 Ornstein and Hunkin viewed the purpose of curriculum theory as “describing, predicting and explaining curriculum phenomena in ways that serve as policy for guiding practical curriculum activities” (in Marsh and Willis, 2003, p.98). The curriculum theory I develop can be used to implement the newly designed and planned curriculum. This living curriculum is represented by the planned activities, units and programme developed to realise the planned/identified goals. Pinar complements this view when he asks us to look at the contribution and experience of the individual teacher. “Curriculum theory, then is a form of autobiographical and theoretical truth-telling that articulates the educational experience of teachers and students as lived” (Pinar 2004, p.25).

Hewitt defines curriculum theory as “a set of propositions, observations, facts, beliefs, policies, or procedures proposed or followed as a basis for curriculum action” (2006, p. 133). This is a good initial definition and with it in mind I identify,
describe and compare the growth and practice of curriculum developed at Green Gully. Models and tools such as the learning lattice are described and evaluated over 6 years. The link between theory and practice is seen as very strong. Practice continuously contributes to theory. For a practitioner developing both “living educational theory” (Whitehead 1989, 1993; McNiff and Whitehead 2005) and current practice this interplay is critical. “The potential for fostering a vital interplay between curriculum theory and curriculum practice is a key to advancing the field”. (Wraga and Hlebowitsh 2003, p. 434).

**Curriculum design**
As much of this thesis will be discussing developing and designing curriculum it is important to recognise some past key models and authors. Ralph Tyler in his important work Basic Principles of Curriculum and Instruction (1949) identified 4 questions that planners and organizers of curriculum need to consider and these “continue to guide and inform much of the work of 21st century curriculum planners and organizers”. (Brown 2004, p.4). Discussions of the school vision, unit documentation and assessment reflect the ongoing importance of these questions.

- What educational purposes should the school seek to attain?
- What educational experiences can be provided that are likely to attain these purposes?
- How can these educational experiences be effectively organized?
- How can we determine whether these purposes are being attained? (Tyler, 1949)

Recent authors have gone on to describe the limitations of this type of model and consider that it “actually devalues the learning journey because the setting of outcomes and objectives by learning experts restricts inquiry and disengages students from the learning process (Behrenbruch and Bolger, 2005, p.3). The Tylerian approach is limiting as it imposes external and non-participatory learning. Students are therefore less empowered and less responsible. Certainly the new Victorian curriculum based around the VELS (DET, 2005) supports this position as the designers have identified personal learning as an important domain for
students and schools to include in both the curriculum and its reporting. Students are expected to identify their own learning goals, understand their learning styles and work towards achieving these goals (VELS DET, 2005). Key past writers such as John Dewey (1916) and Paulo Freire (1970) have put student centred learning at the centre of the curriculum and the learning process rather than behavioural objectives.

Other curriculum designers who have been influential included Hilda Taba who described 7 key steps in her model that included; diagnosis of needs, formulation of objectives, selection of content, organisation of content, selection of learning experiences, organisation of learning activities and evaluation (Taba 1962). These issues reflect the greater complexity required of curriculum designers today. Bruner (1966) also developed the idea of a spiralling curriculum that “would flow from simple to complex, concrete to abstract, and from year to year as schooling progressed” (Hewitt 2006, p. 143). Certainly the idea of a spiralling curriculum and a learning spiral is one that has influenced my ideas on research, curriculum development and concept reinforcement. Figure 8 identifies some major contributors to curriculum theory that have influenced my thinking and practice and summarises key elements of their contributions.
**SOME KEY CONTRIBUTORS TO CURRICULUM DEVELOPMENT AND THEORY**

**John Dewey (1916)**
Student centered learning at the center of the curriculum and the learning process rather than behavioral objectives.

**Ralph Tyler**
- Basic Principles of Curriculum and Instruction
- What educational purposes should the school seek to attain?
- How can these educational purposes be effectively organized?
- How can we determine whether these purposes are being attained? (Tyler, 1949)

**Robert Marzano**
The Dimensions of Learning. The 5 dimensions are Attitudes and Perceptions, Acquire and Integrate Knowledge, Extend and Refine Knowledge, Use Knowledge Meaningfully and the Heuristics of Mind. (Marzano and Marzano, 1997)

**Hilda Taba**
7 key steps in her model that included: diagnosis of needs, formulation of objectives, selection of content, organization of content, selection of learning experiences, organization of learning activities and evaluation. (Taba, 1962)

**Jerome Bruner**
(1960) Spacing Curriculum that "would flow from simple to complex, concrete to abstract, and from you to you or school programmed" (McKeachie and Raths, 1994, p. 103).

**Vygotsky**'s action of scaffolding and guided discovery, and his belief in the importance of the ongoing interaction between the child and its environment to facilitate the child's understanding of the world about, is essentially a constructivist approach. (McKeachie and Raths, 1994, p. 103).

**Decker Walker**
(1912) Deliberative Platform that was based on observations of teachers actual decision making vs. curriculum (Walker, 1950).

**Paula Freire**
Pedagogy of the Oppressed (1970) "that genuine education involves a critical dialogue between instructor and students in which they investigate personal and shared mutual construction of reality."

**McNeil and Whitehead (1993)**
Discuss the process of "Therming" in relation to the concept of Living Educational Theory (Whitehead, 1989, 1993).
Your theory is created from within your work and represents your present best thinking. It is always developing because you are always in the process of development. Your theory is not static; it is living part or your life. It is your own living theory (Whitehead, 1989, 1993). If your theory shows how your work can be understood as educational, you can claim that you are creating your own educational theory. (McNeil and Whitehead, 1993)

**Grant Wiggins and Jay McTighe's Understanding by Design (1999)**
That looks at a backward design approach to curriculum planning.

**William Planar**
Currents-the Infinitive Form of Curriculum (2001). This autobiographical method asks us to slow down, to remember even re-learn the past, and to meditatively imagine the future. "Curriculum theory, then, is in a form of autobiographical and rhetorical truth telling that articulates the educational experience of teachers and students as lived.

**Carol Ann Tomlinson**

**David Hargreaves**

**John Dewey (1916)**
Places the student at the heart of schooling rather than the teacher. (Costa, 1997; Tomlinson, 2000; Hargreaves, 2004; Chang, 2002; Caldwell, 2003). Rease (2001) are all in accord with this idea and is clearly a central idea within the new paradigm.

**B. Edmunds 7/11/06**

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**Figure 8 Details of Selected Curriculum Theorists**
Another important theorist to consider is Eisner known for his artistic approach. “I believe we need theory that unapologetically recognises the artistry of teaching” (Eisner 1979, p. 18). He is clearly recognising teaching as an art to go along with the scientific side of teaching. Eisner also outlined the steps involved in curriculum planning covering: goals, content, types of learning opportunities, organisation of learning opportunities, organisation of content, mode of presentation and types of evaluation (Eisner, 1979). According to Marsh and Willis (2003) “Eisner takes pains to stress that his headings cover just some of the many dimensions of curriculum” (Marsh and Willis, 2003, p. 83). Eisner importantly, suggests the need for this broader range of curriculum objectives and a wider variety of opportunities for learning. Here there is a sense of what is to come with the differentiation of the curriculum as described by Tomlinson (1999, 2000). In developing my theory of practice I am following this tradition as I develop and plan a more holistic, complex and broader form of curriculum covering a much greater range of outcomes than has been typical in the past. Pinar refers to the method of ‘currere-the infinitive form of curriculum’ (2004, p. 4) for the development of curriculum theory. ‘This autobiographical method asks us to slow down, to remember even re-enter the past, and to meditatively imagine the future” (Pinar 2004, p. 4). It is critical to take the time to reflect upon the past, and to build a current curriculum in the context of that which one envisions. Then later to reflect actively or reflexively to improve and grow the curriculum that has emerged through this process. This is at the heart of my own theoretical practice and the narrative that follows.

Curriculum design in the changing paradigm
This focus on process within the curriculum is one that I further explore in my study. In engaging students the question of what should make up the core content is critical, questions on curriculum construction relate closely to this issue. Is the content the vehicle for the learning or is it the learning itself? When Costa and Liebmann (1997) were identifying the characteristics of the old paradigm and the new one, they described the changing missions of schools. They discussed whose responsibility it was to educate the child, the nature of participation by learners, assessment and the nature of learning putting a significant emphasis on the value of process in the curriculum. My own living curriculum theory accepts the importance of this and places skills, concepts
and understandings centrally in my curriculum model. Costa (1988, 2000, 2001) has also written extensively on 16 habits of mind\(^9\) which are intelligent behaviours that need to be considered as part of the new curriculum, one more appropriate for 21\(^{st}\) century schooling, one that places importance on the ‘thinking curriculum’. I have hence included them as an important element in both my curriculum model and my planning processes, and acknowledge the role they can play in constructing a more personalised, differentiated and engaging curriculum.

Each of these authors as well as others mentioned earlier, have focused attention on different elements and processes of the paradigm change. My argument is that all aspects of schooling, as we know it, are changing across the transgression.

The paradigm change occurring in education could eventually lead to changes at every level, from the individual classroom to the policies of education departments and to the very nature and role of schools. The curriculum needs to be redesigned with the student at the centre instead of the teacher. The ideas of John Dewey (1916) although writing in the first half of the last century are still important within the new paradigm, that very clearly places the student at the heart of schooling, rather than the teacher. Costa (1997), Tomlinson (2000), Beare (2001), Cheng (2002), Hargreaves (2004), Caldwell (2005), are all in accord with this idea and it is clearly a central idea within the new paradigm.

Professional development is changing from externally provided to internally developed. Roles of students and teachers are changing. It is important to look with new eyes at what is/can be, ‘to make the familiar strange’. We need to examine developments and modify practice accordingly. We see paradigm changes occurring at a variety of scales, from smaller elements such as classroom assessment practices, to the greater whole school/education paradigm. The changing nature of relationships within and across schools is another important element of the changing paradigm. The dialogue that follows once these relationships have been established can be very constructive. Social

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\(^9\) The 16 Habits of Mind are discussed a number of times during the narrative. They include thinking about your thinking, questioning and persistence as well as finding humour. They are important dispositions for success.
reconstructionists such as Paulo Freire author of the classic *Pedagogy of the Oppressed* (1970) believe “that genuine education involves a critical dialogue between instructor and students in which they investigate personal and shared or mutual constructions of reality” (Brown 2004, p. 5). This increased dialogue is seen through the greater use of networks and the use of ICT to extend these networks internationally.

In discussing the ideas that have come to be known as the constructivist classroom, it is important to acknowledge the work of Vygotsky (1962, 1978). “Vygotsky’s notions of scaffolding and guided discovery, and his belief in the importance of the continuing interaction between the child and its environment to facilitate the child’s understanding of the world about, is essentially a constructivist approach.” (McInerney and McInerney, 1994, p. 103). Furthermore Vygotsky (1978) emphasised the importance of active involvement of children in their learning and of process above product, key ideas that are central to my own thinking and the constructivist classroom in general.

Research particularly based in the US has led to the design of curriculum within this constructivist setting.

This research tradition reinforces the need for curriculum to emphasize an active, learner-centered classroom that acknowledges students’ construction of meaning through inquiry and experiential learning activities. Within this context, the teacher becomes a facilitator and coach for learning—a "guide on the side." Content is presented whole-to-part, with ongoing emphasis placed on students’ spiralling acquisition and application of metacompetencies (e.g., reading across the content areas, speaking and listening, writing as a means for personal and academic expression, critical thinking). In the constructivist classroom—and in curriculum that supports it—assessment and instruction are seamless, with the teacher constantly monitoring what students are achieving as well as what they need to maximize their performance. In effect, curriculum reflecting this tradition rejects the "transmission" of information in favor of students' hands-on learning and accompanying self-reflection and self-monitoring (Brown 2004, p. 23).
There are many elements of this description that are part of my own pedagogy and curriculum thinking. These elements include the facilitating role of the teacher where I act as the ‘guide on the side’ and the inquiry based learning approach that I commonly use with my year 7 students. The identification of metacompetencies are also important. Alongside this is the spiralling of learning, that I encourage in my classes and that I plan for, across year levels and units. Finally there is the important inter-relationship between assessment and learning. I see assessment as an instructional tool, to guide the direction that I want learning to take, so that it becomes assessment for learning as well as assessment of learning (Black and William, 1999). These are all themes that are explored across the narrative.

The constructivist view of effective classroom instruction is often called 'teaching for understanding,' and research on this topic has become a priority for educational policy makers (Talbert, McLaughlin and Rowan, 1993 p.47).

This ‘Teaching for Understanding’ focus is one that impacted during this study. Part of my research relates directly to the planning of the curriculum and the processes that can be followed in constructing curriculum. Work on how understanding can be shown (Marzano 1997, Blythe 1997, Harpaz 2005) are powerful guides to the way in which curriculum should be designed in this constructivist paradigm. Specific models that were examined included Wiggins and McTighe’s Understanding by Design (UbD) (1999) that looks at a backward-design approach to curriculum planning and the Teaching For Understanding (TFU) model developed by Blythe et al (1998).

Differentiation became a major issue during the course of this narrative. Tomlinson is the author most frequently associated with the concept of differentiation of the teaching and learning process. Differentiation is also used in another context where differentiation refers to the streaming of students, ability grouping or a form of tracking (Terwel 2005, p. 653). However, according to Tomlinson (1999), the process of differentiation is a teacher’s response to learner’s needs guided by general principles of differentiation such as respectful tasks, flexible grouping and ongoing assessment and adjustment. Her models, principles and practices have become an important input into
catering for individual differences within the new paradigm. Developing a differentiated curriculum was considered an essential axis for change to help the school develop a more personalised curriculum. It added a dimension of much greater complexity into the classroom teaching and learning process which is indeed critical for its success in meeting the needs of all students. The use of individual learning plans and digital portfolios (Oliver 2003) is an emerging trend in this area that links to assessment and the same success goal.

Other developments in assessment that informed my curriculum design thinking during this narrative inquiry included the work of Hargreaves (2004), particularly with regard to student self assessment and assessment for learning. The use of and understanding of criteria, rubrics and the rubric horizon (Clark, 2003a, 2003b) has also been important. The assessment and reporting unit at the office of Learning and Teaching here in Victoria published a document entitled “Current Perspectives on Assessment” (2005) that identified key principles for assessment and built on the earlier work of Black and William (1999) and Earl (2003) and these too significantly informed school practice.

**Curriculum planning**

In 2003 Curriculum planning was becoming more sophisticated as we responded to the increasing demands we were facing. This resulted in a model of curriculum, based around the concept of a lattice, that will be discussed in detail later in this study. As the model developed and evolved I carried out a search for other more holistic multi-dimensional models of curriculum design. The closest model that I found to the lattice is that of Foshay (1987) who developed a curriculum matrix as described in Deets (2000).

Other authors have informed my thinking as I have developed my ideas on curriculum structure, powerful teaching and learning (Gardner 1993, Brandt 1998, Armstrong 2000, Peck 2003) and the design of curriculum for the future (Taberer 2001). These writers have proposed some principles of effective teaching and learning and I have considered them as I developed my curriculum theory.
Using technology effectively or becoming a learning technologist as Julie Atkin (1997) expresses it has been another significant element in my developing living educational theory (Whitehead 1989, 1993, McNiff and Whitehead 2005). Clearly technology is becoming more and more important in our lives and will continue to impact on schooling into the future, and thus its’ role is considered.

**Complexity theory**

A very relevant perspective I needed to consider as I developed my own living educational theory was that of complexity theory (Sumara and Davis 1997, Morrison 2002, Tosey 2002, Jorg 2004). Morrison has written about complexity theory that it is the “offspring of Chaos Theory but as with Open Systems Theory moves beyond it” (2002, p.7) and “It is an attempt to explain how open systems operate, as seen through holistic spectacles” (2002, p.7).

Now it is time to reinvent reality: a reality which can be characterised by complexity i.e. of education with its focus on learning and development; a complexity which is inherently dynamic, indeterminate and unpredictable in its effects. A reality which Kiefer delineates as “composed of multiple-simultaneous, interdependent cause-effect relationships,” in terms of a dynamic complexity (in Senge 1990, p.267).

This quote challenges me to consider curriculum design and my personal living educational theory in terms of this perspective. I see the process of curriculum development as complex and dynamic. Despite carefully documenting the curriculum, it is difficult to determine that all classes and curriculum presented across a curriculum team is consistent, as the act of teaching is such an interactive and dynamic process. It is difficult to predict exactly how the designed curriculum will be presented, operate and be assessed. There are many individual cause and effect relationships at work both within the theoretical design and the actual teaching process. When I initially designed the curriculum lattice I saw all of the elements interacting, dynamically together hence my initial gestalt diagrams. (This is illustrated later in this study in figure 50, page 203).
Jorg, (2004) raises another challenge that clearly relates to a central task of this thesis. ...how to bring complexity into the reality of our thinking about education, more specifically into the reality of our very practice of education, and its way of organizing that practice. We should make an end to colonizing that practice for purposes of theorizing about that practice (cf. Vygotsky, 1926/1997a), and start taking practice more seriously as a point of departure. (Jorg p.128).

This literature challenges researchers to develop a personal educational theory that emerges with increased complexity out of classroom practice. In this study I suggest the development of an holistic living theory that reflects the complex reality seen in classrooms today. The situation of teachers dealing with an increasingly more complex assessment process, is just one example of the greater complexity seen in education today and therefore the need for more complex tools, models and understandings of curriculum than have previously existed.

It is very true as Mathiasen (2003) stated, that you need complexity to deal with complexity. This is the only way to deal with complexity as it manifests itself in practice. So, in and for practice, “linear thinking may be dangerous in a non-linear complex reality” (Maiszer 2004, p. 204, (in Jorg, p.129).

In 2004, Jorg identified the need for a complex model to describe processes and practices and hence the potential usefulness of a dynamic, more holistic model, such as the lattice. At the same time he highlighted the danger of linear descriptions, models and diagrams for processes. Rarely are the diagrams in this study simply linear. They often contain feedback loops and other complexities, as I understand more of the processes and interactions that are occurring in assessment, collaborative curriculum design and curriculum construction and then try to incorporate them. This is seen across the course of this narrative.

Education, now seems strongly in need of recognizing (emergent) complexity at work in practice and, even more, of the full understanding of such complexity. In our view it should lead to a ‘holistic anti-, or non-reductionist’
Here Jorg started to use the term holistic that I also adopt. This holistic approach supports the emerging understanding of the complexity of education and indeed the curriculum design process itself. Later, on the same page, he identifies the need for reflexivity during this process, so that as teachers reflect on their work they make changes to incorporate greater elements of this complexity, and this seems to be what is happening in our own collaborative and individual processes. Each new iteration/cycle/unit leads to a more thorough understanding of the complex demands of the new curriculum. Figure 9 has been developed after reading the article by Morris (2002) and identifies and summarises characteristics of complexity theory that have relevance both to the development of an holistic curriculum approach and to my own living curriculum theory. The ideas of Morris have in turn influenced my own ideas on the development of complex curriculum design processes and characteristics.
Figure 9 Components of Complexity Theory
Living curriculum theory

This theory will describe practices that can occur and are indeed occurring, within the changing paradigm that is education today. This changing environment has new pedagogies (strategies for teaching), new models and tools for curriculum design, new forms of assessment and reporting, new technologies, new skills and content and new roles for schools, staff and students. The living curriculum theory developed and implemented through this study is dynamic and reflects this changing environment. “The school curriculum cannot afford to remain static in a world where knowledge itself is forever reinventing itself” (Kleibard 2000, p. 199). “Curriculum is always in a state of becoming even though it is captured in the passive confines of a book or picture or some other medium used to present and engage it” (Hewitt 2006, p. 39). Curriculum growth can be seen as rhizomatic and hence is multi-directional and difficult to predict. The rhizome can also generate “multiplicity and heterogeneity” (Amorim and Ryan, 2005 p. 583). The living curriculum theory will go beyond the work of Bruner (1966) and his spiralling of learning to incorporate this rhizomatic form of growth. The theory is a postmodern one, adding to the range that is available for consideration. It adds to the multiplicity required today, at this time of great change, for ‘there must be multiple theories for multiple contexts’ (Reid 1999, p. 33).

The 21st century is a time of rapid change in Victoria as well as in many other areas of the world. Change is irregular and hard to predict. Its rate will vary from year to year. “Futures in curriculum are not “out there” waiting for us to arrive. We must visualise them here, now” (Gough 2002, p.18). Envisioning the future is vital. We need to work towards a shared vision of where we want to go. This will not be an end in itself but one that will give us goals and new direction or beginnings. “Thus, the shared vision of an educational community is not an end in itself; the vision represents a culmination that stirs new beginnings” ….. ‘No sooner is one project complete than people generate new ideas” (Moore 2002, p. 226). Schooling on varied scales must be envisioned, from the state, individual school or single classroom. “Envisioning is a process of imagining, anticipating, or “hunching” the
practical knowledge necessitated by curriculum practice” (Hewitt 2006, p.74). The scenarios and theory developed within this study will support views of the type of curriculum and schooling to come. The development of visions for the school, classrooms and practice, has been an important theme across this narrative, and provided important context for the development of my curriculum theory and model.

This study portrays the development of a living curriculum theory during which time I was questioning my values and curriculum position constantly. This is part of the process of paradigm change wherein I responded to new ideas, clarified my understanding and led change. At school I was an individual classroom teacher, a leader of an innovative year 7 programme and a contributor to curriculum review. Away from school I networked with others to share ideas and develop further understandings. I was constantly seeking improvement, trying to do a better job as a teacher, a curriculum innovator, a curriculum designer and a collaborator. In all these roles and through all these roles I have developed my own living educational theory. A living curriculum and pedagogy responsive to the needs of students, personalised and differentiated to increase engagement and understanding.

This literature review has introduced many of the writers and ideas that are relevant to this study. Further literature and ideas are incorporated within the narrative itself as they were encountered. In the next chapter I detail the methodology used in this thesis and describe in particular the structure and function of the diagrams and the written narrative.
Chapter 3  Methodology

In this chapter I set out to describe my methodology and methods of investigation. A rationale for my choice of methods and an outline of the validity criteria used within the study is also given. The nature of my narrative self inquiry and the case study conducted is examined, as are the voices used within the study that are used in developing the living theory of curriculum, that has emerged from this research and practice. Finally I outline the narrative analysis framework I have developed for this study.

I am a story teller and the focus of this narrative is on my learning and the development of my own living educational theory as I have engaged with others in a creative and critical practice over a sustained period of time. (Naidoo 2005, p.i)

This quote from Naidoo resonates because this thesis is about my stories, what I have learnt, how I have learnt it, how I have interacted with others both in real time, through conversation, in dialogue and with authors within their writings. It is about being creative, developing new models and understandings, constructing visual images as well as written ones. An ongoing critique has been used to promote growth and improvement over a long period of time. This is my story reflecting over 30 years as a practicing teacher and curriculum designer.

As I re-write this section for another time I have realised that my understanding of the methodology itself is being up-dated because it has changed over time, in fact it has its own narrative. This study started out back in 2004 initially as an action research project, then as my understanding of research methods grew and as I started to explore writing as a form of inquiry, it became a narrative inquiry within an extensive, chronologically organised case study. “Experience happens narratively… Therefore, educational experience should be studied narratively.”
(Clandinin and Connelly, 2000. p.19). The eventual methodology for researching my story is consequently a narrative one.

The study itself has its origin back in 2003. In that year Green Gully S.C. became engaged in a case writing partnership with Victoria University. As a staff volunteer for this program I became involved and began a case study of my work with a year 7 class. This case study and the reflections, readings and discussions with the group, led to an involvement in an on-going action learning process that has resulted years later in this thesis.

As stated earlier this research project has 3 over-arching goals. (See page 13). These goals are to be achieved through a narrative self inquiry that explores and describes a changing educational paradigm and the development of a personal working theory of curriculum within a specific school context.

Narrative inquiry has been described by Porter Abbott (2008) as a “tool for knowing and telling” and he values it because it “provokes active thinking” and helps us “work through problems”. He describes the knowledge developed as not necessarily being static and this has been a strong element of my unfolding narrative.

It is a universal tool for knowing as well as telling, for absorbing knowledge as well as expressing it. This knowledge, moreover, is not necessarily static. Narrative can be, and often is, an instrument that provokes active thinking and helps us work through problems, even as we tell about them or hear them being told. (Abbott 2008, p.10-11).

The elements of a narrative
A “fully formed” narrative contains 6 elements: an abstract (summary and/or point of the story); orientation to time, place, characters situation); complicating action (the event sequence or plot, usually with a crisis or turning point); evaluation (where the narrator steps back
from the action to comment on meaning or communicate emotions—the “soul: of the narrative); resolution (the outcome of the plot); and a coda (ending the story and bringing action back to the present). (Riessman 2008 p.84)

All 6 elements are to be found in this narrative although not necessarily always in this order for as Riessman (2008 p.84) pointed out, “Not all stories contain all elements and they occur in varying sequences.” In this narrative the evaluations are spread throughout the narrative. The use of a messy text format does to some extent complicate the identification of the elements particularly when the narrator voice is providing commentary upon the narrative.

**Unpredictability of narrative outcomes**

When this thesis started I was very unclear as to its final shape and directions. “All narratives tell one story in place of another”. (Cixous and Calle-Gruber, 1994/1997, p.178 in Mazzei 2009, p. 59). Many different stories could have been told in the extended narrative, some have been selected. The thesis has evolved as the research has progressed. Exposure to a variety of authors and their thinking has shaped the final form of the thesis. I began this narrative working at a school I had been intimately involved with for 25 years. I have ended this narrative working in a tertiary environment teaching Pre-Service Teachers.

**The unit of analysis and boundaries**

“There is considerable variation in how each investigator defines a narrative unit, ranging from the entire biography, or “life story,” to a bounded (spoken or written) segment about a single incident.” (Riessman 2008, p.74-75). As Riessman stated there is considerable discussion about narrative units when it comes to narrative analysis. The unit of analysis in this research has varied. At times the unit has been a single lesson, at others a term or semester length teaching unit, and still others have been a full one year cycle of a course. I have separated the full case study into individual years and then presented and discussed data according to theme. Recurring themes contained in the narrative have been analysed across the study.
Most personal narratives, however, like most lives, are more complex. In these cases, there are no clear rules for determining boundaries, but the analytic decision is important, for it shapes interpretation and illustrates once again how we participate in the construction of the narrative that we analyse. (Riessman 2008, p.41)

Another issue has been the boundaries contained within the narrative and for the narrative as a whole. They have been both temporal and thematic. This decision on what to leave in or leave out was important as it “shapes interpretation” (Reissman 2008 p.41) and provided “grounds for our arguments” (Reissman 2008, p.50). “In narrative analysis, we attempt to keep the “story” intact for interpretive purposes, although determining the boundaries of stories can be difficult and highly interpretive.” (Riessman 2008, p.74). Often in my study I have used a chronologic period, an individual year, and/or a curriculum unit. My units needed to preserve specificity and honour intentions.

I have used a spiralling learning cycle throughout this lengthy study, learning from one unit to the next. I have also identified phases of the transgression and considered using terms such as periods and stages and consequently deepened the geologic metaphor. “Narrative analysts do strive to preserve sequence and the wealth of detail contained in long sequences.” (Riessman 2008, p.74). My study is in many ways a continuum, for it is based on the 6 year case study recorded and was proceeded by a period of teaching for 24 years at the same school. I have attempted my analysis through an arbitrary division into 3 phases of the educational transgression, early (2000-2002), middle 2003-2006 and late post 2006. The later 2 phases incorporate much personal narrative whereas the first phase is mostly constructed from archival documents.

My analysis of each curriculum unit has been based upon the need to provide ideas and theory of practice within my school and work teams. My audience for each narrative unit has varied and hence so has the purpose. Each voice has a different audience and consequently the purpose of each unit of analysis has
changed. Ideas and theory have evolved and some units have reflected this developing theory as their purpose. In other units other voices either locally or through the literature and their ideas have influenced my purpose.

Narrative inquiry is now being used much more widely and across a wider range of disciplines. (Webster and Mertova, 2007.)

Narrative inquiry has gained momentum in practice and research in a growing range of disciplines, partly on account of the constraints of conventional research methods and their incompatibility with the complexities of human actions. However, the move towards the use of the narrative approach has also been influenced by a philosophical change of thought to a more postmodern view with its interest in the individual and acknowledgement of the influence of experience and culture on the construction of knowledge. (Webster and Mertova, 2007, p.4)

Narrative inquiry carries more of a sense of a search, a “re-search”, a searching again. Narrative inquiry carries more of a sense of a continual reformulation of an inquiry than it does a sense of problem definition and solution. (Clandinin and Connelly, 2000 p. 124)

As Clandinin and Connelly (2000) discuss, narrative inquiry such as this is about an on-going search for improvement and the developing theory that led to a better quality, more fully documented and developed curriculum and also an improved process for developing that curriculum. “Stories are a reflection of the fact that experience is a matter of growth, and that understandings are continually developed.” (Webster and Mertova, 2007, p.13)

My inquiry journey has been one of discovery and questions. “Self-study is a change journey in a hermeneutical spiral of questioning, discovery, challenge,
hope, and change” (Samaras and Freese, 2006, p. 43). This study has to some degree been a self study as I have worked and reflected upon my practice. It has been about re-visiting topics to improve outcomes and understandings. It is a cycle of improvement, looking forward and continuously striving for improvement. It is about creating an holistic model for curriculum design that is practical and yet provided a basis for further discussion.

This research fits into the postmodern research paradigm which as Richardson and St. Pierre (2005) state is “a time when a multitude of approaches to knowing and telling exist side by side” (p.961). I employ a blend of research strategies and writing styles, that includes narrative self inquiry and insider practitioner and learning cycles (which could be considered a form of action research), through the 6 year case study. Alongside this I look into the future and use a more creative form of short story (scenario) writing that is based on literature research and current thinking. I am consequently using writing here as a form of knowing and inquiry. “Qualitative researchers in a variety of disciplines—medicine, law, education, the social sciences, and the humanities—have since found writing as a method of inquiry to be a viable way in which to learn about themselves and their research topic.” (Richardson and St. Pierre, 2005, p. 959)

By choosing to incorporate elements of different research methods into my research I am joining the community of social researchers that appreciate “the need also to develop research skills taken from a number of genres (quantitative as well as qualitative, in fact) in much the same way as artists learn how to paint, draw or sculpt in a number of different styles” (Seale 1999, p. 182).

Using the narrative form allows me to access and detail the “complexity and richness” (Webster and Mertova, 2007, p.2) of the processes I am involved in, either working independently or in collaboration with other teachers.

Narrative allows researchers to present experience holistically in all its complexity and richness. Narrative illustrates the temporal notion of
experience, recognising that one’s understanding of people and events changes. (Webster and Mertova, 2007, p. 2)

My research clearly crosses writing styles as I narrate my story. I have included scenarios concerning predicted futures of the school that reflect best practice as a way of envisioning the future and showing the way forward. I have used these for professional development of the school community, highlighting possibilities and opportunities. I use an action learning cycle (adopted from action research) to spiral my own learning, to show growth of ideas and the reflexivity that follows and have recorded this in detailed journal accounts. This process of spiralling of learning is frequently referred to and hence illustrated by figure 10.

![Image of Action Learning Spiral](image-url)

**Figure 10 Action Learning Spiral**

Figure 10 also shows how these action learning cycles occur at a range of scales from daily through to annual cycles. To support this blend of writing styles I present many ideas graphically, using visuals such as concept maps and mind maps, to tell my story, to highlight relationships and interactions and to focus attention on the many dimensions of pedagogy, curriculum design and its implementation.

Concept maps are visual representations of what you know and what you want to know more about (see Novak and Gowin, 1984). They are
ways of representing and thinking about your theories and practice (Samaras 2002). Concepts are ideas derived from your conscious perception and classification of facts and events based on their common characteristics. Concept maps are artistic and cognitive tools that allow you to discover and demonstrate conceptual connections between and within concepts in a self study. (Samaras and Freese, 2006, p. 73)

This research is set within the participatory paradigm although it also has aspects of the constructivist and critical theory inquiry paradigm. In the participatory paradigm the nature of the knowledge generated has an “extended epistemology: primacy of practical knowing; critical subjectivity; living knowledge”, (Lincoln and Guba, 2000, p. 170). The knowledge will be accumulated in “communities of inquiry embedded in communities of practice” and the primary voice will be “manifest through aware self-reflective action” and I learn “through active engagement in the process”. (Lincoln and Guba, 2000, p.171)

A Participatory worldview has been described in more detail by Reason and Bradbury (2001). They described the emerging worldview “as systemic, holistic, relational, feminine, experiential, but its defining characteristic is that it is participatory: our world does not consist of separate things but of relationships that we co-author.” (p.7). This worldview links strongly to my developing ideas of a classroom ecology, influenced by my background in teaching environmental systems, and the holistic approach taken to the process of curriculum design within my emerging living curriculum theory.

Knowledge generated by practitioners’ inquiries, as opposed to those of outside researchers, has immediate utility to the practitioner's context. (Cochran-Smith and Lytle, 2004 in Samaras 2011, p.74)

I am creating my living educational theory (Whitehead 1989, 1993, McNiff and Whitehead, 2005) within a particular context, my own situation and hence a
significant audience has been the local school one. The theory itself has not been stagnant or fixed but one that has constantly evolved as I interacted with other teachers in building a collaborative curriculum.

Your theory is created from within your work and represents your present best thinking. It is always developing because you are always in the process of development. Your theory is not static; it is living, part of your life. It is your own living theory (Whitehead, 1989, 1993). If your theory shows how your work can be understood as educational, you can claim that you are creating your own educational theory. (McNiff, Lomax and Whitehead 2003, p.25)

My main theme is about how I offer explanations for my educational practices, my personal theories of practice. I show how and why I do what I do and justify my practice as good practice, including the form and content of my research report as an integral part of that practice. (McNiff 2007, p.309)

Here is the heart of my research project. It is about the processes and theories I construct to explain what I and my teams complete. It is the theories that explain what my curriculum is, what the values that underpin it are, what the processes I use to construct it look like, what the forces that drive its construction consist of and reflect. It is about what “good” curriculum looks like and what “good” research looks, sounds and feels like in my context. It is about where curriculum is going as I envision practice and curriculum for myself, my teams and the future. My detailed narrative explores these areas as my own “living educational curriculum theory” emerges and is analysed. Different audiences will respond to this in different ways. Some may find applicability in their own contexts others may not. But at a meta-level it will provide insight into how one teacher in one context dealt with the many pressures and demands experienced during the current educational transgression.
The narrative that follows is based on the case study completed over 6 years and supported by a large collection of graphics. My graphics and the case study have presented a description of my thinking and practice over a long period of time.

During this study I led, interacted and networked with my classroom and research work on a range of scales. On a local scale I worked within a year level team constructing curriculum collaboratively and at times team teaching. I also worked on another scale with other schools in my local region, sharing models for constructing curriculum with both local primary and secondary schools. At another scale I discussed curriculum construction with other teachers through online networks covering Europe and the USA. The process was reflexive as I took action to address my values and redress weaknesses in design or outcome and further developed my living theory, after this range of inputs.

These theories are living in the sense that they are theories of practice, generated from within our living practices, our current best thinking that incorporates yesterday into today and which holds tomorrow already within itself. (Whitehead and McNiff, 2006 p. 2)

Whitehead and McNiff emphasise the importance of best practice and thinking at a particular time, how it comes from within us, our practice and thinking and integrates the time component. The authors present the idea of learning from the past, building understandings, theories and practice out of the past but at the same time, recognising that within this living understanding, theory and practice are the seeds and germination of ideas for improvement and tomorrow.

My work can also be seen as fitting into the critical paradigm with some elements of the interpretive paradigm at times. (Cohen, Manion and Morrison, 2000) The research is small scale in terms of its location within a small number of classrooms and the practice of a single teacher. However, much of the work has been shared and developed in collaboration with a number of other teachers and did therefore impact on a wider group of students across the school. As I have built personal
networks, ideas and models have been shared across local and other schools, both in Victoria and more widely.

**Methods**

This research is conducted within a narrative methodology. Case study and on-going action learning cycles have become the method used to collect data for the research. The narrative that follows includes extracts and annotated commentaries from the lengthy case study written between 2003 and 2008. It has been broken up into years to provide structure and sequence in this detailed and complex narrative.

In the study I have had many roles and consequently used several distinct voices that will be described in detail later in this chapter. During the study I worked with a series of supervisors for the purpose of critical dialogue and at the same time discussed many elements of the research with colleagues at work. These discussions occurred both informally and in a number of different settings including curriculum team meetings, Key Learning Area (KLA or faculty) meetings, professional development modules and on the school curriculum committee. I have also used two critical friends – one from outside the school and the other a past staff member. The term critical friend has been used to describe a relationship with a colleague who can contribute ‘new ideas, valuable resources, alternative strategies’ (Golby and Appleby, 1995, p. 154) The internal school critical friend is a past principal of the school and the outside critical friend is a university lecturer with expertise in case writing and commentary. These two provided valuable and different perspectives.

In this study I seek to understand and develop my theory through planning, action, reflection, dialogue and literature reading. This has transformed my practice and understanding over time’. I critique my practice from the micro level within a single lesson, to the larger scale of understandings involved in school wide curriculum transformation, against a context of international changes and trends.
In 1996 McNiff et al wrote that “Action research focuses on the “I”, the self studying the self, but it is done with and for other people. The aim of action research is personal improvement for social transformation, so it is essentially collaborative.”(p.30). This statement is also true for the narrative writing I have used in this case study in that I have been developing and describing my own living educational theory (Whitehead 1989, 1993, McNiff and Whitehead 2005) in collaboration with others.

A concern in this thesis is that research is practical and is of value to practicing teachers. Alongside this, it is important that the thesis contributes new knowledge about the characteristics of curriculum and curriculum design processes for the 21st century. The developing theory reflects what I, my school and the local Education Department have seen as important for students to know, and also 21st century processes of curriculum design and implementation. At the same time it is about thinking reflexively with more than mere reflection – actions and improvements needed to follow. This is based upon an understanding of the needs of students today and in the future, and therefore the type of curriculum that they need to experience. Theory without action is seen as meaningless. I develop and share theory that is of potential value for practitioners at work today and in the future. Hence the idea of a living, evolving and growing curriculum is at the heart of my thinking. The forms of understanding generated are varied – with my different styles of narrative writing and supporting diagrams presenting ideas and understandings in different formats. A separate audience for the thesis are those researchers interested in seeing how narrative may be used for research. This thesis explores some of the issues associated with this methodology alongside the curriculum discussion.

**The case study**

The case study, other school documents and other journals I have kept over many years of curriculum work at Green Gully provide valuable data and insights into my story. For me the case study has been the method I have used to develop my narrative. “People tell their stories to other people, and those other people restory
the originals into their own stories (Connelly and Clandinin, 1990); the accumulation of individual stories demonstrates a culture of collective learning.” (McNiff et al 1996, p.133).

According to Riessman much “narrative analysis is case centred” (Riessman 2008, p. 74) and can be used to generate general concepts that may become valuable in other contexts. “Case-centred models of research can generate knowledge that, over time, becomes the basis for other work - the ultimate test”. (Riessman 2008, p.13). The processes and models developed in this study may over time be applied, transferred or modified for use in other settings. This idea is further explored in the section on validity. The detail developed through a case study approach is very important and gives an insight into the complex and sometime chaotic processes that can occur during the evaluation and development of curriculum. “The advantage of the case study is that it can “close in” on real-life situations and test views directly in relation to phenomena as they unfold in practice.” (Flyvbjerg 2006, p.18) Case studies can allow immediate feedback concerning a newly implemented curriculum so that it is quickly modified and improved for the next cycle of implementation, either by that teacher or another.

Although narrative analysis is case centred, it can generate “categories” or, to put it differently, general concepts, as other case-based methods do. ....Similarly in social research, knowledge about general aspects of social organisation have sprung from close study of behaviour in a particular instance. (Riessman 2008, p. 13)

In this study, the case study described and existing within my journals, has led to curriculum principles, models and structures being implemented across the school, and in some instances being transferred for use in other settings. “Case study involves “generalisation to theoretical propositions”, which are to some degree, transferable”. (Bryman 1988, as cited in Radley and Chamberlain, 2001 p. 234. Health psychology and the study of the case: From method to analytic concern. Social Science and medicine, 53, 321-332 in Riessman 2008, p. 13)
Case studies often contain a substantial element of narrative. Good narratives typically approach the complexities and contradictions of real life. …… To the case study researcher, however, a particularly “thick” and hard-to-summarize narrative is not a problem. Rather, it is often a sign that the study has uncovered a particularly rich problematic. (Flyvbjerg 2006, p. 20)

The detailed case study, journals and diagrams developed during this study, will it is hoped, lead to this “thicker” understanding identified and described by Flyvbjerg and shared in the chronologic narrative that follows.

Most of the data for this research is contained within the case study I have written but it also includes a range of documents from within and outside the school that influence our decision making. This literature and the voices therein represent significant inputs and influences on the theory being generated. In the past this would have been considered a form of triangulation but as there will be many dimensions and facets to these inputs and as I am working using a mixed genres (Richardson 2000) approach I prefer the concept of crystallisation that has been proposed by Richardson and that has “multidimensionalities, and angles of approach” (Richardson 2000, 2005). The mixed writing used include the case study, scenarios and a range of concept maps and other diagrams.

**Case study writing**

In exploring the future paradigm for education and in particular for my own school I am using case study writing “as a method of inquiry, a condition of possibility for producing different knowledge and producing knowledge differently” (Richardson and St. Pierre, 2005, p.969). The process of writing will in fact lead to new ideas, create understandings and help envision the curriculum still to be developed. It will both describe and create my own ‘living educational theory’ (Whitehead 1989, 1993). “Writing has nothing to do with signifying. It has to do with surveying, mapping, even realms that are yet to come” (Deleuze and Guattari, 1980/1987 – cited in Richardson and St. Pierre 2005, p.969)
Writing has allowed me to make ‘real’ future scenario(s) for the school. “Scenarios are succinct narratives that describe possible futures and alternative paths towards the future” (De Alba et al. 2003, p.12). Scenarios have allowed me to explore dimensions of the future paradigm as it may operate, or that the school may want to envision. The ideas contained within the writing come from an exploration of schooling developments in Australia and overseas. I draw ideas from the growing literature on future schooling, (Beare 2001, Cheng 2002, Caldwell 2003, Hargreaves 2004, 2005,) selecting those that are most appropriate for our needs, after critical discussions and reflections. The writing is grounded in the context of my own school, dealing with the issues that arise during the educational transgression, with the focus on an individual teacher responding to the changing paradigm. I attempt to deal with the ‘realms to come’ as Deleuze and Guattari expressed it in 1987.

(1) I would think of writing as a method of data collection along with, for example, interviewing and observation and (2) I would think of writing as a method of data analysis along with, for example, the traditional—and what I think of as structural (and positivist)—activities of analytic induction; constant comparison; coding, sorting, and categorizing data; and so forth. (Richardson and St. Pierre, 2005, p.970)

My writing allows me the opportunity to develop, analyse and explore ideas and make them real. The writing process gives me content to both use and critically analyse. It is one of the mediums (the other being the diagrams) for my own living educational theory (Whitehead 1989, 1993, McNiff and Whitehead 2005) to develop. In writing I express and develop my ideas, question my understandings, reflect on my practice and develop new interpretations and models. Writing is my way forward through the complexity of the developing paradigm.

**The Visuals**

The writing in this study is assisted and supported by a series of diagrams such as mind maps (Buzan, 1974, 1984, 1993), concept maps, flow charts and a variety of other graphics illustrating my journey and ideas. Together these make up a
significant element of this study. 76 figures are included in this thesis, selected from more than 200 that were constructed by the author over the period of this study. A key question for narrative research to consider is “the invention of alternative writing forms that capture multiple aspects of themes and realities” (Amorin and Ryan, 2005 p. 584). These graphics represent and add a different dimension and perspective to the theories and understandings I develop. The graphics themselves contain components, interaction and processes that can together shape and illustrate my developing ideas. I use them as a think tank, to develop concepts and explore the relationships involved in an idea, concept or process, as well as for the presentation of ideas. Becker (1986 in Riessman 2008, p. 143) says that “Like spoken narratives, images contain theories based upon the image makers’ understanding about what they are looking at.” Although referring to photographs and the work of Becker this can equally be said of the graphics and images that I have produced. Riessman herself goes on to further explore the value of visuals with regard to narrative analysis, in particular identifying the value of visuals for sourcing biographies and philosophical positions.

There are many similarities between visual analysis and the word-based methods featured in earlier chapters. Interpretation remains a constant as investigators “read” images and text for meanings related to their research questions, theories, philosophical positions and biographies (perhaps). Just as oral and written narratives cannot speak for themselves, neither can images, although artists may have made them with a meaning in mind, indicated in a caption. (Riessman, 2008, p. 179)

Riessman identifies the importance of the context of the visuals, in particular how they relate to the times and place that they have been produced. The diagrams used in this study are important in that they have often been produced for use in my particular context, but have also grown out of that context with the specific local and international influences, as I constructed each one. As I analyse these graphics I acknowledge the context that has led to their development and in turn how they evolve and change over time. “Although visual materials make a
compelling appeal to realism, they, like oral and written narratives, are produced by particular people living in particular times and places.” (Riessman 2008, p. 179). The visuals can also act to “thicken” understandings and interpretations. “Working with images can thicken interpretation” (Riessman 2008, p. 179). For me they have often helped understanding to develop, not being a mere summary, but acting as a model or medium for interpretation and analysis of a situation. It is in the visual representation of a process that many of the critical key factors are highlighted. The various components can be traced to source or examined for context and also often reflect the complexity of understandings and interactions that are occurring, and that I have attempted to portray. This very complexity can at times, make them difficult to understand but this reflects the many demands teachers are being asked to consider. In my context visual images are very much part of the working world of many teachers. Much material is developed and produced in this medium. Learning is frequently summarised or indeed developed using this medium. Expectations are high that both teachers and students develop competence in using visualising software for thinking. Indeed students are assessed for their use of visual thinking tools using Information, Communication and Technology (ICT) within their curriculum. (This occurs in the Victorian Essential Learning Standards in both the ICT and Thinking domains). “Visual images are so thoroughly embedded in our worlds that not to take them seriously, and not to work at making them part of analysis, is to reduce our understandings of subjects; worlds” (p.182) Bell drawing upon Becker. (in Riessman 2008, p. 182)

**Outsider Voices in this Study**

The ‘arrest of experience’ is an important expression that for me refers to moving away from your day to day view of schooling, standing back, and putting it into a broader context. (Clough and Nutbrown, 2002). This is an important part of the reflection cycle involved in this form of research.

In order to develop theory and improve practice this is an essential activity that I need to engage in. ‘Making the familiar strange’ and looking at curriculum from a
new perspective is critical. “Thinking is always experiencing. Experimenting, not interpreting but experimenting, and what we experience, experiment with is always actuality, what's coming into being, what's new, what's taking shape” (Deleuze 1995, p. 106).

Green Gully S.C. represents one small educational setting, within which teachers and students are trying their best to achieve appropriate outcomes for their students. Teachers are operating within a system that is in the midst of a rapid change that is as yet not fully understood by the majority of the community. This lack of recognition has not just been at the individual classroom level but has existed within the leadership team and across the wider community. There is a transgression occurring from an old paradigm to a newer one that is being implemented in an intermittent and interrupted fashion as new initiatives, policies and directives impact at the school level.

There are many voices operating at local, regional, state, national and international or global levels. There are voices in the literature such as those coming from England through the Specialist Schools Trust (Hargreaves 2004, 2005). There are voices in the Education department speaking through the POLT\textsuperscript{10}, (DET, 2004) and VELS\textsuperscript{11} (DET\textsuperscript{12}, 2005). There are voices at the regional level speaking of provision of curriculum. At the school level there are leaders within the Principal class that are supporting the move to a more student centred schooling. There is a local student voice that wants greater engagement, challenge and individual assistance as shown by student opinion surveys and SRC\textsuperscript{13} discussions. At a different scale there is a trend to globalisation of education and the development of a futures perspective that includes the personalization of education (Cheng 2002, Hargreaves 2004, 2005).

\textsuperscript{10} POLT Principles of Learning and Teaching
\textsuperscript{11} VELS Victorian Essential Learnings Standards
\textsuperscript{12} DET Department of Education and Training
\textsuperscript{13} SRC Student Representative Council
**Voices within this study**

In this thesis I have identified a number of different researcher voices within the actual narrative writing process. Each of these voices uses different lenses. The first voice is that of the practitioner. For me this involves my roles of teacher in the classroom and leading teacher planning for, researching and advocating change. The second voice is that of the narrator, providing commentary, clarifying interpretations and context for much of what happens. The third voice is what I am terming the "metacognitive" voice that represents the voice when I am specifically analysing and reflecting upon the thinking and the theory that is being developed. It is the voice that attempts to explain the narrative being told by the author and describe the developing theory. Voice 1 is largely biographical and provides the chronological framing and sequencing of the narrative as well as providing a vehicle to present the data within the narrative. Voice 2 provides a commentary and some analysis through a process based upon reflection. The third or metacognitive voice provides some deeper analysis, drawing out some broad principles and understanding rather than at the sequences, actions and response level. These are the voices of the insider practitioner as narrative researcher.
In figure 11 I have attempted to show my understanding of the concept and characteristics of voice along with key aspects of the three individual researcher voices I have used in this thesis. The colours of the diagram support easier comprehension of my ideas. In different parts of the diagram I have noted the nature of the voices I use, their variations in style and in different contexts as well as their evolution over time. I have also identified the range of voices used both by myself and noted other voices that occur within this thesis. The voices in my thesis represent the on-going dialogue I have with myself in this narrative which could be described as a form of self study.

Self-study provides relevance and utility to practitioners particularly because the inquiry is contextually bound. Research is grounded in the living issues of practice and it incorporates the persons in their context or setting. (Samaras and Freese, 2006, p. 41)
The other voices (inputs and data sources) that I have identified in the figure start inside the school. These insider voices include the teams that I work with, my collaborators in curriculum design and implementation. They also include other teachers in my school, students in my own and other classes, as well as the wider school community. Outsider voices I have listed include my supervisors and critical friends. These outsiders I interact with directly through conversation and discussion both verbal and written. The voices I group as being even more outsiders are those I do not usually have individual or personal contact with, but undoubtedly impact on my thinking through their writing, and these include academic authors in the literature of education and authors of policies within the education department.

How my voice is expressed is also identified in figure 11. I use a multiplicity of writing styles. This makes my writing as Graham Parr (2008) describes it a hybrid. These different writing types or styles are also supported by the graphics I produce and together the graphics and writings make up my narrative. My eventual thesis consists of this wide range of different writing styles, including samples of school papers and policies I have been involved in constructing, my cases, the creative scenarios I write based on research and current understandings and the commentary or analysis of my writing along with the supporting diagrams.

The type of voice I use also varies with the audience I am talking to and the role I am playing. This has impacted through the writing of this thesis, its editing and final drafting.

Although it may be “natural” telling and writing stories is invariably situated and strategic, taking place in institutional and cultural contexts with circulating discourses and regulatory practices, always crafted with audience in mind. (Riessman 2008, p.183)

In time this audience also affected the criteria I used to analyse this research and its overall significance. The roles discussed and contributing in this narrative include teacher in the classroom, social researcher and teacher educator. In my role as teacher in the classroom I discuss classes and describe curriculum
developments. I also outline my own work as an individual and in various teams in the fields of curriculum design and implementation, and my work with students. As a teacher educator I work both in and outside of the school to help develop the curriculum and pedagogical skills of other teachers. This can be through my work in professional development modules, work within curriculum teams, team teaching with other staff, as a mentor or coach for other staff, or on the curriculum committee overseeing the evaluation and development of curriculum across the school. Most recently it has been as a Tertiary lecturer working with young pre-service teachers. Outside the school I have been actively involved in both online and face to face conferences, forums, classes and discussions sharing ideas and further refining my own. I have also been involved in discussions with academic audiences in seminars and classes sharing the perspectives of an insider researcher working in schools directly involved in designing, constructing and implementing changing curriculum. Each of these roles has had an impact upon the thinking and writing behind this thesis.

During the course of this study and as I have written and rewritten this evolving methodology I have come to the realisation that the voices in my study have been evolving and changing over space and time and with exposure to different audiences. As my ideas have evolved so have the voices as they begin to speak with greater understanding and awareness of themselves, their subjects and their audiences. The reality of engaging constantly in a reflective and reflexive process has led to these changing understandings and evolving voices.

**Validity**

Validity is an important key to effective research. If a piece of research is invalid then it is worthless. Validity is thus a requirement for both quantitative and qualitative/naturalistic research. (Cohen, Manion and Morrison, 2000, p.105)
In my study I am choosing to use validity criteria from a number of different authors. I have chosen authors from the fields of action research, writing as inquiry and narrative. The authors chosen proposed a number of criteria that I have listed below. I have selected the criteria of Anderson and Herr (2005) from the field of practitioner/action research and that developed by Richardson (2005) in the qualitative field of writing as a form of inquiry. In terms of an argument supporting the validity of this work I am also drawing on the narrative inquiry and analysis work of Riessman (2008) and also Webster and Mertova (2007).

In the final analysis, good narrative research persuades readers. Students can present their data in ways that demonstrate the data are genuine, and analytic interpretations of them are plausible, reasonable, and convincing........Persuasiveness is strengthened when the investigator’s theoretical claims are supported with evidence from informants’ accounts, negative cases are included, and alternative interpretations considered. (Riessman 2008, p.191).

With regard to the multiplicity of voices in this study (Parr, 2008) it is important that there is validity with each of them. There are therefore multiple levels or layers of validity as Riessman (2008) expresses it. “When applied to narrative projects, two levels of validity are important - the story told by the research participant and the validity of the analysis, or the story told by the researcher.” (Riessman 2008, p. 184). This study also needs to be very clearly grounded in its particular context with the detail available because of the nature of the insider practitioner research being conducted. “The validity of a project should be assessed from within the situated perspective and traditions that frame it”. (Riessman 2008, p.185)

One of the important values and advantages of this type of narrative research is the possibility of exploring in much greater detail the complexities of the processes at work in curriculum design. “Narrative is well suited to addressing the complexities and subtleties of human experience in teaching and learning”. (Webster and Mertova, 2007, p.1). Validity is also enhanced in this study by the chronologic nature of the data collection over a significant period of time. This
allows and supports the narrative nature of this study. “Experience happens narratively... Therefore, educational experience should be studied narratively.” (Clandinin and Connelly, 2000. p.19)

The principal attraction of narrative as method is its capacity to render life experiences, both personal and social, in relevant and meaningful ways. (Connelly and Clandinin, 1990, p.10)

Narrative studies are being used more widely across a range of studies according to Webster and Mertova (2007) because of their ability to explore more fully the complexities involved in human activities. In particular, this study explores the processes of a single individual constructing knowledge and developing his own theory, and it has been the narrative that supported this process.

Narrative inquiry has gained momentum in practice and research in a growing range of disciplines, partly on account of the constraints of conventional research methods and their incompatibility with the complexities of human actions. However, the move towards the use of the narrative approach has also been influenced by a philosophical change of thought to a more postmodern view with its interest in the individual and acknowledgement of the influence of experience and culture on the construction of knowledge. (Webster and Mertova, 2007. p. 4)

There are limitations to the conclusions that will be drawn from this study as they are clearly emerging from a particular school, classroom and time and a single individual. They are grounded deeply in a particular school context. “Narrative research, on the other hand, does not strive to produce conclusions of certainty, but aims for its findings to be ‘well grounded’ and ‘supportable’ retaining an emphasis on the linguistic reality of human experience” (Webster and Mertova, 2007 p.4). However, some of the processes and theory can be seen as transferable and able to be adapted to other contexts and classrooms as will be
argued and illustrated during the analysis. “Narrative research aims for its findings to be well grounded and supportable-it aims for verisimilitude, producing results that have appearance of truth or reality.” (Webster and Mertova, 2007 p.10). A finding may also be seen as important or of value in the context of the different audiences and in different locations as I have suggested above. “In narrative research a finding is significant if it is important.” (Webster and Mertova, 2007 p.5). Different audiences will find relevance and importance in different aspects of the work. Various models and templates for curriculum design are relevant and important to the school in a particular year. The process of curriculum design may be important to teachers from another state, if they see it reflects the processes they are prepared to use, in their own context. Learning and understandings in this way may become transferable.

More specifically the criteria I apply within my analytical framework include the criteria of Richardson (2005) and Herr and Anderson (2005). The Richardson criteria and the associated questions used to assess the validity of writing include substantive contribution, aesthetic merit, reflexivity and impact. These criteria are relevant and appropriate as this research has been conducted under a narrative framework.

Substantive contribution. Does this piece contribute to our understanding of social life?

Aesthetic merit. Rather than reducing standards, another standard is added. Does this piece succeed aesthetically?

Reflexivity. How has the author’s subjectivity been both a producer and a product of this text?

Impact. Does this piece affect me emotionally or intellectually? Does it generate new questions or move me to write? (Richardson, 2005).

This research is leading to a greater understanding of curriculum processes and planning in one school setting. It is embedded in ‘real’ practice as detailed in the
case study. The development of the metaphors and models, along with a greater understanding of the holistic processes that can be included in curriculum design, reflects the aesthetic merit criterion. My aim is to reflect upon what I have found to be a fascinating process of interpreting and developing a living curriculum theory. I hope to provide an honest account of a practitioner working to share his own learning within a local context with both the local and wider audience. This work hopefully stimulates the audience to think about the changing paradigm and current educational transgression along with its implications at every level from local to international. The varied research methods hopefully challenge readers to trial different ways to explore practice. The new theory presents new understandings and perspectives.

In my narrative analysis these validity questions are explored as part of the analysis. Their use aims to give validity and value to the writing. The initial questions have been further explored with the additional questions included in the table at the end of this chapter. (Figure 13, pages 84 to 87).

This case study although written under a narrative framework uses action learning cycles for collecting data. For this type of data appropriate validity criteria come from the field of action research. The criteria developed by Herr and Anderson in 2005 for use in action research projects, include outcome validity, process validity, democratic validity, catalytic validity and dialogic validity. Again with each of these forms of validity come the associated questions of the authors as shown below. In my narrative analysis I start with their questions and further expand and refine these with additional questions as shown in figure 13 on page 87.

**Outcome validity:** the extent to which actions lead to a resolution of the problem that led to the study.

**Process validity:** the extent to which problems are framed and solved in a manner that permits ongoing learning by the individual or system.

**Democratic validity:** the extent to which research is done in collaboration with all parties who have a stake in the problem under investigation.
Catalytic validity: the extent to which the research enables the participants to understand reality so as to transform it (after Lather 1991).

Dialogic validity: the support for the findings accorded by a 'peer review' of colleague practitioners. (Herr and Anderson, 2005)

With regard to these validity criteria in my setting, I have been looking to modify and improve practice in the context of the educational transgression identified in this study. This study shows one possible pathway to explore, model and manage the changes impacting on schools across the globe. The action learning spiral modified and developed by the author, leads to an on-going improvement through the process of planning, acting, observing and reflecting. Much of the research data has been shared with professional colleagues at Green Gully SC and a range of other audiences. During the course of the study there was on-going curriculum development at Green Gully SC that transformed the setting. The work of the author has been an active catalyst of change in this constantly evolving setting. This occurred both within the individual classroom and more widely. The research will be validated through sharing developments with colleagues both within the school setting and in the wider professional and academic setting. Sharing of the case study with both outsider and past insider critical friends also occurred.

Narrative Analysis
In this narrative I will be exploring how a participant agent encounters, explores and processes theory and ideas that impact on their role as teacher and curriculum leader, during an educational transgression. This is researched through 3 specific goals identified earlier on page 13. The narrative analysis aims to analyse both the methodology and nature of the narrative itself including its significance and validity, and alongside this and simultaneously the 2 curriculum goals that have been identified.

With my understanding of the methodology having gone through a number of stages and developed a growing complexity, so has the analytical framework in turn grown and become increasingly complex. Authors such as Webster and
Mertova (2007) and Riessman (2008) have written about narrative analysis and have been used to help develop this particular narrative framework. I have also drawn on the literature for case writing (Cherednichenko et al, 1999 ), writing as a form of inquiry (Richardson 2005) and action research (Herr and Anderson, 2005 and Whitehead and McNiff, 2006).

The narrative analysis in this study is concerned with analysing, questioning and interrogating the story I tell. “Narrative inquiry is concerned with analysing and criticising the stories we tell, hear and read in the course of work.” (Webster and Mertova, 2007 p.7). A simple definition of narrative analysis according to Riessman (2008, p. 6) is “narrative analysis (the systematic study of narrative data).” This study is an interrogation of my own work at Green Gully to describe the processes, results, understandings and theory generated. “Analysis is performed through the scaffold provided by descriptions of the processes, presentation of results, conclusions, risks and negotiation associated with the narratives.” (Webster and Mertova, 2007, p. 73)

Figure 12 summarises this framework for analysis of this narrative. It identifies the validity criteria that are being considered, along with some of the important questions associated with an analysis of the living theory, critical events and literary nature of the narrative.
<table>
<thead>
<tr>
<th>Goal 3</th>
<th>Goals 1 and 2</th>
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</table>

### ANALYSIS OF WRITING NARRATIVE PROCESSES

<table>
<thead>
<tr>
<th>LITERARY ANALYSIS</th>
<th>VALIDITY ANALYSIS</th>
<th>LIVING THEORY ANALYSIS</th>
<th>CRITICAL EVENT ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Substantive</td>
<td>Outcome</td>
<td>Is the theory holistic?</td>
</tr>
<tr>
<td>Scene</td>
<td>contribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plot</td>
<td>Richardson 2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porter Abbot 2008</td>
<td>Honest Trustworthiness</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Huberman</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Herr and Anderson 2005</td>
<td></td>
</tr>
<tr>
<td>Definition of narrative</td>
<td>Aesthetic merit</td>
<td>Process validity</td>
<td>What are the key critical events?</td>
</tr>
<tr>
<td>Riessman 2008</td>
<td>Richardson 2005</td>
<td></td>
<td>Why are these particular events critical?</td>
</tr>
<tr>
<td></td>
<td>Vertsimultude</td>
<td></td>
<td>Timeline of critical events</td>
</tr>
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<td></td>
<td>Truthfulness</td>
<td></td>
<td>Webster and Mertova 2007</td>
</tr>
<tr>
<td></td>
<td>Huberman</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Process validity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Huberman</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Herr and Anderson 2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent are you paying attention to narrative form and language, local contexts of production, and broader social discourses</td>
<td>Reflexivity</td>
<td>Democratic validity</td>
<td>Do the critical events lead to transferability?</td>
</tr>
<tr>
<td>Riessman 2008</td>
<td>Richardson 2005</td>
<td></td>
<td>Yoder-Wise and kowalski</td>
</tr>
<tr>
<td></td>
<td>Familiarity</td>
<td></td>
<td>Do the critical events lead to improved outcomes?</td>
</tr>
<tr>
<td></td>
<td>Huberman</td>
<td></td>
<td>Webster and Mertova 2007</td>
</tr>
<tr>
<td></td>
<td>Democratic validity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Huberman</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Herr and Anderson 2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your distinctive focus and related unit of analysis</td>
<td>Impact</td>
<td>Have we improved what we are doing?</td>
<td>Do the critical events lead to improved outcomes?</td>
</tr>
<tr>
<td>Riessman 2008</td>
<td>Richardson 2005</td>
<td></td>
<td>Whitehead and McNiff 2006</td>
</tr>
<tr>
<td></td>
<td>Transferability</td>
<td>Catalytic validity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Huberman</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Herr and Anderson 2005</td>
<td></td>
</tr>
<tr>
<td>The epistemological and theoretical perspectives that frame the project</td>
<td></td>
<td>What are the key threads and the underlying values and theory behind them?</td>
<td></td>
</tr>
<tr>
<td>Riessman 2008</td>
<td></td>
<td></td>
<td>Kruger</td>
</tr>
</tbody>
</table>

**Figure 12 A Framework for Narrative Analysis**

The process of analysis performed in this study started initially with a classification of the content within the case study, journals, writings and other documents that make up the data in this study. This classification was a form of threading as
described by Cherednichenko et al, 1999) and allowed the structure of the annual chapters to be defined. Content was chronologically classified under initial headings such as assessment, differentiation and personalising learning, values, Individual Learning Plans, habits of mind, vision building and curriculum design. This material was then ready for further analysis according to a wide range of “criteria”. The criteria I have developed and the questions associated with them are given in figure 13 (p.87).

One of the criteria or analytical tools chosen is the identification of critical events and an analysis of them (Webster, and Mertova, 2007). In this thesis critical events are identified and analysed in some detail because of their importance to the narrative and the insights gained during them. They are times of developing understandings and important growth in my theoretical approach.

Critical events are 'critical' because of their impact and profound effect on whoever experiences such an event. They often bring about radical change in the person. These events are unplanned, unanticipated and uncontrolled. To the researcher, the opportunity to 'access' such profound events holistically is an avenue to making sense of complex and human-centred information. (Webster and Mertova, 2007, p. 77)

Reissman (2008) asks us to consider the purpose of the narrative, the units of analysis and the clarity of its definition. These areas I have included within my narrative analysis framework.

What definition of narrative are you working with? To what extent are you paying attention to narrative form and language, local contexts of production, and broader social discourses? What is your distinctive focus and related unit of analysis? And, at a basic level, what are the epistemological and theoretical perspectives that frame your project? (Riessman 2008, p.200).
Bruner (1986) discussed the role of the narrative as a way of structuring and organising our memory. As I (re)construct the narrative from my various cases, journals and other forms of writing and drawing, I am analysing both the story and its context. I am re-exploring events that have been completed and questioning the underpinning values and rationale for the models and decisions that have been made.

Bruner goes further: narratives actually structure perceptual experience, organise memory, and “segment and purpose-build the very events of a life” (Bruner 1986, p.15). Individuals he argues, “become the autobiographical narratives by which they tell about their lives. To be understood, these private constructions of identity must mesh with a community of life stories, or “deep structures” about the nature of life itself in a particular culture. Connecting biography and society becomes possible through the close analysis of stories. (Bruner 1986, p.10).

This process is one that does not occur a single time but re-occurs as I re-visit events and seek and explore their meanings and the nature of their construction.

Included in the reporting (thesis writing) is the reflective process of analysing the research process itself: in other words exploring the dimensions of narrative inquiry. In the overall process of writing, the narrative is also seen as an iterative process, one of change over time. The research as a whole is conceived as the development of a narrative. (Connelly and Clandinin, (1990) in Webster and Mertova 2007, p.18).

Out of the case study recorded, together with my journals, has grown my knowledge and understanding. My work in and out of the classroom has been the opportunity to develop, implement and evaluate curriculum in an action learning spiral. It is the analysis of the findings from this process that make up the core of this thesis. Analysis of this work is in terms of the voices in the literature and the conversation that followed. “Narrative research forms a seamless link between the theory and practice embodied in the inquiry, and literature is used to enable conversation between theory and practice.” (Webster and Mertova, 2007, p.33).
The narrative that follows, along with its analysis, explores the underlying values and issues in curriculum construction and design during the educational transgression that is occurring widely around the world. It provides a commentary, from within a single school environment, on the issues facing teachers and curriculum designers much more widely. “A good narrative analysis prompts the reader to think beyond the surface of a text, and there is a move towards broader commentary” (Riessman 2008, p.13). The work has also acted to bring about change in the local and a potentially wider context.

Narratives often serve different purposes for individuals than they do for groups, although there is some overlap. Individuals use the narrative form to remember, argue, persuade, engage, entertain, and even mislead an audience. Groups use stories to mobilize others, and to foster a sense of belonging. Narratives do political work. The social role of stories-how they are connected to the flow of power in the wider world-is an important facet of narrative theory. (Riessman 2008, p.8)

Figure 13 identifies questions that this study addresses in different chapters of the thesis. Answers and relevant discussions occur within the narrative itself and then later in the discussion chapter. These discussions are relevant to both the validity of my research and the narrative analysis itself.
### Narrative analysis, Criteria and Initial Questions

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Some possible questions to discuss during the analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substantive contribution.</strong> Does this piece contribute to our understanding of social life? (Richardson)</td>
<td>Does the research provide insight into the processes, activities and discussions that lead to curriculum design and implementation in a school? Does it provide insight into the development of a personal working curriculum theory?</td>
</tr>
<tr>
<td><strong>Aesthetic merit.</strong> Rather than reducing standards, another standard is added. Does this piece succeed aesthetically? (Richardson)</td>
<td>In what way is the narrative interesting and engaging? Does the justification and discussion of validity contribute to the development of narrative methodology? How and in what way does the range of methods used have aesthetic merit? What contributions do the scenarios make? On what research are they based? What metaphors can I use? How do I make them effective? What can I learn from them? What new understandings can they bring? How can they make the “familiar strange”?</td>
</tr>
<tr>
<td><strong>Reflexivity.</strong> How has the author’s subjectivity been both a producer and a product of this text? (Richardson)</td>
<td>In what ways is the text reflexive? How is subjectivity relevant? In what ways does subjectivity contribute to an understanding of the narrative?</td>
</tr>
<tr>
<td><strong>Impact.</strong> Does this piece affect me emotionally or intellectually? Does it generate new questions or move me to write? (Richardson)</td>
<td>What new questions are raised? Does it suggest further research? How many of these question can be answered/discussed during this study?</td>
</tr>
<tr>
<td><strong>Outcome validity:</strong> the extent to which actions lead to a resolution of the problem that led to the study. (Herr and Anderson)</td>
<td>How has the living curriculum theory developed? What theory has contributed to it? What other factors have contributed to it? What is its nature? What are its components? What are its implications? Where might it or components of it be relevant in a wider sense? What has happened at Green Gully? How widely is it used? How is it used? How does the developing theory relate to CSF and VELS?</td>
</tr>
<tr>
<td><strong>Process validity:</strong> the extent to which problems are framed and solved in a manner that permits ongoing learning by the individual or system. (Herr and Anderson)</td>
<td>In what way is the developing theory process based? What do the processes look like? How complex and chaotic are they? How valid and effective are these processes? What action research has been occurring? Discuss the role of reflection in the processes. How does the theory relate to professional development at Green Gully? How do the models and processes developed at Green Gully compare with models etc developed elsewhere?</td>
</tr>
<tr>
<td><strong>Democratic validity:</strong> the extent to which research is done in</td>
<td>Who has been involved in the research? How have they been involved?</td>
</tr>
</tbody>
</table>
| Collaboration with all parties who have a stake in the problem under investigation. (Herr and Anderson) | How collaborative have the processes been?  
How is student voice considered?  
What other actors are involved?  
What was the role of the LSF and TSP programs?  
How have these programs impacted on the developing theory? |
|---|---|
| **Catalytic validity**: the extent to which the research enables the participants to understand reality so as to transform it (Lather 1991). (Herr and Anderson) | What has been the impact of the developing theory at Green Gully?  
How has Green Gully changed?  
What factors (internal and external) have contributed to this change?  
How have these changes occurred? |
| **Dialogic validity**: the support for the findings accorded by a 'peer review' of colleague practitioners. (Herr and Anderson) | How are the components of the theory used at Green Gully?  
How well accepted are they?  
How have the critical friends used during the study responded to various elements? (ex Principal and a college lecturer) |
| **Access** – to the process of knowledge construction and the participants in this process along with the various journals, documents produced, working relationships – time, scene, plot (literary analysis framework) (Huberman) | Discuss in terms of narrative validity. Access contributes to making the study more valid. See processes above. |
| **Honesty, trustworthiness** (Huberman) | How well grounded is the research?  
How believable is the data?  
How has subjectivity impacted the data?  
How accurate is the data?  
How coherent is the data?(global, local and themal) |
| **Verisimilitude/truthfulness** (resonates, plausible, believable, confirmation) (Huberman) | Do other stories resonate for the narrator?  
Are the stories (scenarios) plausible? On what are they based?  
Can the events, processes and models be confirmed from other places?  
Can I compare Green Gully with other contexts such as the differentiated school described by Tomlinson?  
Compare Living curriculum with other theories and models? |
| **Authenticity** (use of critical friends) (Huberman) | How honest, sincere and detailed is the story?  
Is there sufficient narrative coherence?  
How effective are my critical friends?  
What is the integrity of the knowledge created? |
| **Familiarity** (routine and/or unexpected) (Huberman) | How does distancing impact on the story told?  
How can I distance myself?  
What metaphors can I use? How do I make them effective? What can I learn from them? What new understandings can they bring?  
How can they make the “familiar strange”? |
| **Transferability** (analog to external transfer, applicable in another setting) (Huberman) | How transferable are the processes for investigation, the processes for developing the theory and the tools, models and understandings developed during the research?  
Is there enough comparison for similarity?  
Is there enough detail and accessibility for the comparison to
In what ways can theory generated through narrative inquiry and insider practitioner research be regarded as valid and become more transferable?

<table>
<thead>
<tr>
<th>Time</th>
<th>Have we set the time? (literary analysis framework)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What is my context?</td>
</tr>
<tr>
<td></td>
<td>What is the time frame?</td>
</tr>
<tr>
<td></td>
<td>How does the transgression and its phases relate to the narrative years?</td>
</tr>
<tr>
<td></td>
<td>When does the study begin to be more detailed?</td>
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<tr>
<td></td>
<td>When does the study finish?</td>
</tr>
<tr>
<td></td>
<td>Is there a time when the theory is finally finished?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Scene</th>
<th>Have we set the scene? (literary analysis framework)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What is my context?</td>
</tr>
<tr>
<td></td>
<td>What factors are at play here?</td>
</tr>
<tr>
<td></td>
<td>What is the local, regional, state, Australian and international context?</td>
</tr>
<tr>
<td></td>
<td>What is the educational transgression? Is it still occurring?</td>
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<table>
<thead>
<tr>
<th>Plot</th>
<th>Have I told the story? (literary analysis framework)</th>
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<tbody>
<tr>
<td></td>
<td>Have I told a detailed and interesting story?</td>
</tr>
<tr>
<td></td>
<td>Does it fulfil its purpose?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Holistic approach</th>
<th>In what ways is the research process and methods used holistic?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In what ways is narrative inquiry a more holistic approach?</td>
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<td></td>
<td>In what ways is the curriculum theory developed more holistic?</td>
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<td></td>
<td>Why is a more holistic approach valued?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Complexity and Chaos in curriculum design</th>
<th>How does the process of narrative inquiry provide an insight into the complex and/or chaotic processes of curriculum design and implementation?</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>How can the approach of narrative inquiry be regarded as complex?</td>
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<table>
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<tr>
<th>Does it work? (Yoder-Wise and Kowalski)</th>
<th>What are the recurring themes?</th>
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<tbody>
<tr>
<td></td>
<td>What are the causes, effects and consequences?</td>
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<td></td>
<td>What are any lessons learnt?</td>
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<td></td>
<td>Did the models, processes and curriculum planned work?</td>
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<td></td>
<td>Did the planned methodology work as expected? Did it evolve?</td>
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<tr>
<td></td>
<td>What new understandings were generated? Why?</td>
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<td></td>
<td>What mistakes were made? Why?</td>
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<td></td>
<td>What are any future scenarios? How are they different?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have we improved what we are doing? (Whitehead and McNiff)</th>
<th>What values are involved in developing my Living Curriculum theory?</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Is the curriculum designed an improvement? How?</td>
</tr>
<tr>
<td></td>
<td>Are the processes developed more effective? Why?</td>
</tr>
</tbody>
</table>

```
“What is my concern?
Why am I concerned?
What experiences can I describe to show why I am concerned?
What can I do about it?
What will I do about it?
What kinds of data will I gather to show the situation as it unfolds?
How will I explain my educational influences in learning?
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### Critical Events
*(Webster and Mertova)*

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>What are the key critical events?</td>
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<tr>
<td>Why are these particular events critical?</td>
<td></td>
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<tr>
<td>What is the impact of these critical events?</td>
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<tr>
<td>Timeline of critical events</td>
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<tr>
<td>Do the critical events lead to transferability?</td>
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<tr>
<td>Do the critical events lead to improved outcomes?</td>
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</tbody>
</table>


“What definition of narrative are you working with? To what extent are you paying attention to narrative form and language, local contexts of production, and broader social discourses? What is your distinctive focus and related unit of analysis? And, at a basic level, what are the epistemological and theoretical perspectives that frame your project?” (p. 200)

---

**Introducing the narrative and the reflection process**

As discussed earlier I will be exploring how a participant agent encounters, explores and processes theory and ideas that impact on their role as teacher and curriculum leader during an educational transgression. This is researched through working towards achieving the 3 specific goals listed on page 13. The narrative that

“In my research I am reflecting on my work and the teams that I am involved with through this journal. I am also using a second hard copy journal for various notes at workshops, seminars and readings. I also often use this journal for drafting ideas, listing questions and initial thoughts before I go to this electronic journal. I also collect minutes, agendas and other documents as part of my work in each of these teams and these documents will also become data for me to discuss. Another tool I use is to construct graphics to trace my thinking and summarise important ideas. These range widely in form varying from concept maps/charts to mind maps to flowcharts. These graphics provide a form of visual representation for my journey, a visual narrative to accompany my writing and thinking. In many ways the complex nature of these diagrams represents my increasing understanding of the complex nature of the process of curriculum design and the growing complexity of my ideas on curriculum theory.” (Extract from 2007 case study)
follows chronicles the development of my ideas. Extracts from the annually divided case study and other journals and documents demonstrate my work in the school, and reflect my developing understanding. The narrative begins in 2000 with the first section of chapter 4 setting the scene and providing valuable context and descriptions of features of the older paradigm prior to the transgression. It is followed by a series of year-long sections of the chapter covering different stages of the transgression. The narrative is written using the 3 different researcher voices identified earlier with each voice being represented by a different font and style. As figure 14 shows each voice operates at different scales and has its’ own lens, role, characteristics, format and style. Extracts from the 6 year case study occurred in each of the 3 voices and when directly quoted have been included within inverted commas. Samples of each voice are included within figure 14. The later commentary uses the narrator voice and does not use inverted commas. This commentary was added between 2009 and 2012.

The reader may also note that at times I use “we” in the case study. This occurs when I write expressing the point of view or the work of a team within which I was working. These teams included the LSF coaches, the curriculum committee or various curriculum construction teams. I distinguish between my own thoughts, activities, suggestions and ideas (I) and those of the collective group (we). This shows both their contributions and my own. It also reflects the collaborative processes that were occurring. It was important to include both within the case study, hence my use of both I and we, sometimes even within the one sentence.
<table>
<thead>
<tr>
<th>VOICE</th>
<th>CLASSROOM PRACTITIONER</th>
<th>NARRATOR</th>
<th>METACOGNITIVE THEORIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>AKA</td>
<td>Insider research voice</td>
<td>Academic Commentator</td>
<td>Philosopher researcher</td>
</tr>
</tbody>
</table>
| Roles and characteristics of each voice | • Tells the classroom teacher story. Delivers the script.  
• Describes practice within the classroom and in the immediate school context.  
• Develops curriculum for use in the school context.  
• Describes the Leading Teacher story alongside the Insider classroom teacher story.  
• Insider researcher using action learning cycle. | • Provides commentary  
• Describes and analyses the context with a range of perspectives.  
• Develops and discusses curriculum theory in the local context.  
• Narrates and clarifies  
• Some narrative analysis with a focus on the content of the classroom teacher story.  
• Some more academic perspective given. | • Develops Living Curriculum Theory of Practice  
• Highly reflective voice  
• Discusses issues of methodology within the narrative  
• Narrative analyst with a focus on the methodology, ideas and theory of curriculum and practice  
• Focus is the Reflection stage of action learning cycle  
• Academic voice |
| Scale | • Local  
• Visual Narrative  | • Local/ Regional / National /International  
• Audience for each voice  | • International  
• Style and Format  | • Calibri  
• Sample of voice  | • Arial  
• “During the 1990s I had been the curriculum coordinator (1991-1995) and the Technology across the Curriculum coordinator (1996-1999) and in these positions had assisted in leading the school in the implementation of Victorian Educational department policies in curriculum evaluation and learning technologies.” (Case study extract)  | • Italic, Times New Roman  
• “I have also been considering the nature of the term permaculture. Breaking it down one could regard it as permanent culture but it is a culture of sustainable growth. This is what is needed in the classroom a culture of permanent ongoing learning. Growth of the learning of teachers and students. How does this come about? How do we get this to happen? How do we design curriculum that encourages growth for all?” (Case study extract) |

Figure 14 The three voices
In their 2006 book Action Research Living Theory (Whitehead and McNiff), it was relevant to note that they see journaling, such as that used in this case study, as being valuable for identifying and describing actions and work that have been undertaken, providing a space and means for reflecting upon this work or action, and then for identifying any possible significance of this work. The last step may be the identification of new actions or directions for learning that might be taken. Sharing of this thinking and receiving critical and constructive feedback on any thoughts and directions is then very valuable. On page 89 of their text they also identified the key questions about practice and theory which I have considered during this narrative and its analysis. Each extract typically relates to one or more of these questions.

What is my concern?
Why am I concerned?
What experiences can I describe to show why I am concerned?
What can I do about it?
What will I do about it?
What kinds of data will I gather to show the situation as it unfolds?
How will I explain my educational influences in learning?
How will I show any conclusions I come to are reasonably fair and accurate?
How do I evaluate the evidence-based account of my learning?
How do I modify my concerns, ideas and practices in the light of my evaluations? (Whitehead and McNiff, 2006, p.89)

Later in their text (p.117) they have also addressed the role of narratives such as this for transformation. I have taken their ideas and developed the following diagram to summarise the process they have described.” (See figure 15). During this study I have made much use of this general model as I have described practice, explained and theorised it, gaining new insights before modifying and up-dating it in line with an imagined vision of the school or classroom practice.
This narrative from 2003 until 2008 is essentially told through extracts from my case study written during this period. The three research voices of the author are supported by the many figures accompanying this written text. A form of “messy text” is used to reflect the characteristics of these voices.

If the intent is to understand teacher voice in its fullness of context, and richness of dimension, its constraints, its possibilities, then representations of teacher voice(s) must be indeterminate, messy, polyvocal, conflicting, ambiguous, and fragmented, allowing for an aesthetic stance on the part of the reader. (Atkinson and Rosiek, 2009, p.192)

This narrative represents the various voices of the author, each with their doubts, questions and issues, wrestling with the key questions of this narrative, struggling to develop the curriculum theory that eventually emerges from within practice. Later chapters summarise key elements of this living curriculum theory, its implementation and also discuss issues of narrative methodology that have
emerged. The narrative as constructed has also allowed me to explore different “directions” in my thinking.

The narrative as written allows me to explore “the three-dimensional narrative inquiry space and the “directions” this framework allows our inquiries to travel-inward, outward, backward, forward, and situated within place. (Clandinin and Connelly, 2000, p.49)

In my narrative I am looking back at where I have come from, what I had been doing in my practice, and what the school had been doing during the older paradigm. I am also looking forward, constructing and re-constructing a vision for my classroom and the school. I am looking inward, at my values, at my own practice, evaluating and exploring how I can improve. I am also looking outward, sourcing ideas, strategies to improve but also looking to share thinking, to network, discuss and present ideas.

Finally this narrative as written requires you as the reader to develop your own interpretations as you hold up the story to your own experiences. Each reader will respond differently to what is written, interpret it differently and understand it differently.

The complexity of designing and teaching a curriculum is detailed in this narrative for one school. The living curriculum theory has emerged from my experiences within that school.

After receiving and reconstructing the text to make sense of it, the reader holds the reconstruction of the text up to her lived experience, constituted by personal experience and interpretive resources shaped within professional, social, and cultural discourse communities. She makes interpretive decisions about how that reconstruction should be appropriated into her repertoire of practical knowledge and past experience: (Atkinson and Rosiek, 2009, p. 182)
Chapter 4  The Narrative

Background to the Narrative  The Millenium Begins

A tale told in 3 voices

2000. The turn of the century and the dawn of a new era? The educational transgression was about to begin at Green Gully. This narrative begins with the context at the beginning of the century and provides essential background for the specific curriculum, assessment and pedagogy changes that were to come. This was my first year without a formal leadership position at Green Gully for more than a decade. I had resigned from my Technology across the Curriculum AST3 position at the end of 1999 for personal reasons and had reverted to an AST1 position as a consequence, so this year was to have a very strong but narrower focus on my own classroom. I was teaching junior classes in Integrated Studies (I.S.) along with senior VCE Geography. My senior class was to be one of my more successful with more than a quarter of the students achieving an A + on their final exams. This was to lead in time to my development over the next few years of what I was to term a “culture of success” in my classes.

This was a period for which I did not complete a journal after having kept a working journal from 1990 to 1999 and then recommencing one in 2002. This was to be supplemented by my more detailed case study that began in 2003. More of this as my thesis develops. This part of my study relies on archival material to allow me to return to this time. I am using personal recollections as well as records, minutes and documents produced by the school curriculum coordinator. I also use my own curriculum documents from that time to assist me in detailing our policies, processes and practices.

During the 1990s I had been the curriculum coordinator (1991-1995) and the Technology across the Curriculum coordinator (1996-1999) and in these positions had assisted in leading the school in the implementation of Victorian Educational department policies in curriculum evaluation and learning technologies introduction. The curriculum had been evaluated and modified in the context of the Curriculum Standards Framework (CSF1) that

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14 AST3 Advanced skills Teacher level 3
15 Integrated studies a mix of English, Geography, History and Social Studies
16 VCE Victorian Certificate of Education: a certificate for the final 2 years of High school
had been first published in 1995. CSF\textsuperscript{17} was introduced in Victoria in 2000. Along with the VCE study designs, published by the Board of Studies, these documents essentially determined the nature and structure of curriculum in Victoria. The CSF documents determined curriculum from Prep to year 10 and the Study Designs curriculum in years 11 and 12. Auditing of curriculum and ensuring appropriate balance was a key focus and indeed was a specified school charter priority for much of the 1990s.“KLA Balance: Provision of a broad general curriculum covering each of the 8 key learning areas from Years 7 - 10.” (School Charter 1997).

In 2000 the goals developed for the school charter covered curriculum provision, the educational environment, people management and physical and financial resources. More specifically the first goal included the following statement

To provide a comprehensive and sequential curriculum which meets the needs of the students, providing pathways to future education, training and work. To ensure that each student is challenged, extended and motivated to reach her/his full potential. (Curriculum Committee Handbook, 2000)

The three school charter priorities in 2000 were literacy, numeracy and technology across the curriculum. Alongside these charter priorities the curriculum committee action plan developed by the curriculum coordinator also had Department of Education (DoE) priorities such as drug education, sport education, foreign language pathways and civics implementation. Other important areas for discussion over the year included a review of the assessment and reporting policies, curriculum review and CSF2 implementation along with curriculum documentation, a review of acceleration and enrichment programs, a review of transition programs and the 7-9 curriculum. The work planned for this voluntary committee was invariably very extensive. Reviews of existing subjects and documentation of the processes of curriculum construction along with any discussions of pedagogy made up a

\textsuperscript{17}“The Curriculum and Standards Framework (CSF) describes what students should know and be able to do in eight key areas of learning at regular intervals from the Preparatory year to Year 10. It provides sufficient detail for schools and the community to be clear about the major elements of the curriculum and the standards expected of successful learners. At the same time each school works out the best way to organise its own teaching and learning program, taking into account government policies and the school community’s priorities, resources and expertise.” (Curriculum at Work CD Rom, 2000)
very small part of this heavy workload. Much of the work was responsive to directions from the department of education. By the end of the year we would have been introduced to the term “Middle Years” which would have a very significant impact upon our teaching practices and the term pedagogy would have arrived in our vocabulary. Most of the curriculum discussion across the school would occur on scheduled curriculum days when an agenda set by the curriculum committee would address one or more of the priorities and also areas listed in the action plan. (See appendix A).

Curriculum days were limited as four were used for report writing and reporting to parents. The actual number of curriculum days spent discussing and reviewing the curriculum would be limited to one or two. It was on these days that we would audit the curriculum for alignment with CSF2, we would also finalise curriculum units/topics, sometimes allocate tasks for writing, refine/decide assessment tasks, review assessment policies and all the multitude of other tasks that we would try and include. Often a curriculum day would be used to look at some aspects of welfare and discipline, review a new policy etc. In November 2000 we had sessions on implementing CSF2, discussing some big questions related to our 7-10 program with regard to future changes in its structure, and introducing the Middle Years. Days such as these were very important with regard to the educational transgression, that was now beginning, because from within these discussions would come significant changes to assessment, curriculum and pedagogy practices and policies over the next 10 years.

**CSF 1 and 2**

In their foreword Dow and Ball (2000) suggest that the skills and knowledge required for the 21st century have been considered and more fully incorporated in CSF2. There is an emphasis on the use of ICT across the curriculum and the development of more work place skills. There are clear statements of what students are expected to achieve in the standards described.

The framework is designed to support teachers and parents in meeting the learning needs of all students. It provides a strong focus for teaching and learning (the curriculum) and clear statements of what students are expected to achieve (the standards) in eight key learning areas during the first eleven years at
school. This edition takes into account the skills and knowledge students now need to prepare them for work and further learning in an increasingly information-rich world. (Dow and Ball, 2000, foreword)

What exactly was the CSF and how did it impact or control our school curriculum development?

The CSF is a framework, not a detailed syllabus or blueprint for the development and delivery of specific programs, teaching methods to be used, allocation of time to particular learning areas, or materials and methods of assessment. .... The CSF supports schools in developing and delivering programs by providing a strong focus for teaching and learning (the curriculum) and clear statements of what students are expected to achieve (the standards). (DET\textsuperscript{18}, Curriculum at Work, 2000).

Each key learning area provided a clear curriculum focus, to show major content to be covered, and also detailed standards to be achieved and reported upon. Schools were responsible for developing their own programs using this framework. Principles of Assessment were also provided within CSF2

1. The fundamental purpose of assessment is to establish where students are in their learning to establish starting points for further learning, identifying areas of under-performance, tracking growth and measuring value added. This process requires a common framework or scale along which progress can be mapped. Within the CSF the learning outcomes and indicators at each level provide such a scale.

2. Assessment methods need to be appropriate for the learning outcomes being assessed. There are many sources of evidence about student achievement.

3. Estimating a student's level of achievement involves an on-balance judgement based on assembled records of the student's work a variety of tasks, performances, etc. (DET, curriculum at work, 2000).

Assessment at Green Gully varied significantly across the school in 2000 and consequently was the cause of much discussion. The assessment systems and practices were very different in years 7 and 8 when compared to those of years 11 and 12. The years between

\textsuperscript{18} DET, Department of Education and Training
were a transition from one to the other. Over time there had been an increased alignment between the practices in years 9 and 10 with those of the final years of schooling. The school was required to use formal assessment of work requirements and graded common assessment tasks (CATs) at the senior level and this structure was introduced into years 9 and 10 during the 1990s. Years 7 and 8 however, were operating with goal based descriptive assessment practices and not giving formal graded assessment, with the exception of test results.

**Curriculum Planning and Design**

The processes of curriculum construction used at Green Gully around this time were generally very different to what has developed since. As the only senior geography teacher I worked independently. I consulted with the teacher of year 10 Geography but generally worked by myself. The curriculum was defined by the formal requirements in the published study designs. I attended regular professional development sessions and conferences out of the school to keep myself up-to-date. Subject association publications were important with regard to monitoring changes and resources. Publications such as “Interaction” produced by the Geography Teachers Association of Victoria (GTAV) included reviews, new resources and sample units that provided valuable ideas. The GTAV also released a textbook that I used as the key resource. The consultations with the year 10 teacher centred on the most appropriate topics to prepare students, meet the CSF requirements and importantly develop the skills needed for the VCE. We took care to align these as quickly as possible whenever any changes were mooted.

The situation with curriculum design for Integrated Studies (I.S.) in the junior school was somewhat different. I.S. had initially been developed at the school in the early 1980s by a team of Humanities and English teachers. It had been a collaborative effort by the team working in small groups. Topics had been decided by the whole group based on previous experiences, known curriculum requirements and relevance to students. A balance of topics had also been chosen to cover history, geography, environmental studies, social studies and health education. English was integrated within these topics. Over the years changes had been made to maintain an alignment with Curriculum Frameworks and CSFI. These
changes to topics and redevelopments of units occurred collaboratively. This was an unusual process within the school as topics once decided by faculties were then generally developed by individuals based on available textbook resources. There were no formal school guidelines laid down about the process of curriculum documentation at this time. Over the years heads of departments/faculty coordinators were asked to develop handbooks and these had varying degrees of detail. The I.S. units tended to have content objectives and some skills goals. Suggested student activities were described and student and teacher resources were listed. The emphasis was on subject content and skills. Social skills were often taught separately. Integrated studies was also unusual in that a pastoral care element existed.

The curriculum at work cd highlighted a range of factors to consider in curriculum planning.

   Some of these issues include; the range of abilities and learning styles of the students in the classes taught, the desire to challenge and extend some students while supporting and developing the key competencies in all, the socio-cultural backgrounds and the requirements of wider program and policy imperatives such as the CSF, Literacy, Numeracy, the teaching of Science, Civics and Citizenship, the integrated curriculum and demands of rigorous Assessment and Reporting. The list is a long one! (DET, curriculum at work, 2000)

CSF2 also asked us to start considering other factors in our planning.

   Incorporating Learning Technologies in your planning......Other considerations include providing for: Different learning styles, Metacognitive thinking, Authentic learning, Integrated learning, Reflective learning, Cooperative learning, Active learning, Inquiry learning, Digital literacy, Integration of ICT.(DET, Curriculum at work, 2000)

It was the first time we were hearing or seeing terms such as “metacognitive thinking” and “authentic learning” as they were concepts we had not been taught to consider when we did our training (for many of us this was the 1970s). I, like many others was more familiar with the growing importance of the ever changing learning technologies. We had set up a system of post-school professional development modules running to allow us to up-skill ourselves in this area.
This CDrom also highlighted many important general skills and key competencies that were required without necessarily integrating them into the CSF2 content, teaching, reporting and assessment requirements. This was a limitation of the CSF that would be addressed in the Victorian Essential Learning Standards (VELS).

Skills that students require are:

- Literacy and numeracy,
- Technological capabilities,
- Resilience and flexibility,
- Communication skills and exchange of ideas,
- Awareness and appreciation of cultures,
- Vision and open mindedness,
- Critical thinking skills and adaptability,
- Teamwork and community service,
- Awareness of one's own choices,
- Commitment to personal and community growth (Adapted from Dr Tony Townsend, Monash University). (DET, curriculum at work, 2000)

The changing role of the teacher was also mentioned on the CD where it was described as “one of a guide, co-learner, constructor and facilitator.” (DET, curriculum at work, 2000). This was a significant change to the traditional role of teacher as conveyer of knowledge that was the position most commonly held within the school at that time. This is an important element of the transgression discussed in this narrative. The navigator schools also played an important role in the transgression as they developed and shared a new model of learning. Voices from these schools strongly influenced many other schools through various professional development programs.

Over the duration of the project the schools have developed an innovative model of teaching and learning.......The model is essentially a form of student centred-teacher guided learning. It blends aspects of constructivism, authentic learning, inquiry learning, Gardner's Multiple Intelligences, Bloom's Cognitive Domain and de Bono's Thinking Hats into a pattern of sequenced but integrated knowledge, skills and attitudes informed by the Curriculum Standards Framework.. (DET, curriculum at work, 2000).

This cd was indeed giving us an insight into the greater complexity that would be required in our curriculum design processes.

**Curriculum Units**

During 2000 with the arrival of CSF2 some adjustments started to be made to the scheduling of units in the I.S. curriculum. Some units were displaced or moved from one
year level to the next. We also reviewed assessment activities for these units and explored ways in which greater use could be made of ICT resources in the teaching of the units. Suggestions were also made on the curriculum at work cd with regard to the structuring of units. These suggestions were not taken up actively by the school and various structures and planners were used both within the Humanities department and across the school. The elements suggested by CSF2 are shown below:

- **Synopsis**
- **Key understandings**
- **Focus questions**
- **Key terms**
- **Links to the CSF 2....**
- **Processes of investigation and communication ....**
- **Perspectives illustrating some of the ways that the perspectives of Civics and citizenship education, Environmental education and Communications technology are demonstrated in that unit.”(DET, curriculum at work, 2000)**

Different suggestions were also made for primary schools where an integrated curriculum model was being proposed. It is interesting to note that many years later we will discuss and incorporate elements from this model within our own planners with regard to what makes up both a good lesson and a good unit planner.

For primary schools (Levels 1-4) the units are organised using the seven stages of the integrated curriculum model: Tuning in, Preparing to find out, Finding out, Sorting out, Going further, Reflection, Taking action (DET, Curriculum at work, 2000).
The Transgression begins in earnest in 2003

Stories don’t fall from the sky (or immerge from the innermost “self”); they are composed and received in contexts-interactional, historical, institutional, and discursive—to name a few. (Riessman 2008, p.105).

And stories must always be considered in context, for storytelling occurs at a historical moment with its circulating discourses and power relations. (Riessman 2008, p.8)

The narrative that follows describes and discusses my journey through the transgression. It is told in the 3 research voices (see page 89), distinct voices each of which provides insight into what was occurring. The changes experienced during this time were dramatic. Figure 16 lists many of them. The story of these changes, the reasons for them and their successful implementation, is an important one as it reflects similar ones occurring around the world. The story of curriculum design and its implementation during the transgression is the central one told. Stories of practice around pedagogical innovation are also told although with less detail.

The transgression element of this narrative really emerges in detail in 2003 with extracts from my first experiences of case writing. Figure 1 (page 16), summarised key aspects of the local context that are relevant to this narrative. It identified key temporal, spatial, social and personal factors that impact upon the story. Understanding of my context is critical to an understanding of this narrative as it is from this context that my story emerges.

In narrative thinking, context is ever present. It includes such notions as temporal context, spatial context, and context of other people. Context is necessary for making sense of any person, event, or thing. (Clandinin and Connelly, 2000, p.32)

2003 was a time when a great number of innovations and changes were arriving at the school (see figure 16). Elements of the middle years program had entered the
school and were impacting at the junior levels. Figure 16 identifies and groups the many innovations that were occurring at the one time. It is these changes that were beginning to occur that were to shape my thinking and practice. Changes were occurring at a variety of scales from the local, to the state as well as the International. “Finally, we can see that teacher voice(s) are profoundly shaped by the local district, region, and state in which the teacher practices.” (Atkinson and Rosiek, 2009, p.192)

Figure 16 Innovations 2003
In my 2003 case study I explored my own work within the school. In particular I documented my processes for designing curriculum and how they changed over the year. I was also extensively involved in reviewing the curriculum and considered these findings as I re-developed my own classroom curriculum. I was also actively considering how we could personalise the curriculum through the use of Individual Learning Plans (ILPs).

It was an exciting year for me, listening to many outsider voices through my reading, at conferences (eg. NAVC0N2K) and at school based professional development days. New Leading Teacher roles were identified, advertised and appointments (including mine) made. The major critical event and indeed what became a life transforming one for me was my development of the initial version of the Learning Lattice which became eventually a cause and rationale for the writing of this thesis.

In this year I was very interested in using more of the “middle years” approach that we were being exposed to through professional development sessions at staff meetings. In reality many of the strategies within this approach had been around for a long time but they were being brought together under this “middle years” approach. According to my case study these are the characteristics of this type of approach.

- “Team approach
• Authentic and realistic tasks for assessment
• Working in groups of varying sizes
• Active participation by students
• Creative skills –
• De Bono/PMI/Blooms/Gardner – Multiple Intelligences –
• Thinking skills
• Decreased alienation – increased engagement
• Interaction with class – community
• Increasing social and personal resilience
• Increasing learning technology skills
• Negotiated curriculum
• Inquiry learning
• Student choice
• Increasing engagement of boys”(Case study 2003)

One outsider voice speaking to us very clearly in 2003 was Lane Clark19

“The recent school-based Lane Clark seminar provided me with a context to radically alter my curriculum delivery for one or a number of units over the year. After a very stimulating session my initial response was why didn’t I have this day 25 years ago? What a serious difference it could have made to my teaching over the interim period! It provided a strong theoretical framework for many of the ideas which we had trialled in the 80s and then moved away from with the core curriculum constructs of the 90s.

With this background I decided to trial a new approach in my term 2 work. See figure 17 for my draft unit design process. I started out by attempting to immerse my students in the theme topic of Animals. I

This extract described the curriculum construction process I was now exploring. Throughout this narrative there are extracts of my thinking on curriculum design, pedagogy and assessment. Changes across all three components of teaching were ongoing as improvements were sought and I listened to voices from within the school and outside our immediate context. The changes reflect my responses to these voices and my developing living curriculum theory. You will also read observations and comments on the implementation processes involved.

19 Lane Clark was an external consultant brought into the school for a number of sessions to provide professional development for the staff. She discussed her ecology of learning program along with many other aspects of middle years research, assessment and the thinking curriculum. She also discussed her thinkbox framework.
had a planned camp with the group, which was an ideal introduction for those who attended......I brainstormed possible topics, activities and options with the class, recording their suggestions and incorporated them into the set of student activities. We had been reading a novel with some appropriate themes, which could be incorporated, and I also planned another task based around a novel for the term. I showed a David Attenborough video on “the life of mammals” and set tasks based on this.” (Case study, 2003)

Figure 17 Draft unit design process 2003

“I then collected and listed the appropriate outcomes from CSF 2 to give me formal aims for the unit. These were also listed and given to students to form part of their assessment process. I realised that what I was doing up to this part was not a great deal different to what I had done many years ago. What was now significantly different was to examine more closely the learning processes that the students would use and to try and incorporate a
much wider range of learning styles and strategies into the unit. Here I used Lane Clark’s Thinkbox and her Petite Inquiry models to broaden my package for students. In term one I had completed a MICUPS – multiple Intelligences checklist on the students and was aware of their strengths and preferred styles. I had not taken these into account significantly either in the learning process or the assessment process.... In the unit design I attempted for the first time to cover all the different intelligences to allow great choice and flexibility for the students. My hope was that this would also increase engagement.” (Case study, 2003)

Assessment in Practice 2003
“Assessment was considered in terms of students developing a folio of completed tasks. Each student had to include at least one that would include the use of a learning technology. In reality they have all made considerable use of the computers for data collection and presentation. ...An improvement required for next year however, is the development of more formal assessment criteria for each of the activities. Informal discussion has assisted in activity design but at this stage and without much prior experience my expectation/hope of them developing their own criteria has not materialised. The students have enthusiastically launched into assignments, posters and PowerPoints with which they are already comfortable.... I have used some self-assessment strategies – early in week 4 asking them for an assessment of their progress. I asked them what had been finished, what problems they were having finding data or putting it together. I asked them what they had done well and what they could improve upon.”(Case study, 2003)

Curriculum review 2003
“Figure 18 has appeared here because the aims of the review incorporate important classroom practise aims as well. Hopefully my middle years processes are working towards them.” (Case study, 2003)
As I mentioned above, 2003 brought the life changing lattice. I had no idea at the time how much of my thinking time in the future and my work at both the secondary and tertiary level would be linked to the lattice. I have shared the lattice at local and International conferences as well as used it within my school, across the entire curriculum, and at a variety of levels. This section from my case study goes through the process of lattice construction and the responses to the lattice within the school. This was a key “critical event”. (Webster and Mertova, 2007)

Birth of the Learning Lattice 2003

“The other issue I am facing is that I want to plan and assess more than the traditional CSF outcomes. It is important to observe, monitor, assess and evaluate all the outcomes that are occurring in the classroom. I want to plan, assess and evaluate the process outcomes, the metacognitive ones that are part of the learning environment. Glen Waverly S.C. talks about the powerful learning that can occur if students understand better their own

As I mentioned above, 2003 brought the life changing lattice. I had no idea at the time how much of my thinking time in the future and my work at both the secondary and tertiary level would be linked to the lattice. I have shared the lattice at local and International conferences as well as used it within my school, across the entire curriculum, and at a variety of levels. This section from my case study goes through the process of lattice construction and the responses to the lattice within the school. This was a key “critical event”. (Webster and Mertova, 2007)
learning strengths, styles and weaknesses. This is something I need to head towards.

Neville Johnson (from Melbourne University) was at the school last week leading a session for the local schools on cluster-based innovation. I had been toying with how to set up a diagram with 3 sides to allow CSF outcomes to be assessed against learning/thinking skills and presentation methods. Our IT coordinator had been exploring how to draw up 3-sided graphs for me to trial. Then near the end of his session Neville mentioned an Integration wheel as a tool for evaluating all the learnings that have occurred across a lesson. This was a new idea and I found it an exciting possibility alongside my triangle!

Later that evening, after perusing my student portfolios, I sat down and returned to my triangular graph. It would not work! Instead I started to develop what I now call a Learning Lattice. This evolved during the evening into what I believe is potentially a very exciting and powerful tool for planning, assessment and evaluation of individual activities, units and courses. (See the sample in figure 19). I have called it a lattice because learning interlocks within a classroom. The process is not singular or unidirectional. A classroom is very complex and dynamic. There are a very wide range of skills and outcomes being developed and achieved.

The lattice can help a student assess their progress; it will help me to assess them and to report on them individually and as a group. It is potentially a powerful tool for planning and evaluating a topic, unit or course. It has helped me to write an individual learning plan.... It also has potential to be used across all levels, and I have shown this by developing a lattice for unit 4 VCE geography that I am about to start teaching. A bank of items can be developed to support the lattice. ...The learning styles/multiple intelligences segment could be colour coded to reflect progress or planning across the three separate areas of presentation, planning and product. Progress
over a year could be choroplethed to show re-inforcement or progress in an area.” (Case study, 2003).

<table>
<thead>
<tr>
<th>E-LEARNING SKILLS</th>
<th>HABITS OF MIND</th>
<th>MULTIPLE INTELLIGENCE USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word processing</td>
<td>Persistence</td>
<td>Self presentation</td>
</tr>
<tr>
<td>Inserting images</td>
<td>Manage impulsivity</td>
<td>Body process</td>
</tr>
<tr>
<td>Research from CD</td>
<td>Take responsibility for learning</td>
<td>Nature product</td>
</tr>
<tr>
<td>Research using web</td>
<td>Take prior knowledge risks</td>
<td>Spatial</td>
</tr>
<tr>
<td>Including web addresses</td>
<td>Listening to others</td>
<td>People</td>
</tr>
<tr>
<td>Web author identified</td>
<td>Work collaboratively</td>
<td>Word</td>
</tr>
<tr>
<td>Powerpoint presentation</td>
<td>Think and communicate clearly</td>
<td>Math</td>
</tr>
<tr>
<td></td>
<td>Respond with wonder</td>
<td>Music</td>
</tr>
<tr>
<td></td>
<td>Gather data through all senses</td>
<td>Deep</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CSF OUTCOMES</th>
<th>UNIT: YEAR 7 LAND</th>
<th>LEARNING SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>ACTIVITIES A Selection of activities including the following:</td>
<td>Monitor learning</td>
</tr>
<tr>
<td>5.8 Use strategies to select resources, locate, interpret and synthesise key information and ideas from a range of texts.</td>
<td>Life of animals - Video activity</td>
<td>Research skills</td>
</tr>
<tr>
<td>5.9 Use a range of text types to write about some challenging themes and issues.</td>
<td>Secret of NIMH - Novel activity</td>
<td>Work independently</td>
</tr>
<tr>
<td>5.10 Adjust writing for a range of contexts, purposes and audiences.</td>
<td>List other activities you choose</td>
<td>Decide what to do</td>
</tr>
<tr>
<td>Geography</td>
<td>1.</td>
<td>Evaluate progress</td>
</tr>
<tr>
<td>5.2. Explain how natural processes and human activities change environment.</td>
<td>2.</td>
<td>Self assessment</td>
</tr>
<tr>
<td>Science</td>
<td>3.</td>
<td>Use of assessment rubric</td>
</tr>
<tr>
<td>Describe interactions between living things and between living things and their non-living surroundings.</td>
<td>4.</td>
<td>Plan tasks so actively engaged each period</td>
</tr>
<tr>
<td>5.8</td>
<td>5.</td>
<td>Meet deadlines</td>
</tr>
<tr>
<td>5.9</td>
<td>6.</td>
<td>Creative thinking</td>
</tr>
<tr>
<td>5.10</td>
<td>7.</td>
<td>Data collection</td>
</tr>
<tr>
<td>5.10</td>
<td>8.</td>
<td>Data analysis</td>
</tr>
<tr>
<td>5.10</td>
<td>9.</td>
<td>Problem identification</td>
</tr>
<tr>
<td>5.10</td>
<td>10.</td>
<td>Problem solution</td>
</tr>
<tr>
<td>5.10</td>
<td>11.</td>
<td>Participate in Group work</td>
</tr>
<tr>
<td>5.10</td>
<td>12.</td>
<td>Organize group tasks</td>
</tr>
<tr>
<td>5.10</td>
<td>13.</td>
<td>Group recorder</td>
</tr>
<tr>
<td>5.10</td>
<td>14.</td>
<td>Group leadership</td>
</tr>
<tr>
<td>5.10</td>
<td>15.</td>
<td>Negotiation</td>
</tr>
<tr>
<td>5.10</td>
<td>16.</td>
<td>Conflict resolution</td>
</tr>
<tr>
<td>5.10</td>
<td>17.</td>
<td>Video listening skills</td>
</tr>
<tr>
<td>5.10</td>
<td>18.</td>
<td>Video note-taking</td>
</tr>
<tr>
<td>5.10</td>
<td>19.</td>
<td>Novel: Comprehension Analysis of ideas</td>
</tr>
<tr>
<td>5.10</td>
<td>20.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENGLISH SKILLS</th>
<th>PRESENTATION METHOD</th>
<th>BLOOM’S TAXONOMY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate organisation</td>
<td>Assignment/Booklet</td>
<td>Evaluation - judge</td>
</tr>
<tr>
<td>Attractive Layout</td>
<td>Videotape</td>
<td>Synthesis - invent</td>
</tr>
<tr>
<td>Consistent layout</td>
<td>Poster</td>
<td>Analysis - organise</td>
</tr>
<tr>
<td>Table of contents</td>
<td>Poem</td>
<td>Application - apply</td>
</tr>
<tr>
<td>Page numbers</td>
<td>Story</td>
<td>Comprehension-report</td>
</tr>
<tr>
<td>Detailed Bibliography</td>
<td>Survey/Graph</td>
<td>Knowledge - explore</td>
</tr>
<tr>
<td>Spelling</td>
<td>Powerpoint</td>
<td>Bloom / Anderson</td>
</tr>
<tr>
<td>Expression</td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td>Paragraphs</td>
<td>Essay</td>
<td></td>
</tr>
</tbody>
</table>

Figure 19 Learning Lattice: Outcome assessment sheet Year 7 Animals Unit

109
“REACTIONS:
Well I have certainly had some rich and positive reactions to the Learning Lattice over the past month. I showed it initially to the Learning Technologies coordinator and she was very excited by its possibilities. After this I have discussed it with the curriculum coordinator and members of the principal class. I have now presented it briefly to the group workshopping Lane Clark and once again all have been favourable and seen its’ potential. ...

The greatest reaction has however, been from the principal. She was in fact keen for me to not only publish but to consider completing a thesis on its development and trial. I ended up over at another Secondary College discussing the Lattice and its potential with principals from other local schools. “(Case study, 2003)

**Back to the classroom: Evaluating Progress**

“The unit has just finished and many students have completed a variety of tasks over the term. Few have coped as well as I had hoped with the responsibility I gave them. They need training in working individually on this wider range of tasks. To expect great work with a video camera without teaching them how to plan a video was too high an expectation. Next time they will need more structure to help them complete the task. Then I hope they will be able to work more independently in the future. Team tasks did not work as I had hoped due to lack of planning and leadership skills. The example of the play on hunting was a disappointing result. An enthusiastic group started the task and wrote a partial script but it did not have enough research and structure. Again more initial structure/detail about how to conduct the task was required...” (Case study, 2003).

“Reflections on these outcomes has led me back to an area of the Lattice that needs to be recognised as very important and that is the Habits of Mind. Skills in these will help all students complete tasks more effectively. I have therefore spent some time researching these habits and developing a more detailed list of the 16 Habits and their elements ready for use with the Learning Lattice. There is no doubt that it is important for these to be...”
taught through the content of our units, and this will help improve student success right through to year 12. It is exciting to see these Habits being identified by the innovation cluster group as being a priority and important for our local schools and students.” (Case study, 2003)

**The Learning lattice across the school 2003**

“I have also developed a learning lattice for a year 10 geography unit on people and environment. This was distributed to staff as part of a curriculum development package for new Year 10 units in 2004. The lattice was to act as a resource to assist staff in considering all outcomes as they are developing their new units. A number of individuals have expressed an interest in discussing elements of the lattice or the process in putting one together since the recent curriculum day. (Case study, 2003).

**Powerful Learning 2003**

**Value of PD (2003)**

“The end of term arrived as I marked time ready to start the new land unit. However, just as we were winding down I was exploring the Glen Waverley web site and searching for more information on the Habits of Mind when I came across the NAVCON website. This is an annual conference run by the navigator schools of Victoria along with the New Zealand Education department and the Australian Science and Maths school (ASMS) of Adelaide. This was to turn mine and my family’s holiday plans on their ear. To cut a long story short I later headed off to Adelaide in the middle of the holidays to attend NAVCON2K3 and have an inspired time!” (Case study, 2003)

“Before I headed off on the long drive (to Adelaide) I did some thinking about the concept of powerful learning. The 4 Reform Papers or Blue prints for education had been released and I was preparing an application for a curriculum leadership position at the school. I completed a mind map of the 4 papers to identify the key elements within them and was interested to note the higher profile of teaching pedagogy within these papers

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20 Blueprint for Government Schools (2003), Department of Education and Training, Victoria
than I had noted in the past. The ideas of powerful teaching and learning were also starting
to come through. This led me to start looking at my own model of powerful learning (figure
20, page 113) as well as identifying student outcomes (figure 21, page 115) that we need to
work towards at all levels of the school. I have included these 2 graphics within this case
study and also intend to table them as part of our discussions in the curriculum review
taskforce.” (2003 Case study)

**NAVCON2K3 2003**

“And so to the NAVCON2K3 conference in Adelaide. The conference was located
at the Australian Science and Maths School (ASMS) at the University and luckily I
have a brother who lives 12 minutes from the campus! ... In my reading over the
last year I had come across a number of important thinkers several of them were
presenting here.

The NAVCON conference is run by the Navigator schools of Victoria together with
ASMS and the New Zealand Education department..... It was very stimulating and
truly exhausting....The keynote speakers included Yoram Harvaz and Adam
Lefstein from Israel, Stephen Heppell from the UK, Carol McGuinness from Ireland
and Tony Cook, Julie Atkin and Ron Lake from Australia. Workshops I attended
included sessions on teaching the Habits of Mind, Powerful Learning, Self
Assessment in the classroom, Infusing Thinking into the classroom, ... All sessions
across the 3 days were interesting and valuable and I came away with both ideas
to consider and practical activities to try.

Some highlights and key statements for me
arising from NAVCON2K3 included:
Carol McGuinness – “Infusion of thinking skills”
and “going meta”
Faith Trent – “Boys learn chaotically” and “we
need to recognise their CV”
Stephen Heppell – “Learning is very complex
and needs a manual”

**“These ideas and comments are a very brief introduction to the many interesting and relevant sessions.....The big question is how they will modify my own classroom processes and contribute to my own evolving pedagogy.” (Case study, 2003)**
Ron Lake – discussed effective schools and teachers
Adam Lefstein - discussed issues of teacher control in student centred classes
Bonnie Ahles – “Ultimate purpose of all assessment is for students to become self assessing”
Yoram Harpaz – “Communities of thinking” – “Fertile questions”
Marilyn Kairouz – “Brain compatible classrooms”
Dianne Peck – “Powerful learning” - “Art and science of teaching”
Graham Oliver – developed Individual Learning Plans on-line at ASMS
Annette Gilbert – “Teachers need to model the Habits of Mind” and the “aim is to develop good habits that are addictive”
Tony Cook – “Innovation needs a clear vision and creative risk takers”
He also discussed productive pedagogies and leadership
“Education is a social process, Education is growth, Education is not a preparation for life, Education is life itself”
Julie Atkin – “How do we assess the total classroom experience?” (Case study, 2003)

Figure 20 Principles of Powerful Teaching and Learning 2003
"In figure 20 .... I have identified what I believe to be the key principles for powerful teaching and learning. Powerful teaching is teaching that makes a difference, that engages students and leads to effective learning outcomes.....It is about teaching across the wider range of outcomes I identified in the learning lattice. It is about understanding the “art and science of teaching” as Dianne Peck would put it. It is therefore about understanding and using the thinking processes in the classroom. Assessment in this context must be authentic and rich with achievement being possible through a range of strategies. Criteria must be clearly stated and evaluation of performance should be initially through self assessment. Students are encouraged to take more responsibility for their own learning, work at their own pace whenever possible and monitor it through their individual learning plans. The positive Habits of Mind identified by Art Costa are taught and are critical to an understanding of this learning process. The teacher is a facilitator of learning and uses technology extensively in and out of the classroom. Literacy is a key to success and is taught and monitored across the curriculum. The school and teacher vision of education is critical to this process of learning at the school. The other important factor in powerful learning is the classroom environment. A stimulating, friendly and active classroom is an important element in the learning process.” (Case study, 2003)

This more theoretical view of powerful teaching and learning reflects many of the key elements of the new paradigm and shows how the key ideas of the transgression are clearly influencing my thinking, my practice and over time my curriculum theorising. It was produced prior to the release of the Principles of Learning and Teaching (POLT) here in Victoria.

**Visions and Improving student outcomes 2003**

“Another diagram I developed in the lead-up to my leading teacher interview and about the time of the blueprints was the student outcomes at GGSC (see figure 21).
“With figure 21, I combined a number of my areas of work to identify the key outcomes that I see as being important for students at Green Gully. I have included the key

Looking back on figure 21, I can see that I was attempting to pull together a vision of 21st century schooling which was reflective of my emerging theory. Many of the skills needed for work in the 21st century are highlighted. The lattice is seen within the diagram as an important component and platform for this vision. It represented my emerging model for learning and curriculum design.

Figure 21 Student outcomes

“With figure 21, I combined a number of my areas of work to identify the key outcomes that I see as being important for students at Green Gully. I have included the key
elements/values identified within our vision and the accompanying values statement. I have also brought in some of the key elements found within our review aims. Alongside this I have listed the Meyer Key competencies and other social skills. The National Goals for education are an important background for our outcomes. The other significant elements that I have included are those that are specifically targeted within the learning lattice. These include content outcomes from within the VCE, VCAL or CSF documents, eLearning skills, Literacy and general learning and metacognitive processes and skills.” (Case study, 2003)

Questions regarding practice and curriculum design (2003)

“A set of questions that I need to consider as part of improving my practice and attempt to make it more relevant are those I developed as part of my review task force leadership role. Some of these are very general whereas others are more appropriate for consideration in the context of my own classroom. I also developed a starting bank of solutions, ideas resources and writers to consider in answering these questions.” See figure 22 (Case study, 2003)
<table>
<thead>
<tr>
<th>QUESTION</th>
<th>SOLUTION/IDEA/RESOURCE/WRITER</th>
</tr>
</thead>
</table>
| What needs to be included in the curriculum?                            | Essential Learnings – Blueprint – VCE? CSF2  
Social Ecology – Maureen O’Rourke  
National Goals                                                                                     |
| What are our principles of teaching and learning?                       | Blueprint  
Powerful learning – Glen Waverley SC  
GGSC school practice  
Develop school pedagogy statement                                                                 |
| What thinking skills?                                                   | Metacognition – Carol McGuinness  
Habits of Mind – Art Costa  
Ecology of Learning – Lane Clark  
Productive Pedagogies(New Basics) Queensland                                                                 |
| What IT skills?                                                         | GGSC IT skills checklist  
21st Century skills – Ralph Taberer  
Learning Technologist – Julie Atkin                                                                 |
| What life skills?                                                       | Meyer Key competencies                                                                                                                                       |
| How much/what content?                                                  | Essential Learnings – Blueprint  
CSF2 and VCE study designs                                                                                                                                    |
| How do we/students learn best?                                          | Multiple Intelligence – Gardner  
ACTS – Carol McGuinness                                                                                                                                      |
| What brain theory do we need to know?                                   | Ecology of Learning – Lane Clark  
Use your mind – Tony Buzan                                                                                                                                 |
| What fertile questions should we ask?                                   | Community of thinking – Yoram Harpaz  
Powerful Learning – Di Peck-GlenWaverley SC                                                                                                                   |
| What community study should we include?                                 | Local environment – physical, social, vocational                                                                                                               |
| How/Where should learning take place?                                   | Integration/Subject or process learning                                                                                                                     |
| Do we need an orientation program covering thinking skills?             | Integrate or separate unit?  
Learning Lattice – MD?                                                                                                                                         |
| What can we leave out of the curriculum to include process learning?    | Integrate process/thinking skills  
CSF balance?                                                                                                                                                    |
| What is powerful Learning and thinking?                                 | Di Peck – Glen Waverley SC                                                                                                                                     |
| What structure do we need for a thinking curriculum? How can we make it systematic? P – 12?                                                                  | Bank of skills to be developed  
Thinking Curriculum - systematic curriculum integrated alongside content curriculum                                                                          |
| How do we report these skills?                                         | Blueprints supporting documents  
Rubrics  
(Digital)Portfolios  
Individual Learning Plans  
Research/visit other schools                                                                                                                                  |
| How do we assess these skills?                                         |                                                                                                                                                            |
| How can we introduce more authentic assessment?                         |                                                                                                                                                            |
| How do we improve literacy across the curriculum?                      | Literacy assessment across subjects formal/informal  
Learning Lattice                                                                                                                                               |
| How do we inculcate/teach our values?                                   | GGSC Vision                                                                                                                                                    |
| How we identified our desirable outcomes                                | My statement  
School vision                                                                                                                                                                                                    |
| How do I answer these questions in my own classroom? For GGSC?           | Learning Lattice  
Research and Curriculum grid development” (Case study, 2003)                                                                                                 |

Figure 22 Curriculum Questions 2003
Figure 22 represents a set of questions, developed at the end of 2003, that reflects the many outside voices and the range of major ideas impacting upon my work in and out of the classroom. As I now stepped up to once again lead in the curriculum area, these questions were important inputs to my planning and thinking. The questions and responses to them also contributed significantly to my own developing curriculum theory. These were important voices and inputs into the transgression that was occurring at my school and elsewhere. They reflect the complexity of the transgression with its many interrelated and interacting elements. Teachers everywhere were going to have increased demands as a consequence of these and many other voices impacting upon schools and education departments. How we were to cope with these demands and questions makes up much of the following narrative.

In 2003 I had developed my initial lattice and had attended several informative conferences, these critical events would impact significantly upon my thinking in later years. 2004 would also be a time to start to look at where the school was going, and to begin formally constructing and discussing a vision for schooling at Green Gully.
**Case Study- 2004**

In 2004 my narrative began with me looking at the value of case writing as a learning experience and then exploring more aspects of curriculum design and pedagogy. Differentiation as a method of personalising the curriculum was investigated. The use of the learning lattice was refined and extended across the school. I examined the underlying values that underpin our curriculum, and the vision for the school was a priority. The arrival of POLT (Principles of learning and Teaching) in Victorian schools was an important event. Each of these elements contributed to a growing exploration of my 3 research goals.

**Value of case writing**

“Case writing in 2003 had been such a powerful learning experience that I wanted to continue the process in 2004. I also felt that it would provide me with data to assist in my research process should that ever get off the ground formally!” (Case study, 2004)

“My goals for case writing in 2004 included:
- to further develop my understanding of the teaching and learning process
- to further develop my own teaching pedagogy
- to trial the learning lattice in my own classroom............” (Case study, 2004)

During this time I had a focus on improving pedagogy, investigating differentiation and in particular improving outcomes for all students across the school. I was exploring the concept of Individual Learning Plans (ILPs) at the junior level and also trialling and evaluating my learning lattice to improve it.

**Learning Lattice use 2004**

"I have developed a Learning Lattice for the first unit of the year on the Family and I. This was presented to the class and has been stuck into their books for them to colour in the activities and various parts of the lattice as they are covered. One modification I have incorporated this year is to update Blooms’ Taxonomy according to Anderson. In this change the names of six major categories were changed from noun to verb forms. The reasoning behind this is that the taxonomy reflects different forms of thinking and thinking is an active process. Alongside this I also believe that it is easier for students to understand this format. (Case study, 2004)
Differentiation in the classroom 2004

“Catering for individual differences is a big challenge in any classroom. In my reading this year I have come across the work of Carol Ann Tomlinson on differentiated curriculum. She has developed a set of “Principles for fostering Equity and Excellence in academically diverse learners”. I have listed these below and hope to use them during the year.

- “Good curriculum comes first
- When in doubt teach up
- All tasks should respect the learner
- Grade to reflect growth
- Become an assessment junky
- Use flexible groupings”.

Tomlinson (2000)

To cater for individual differences I need to start developing more assessment rubrics. More of my general handouts such as the Family project also need to be modified to take into account the very wide range of abilities across this group. With the Family projects handout and instructions I have simplified the instructions, modifying the language to make it easier to understand, and reducing the expectations of the student in terms of quantity and quality of work.” (Case study, 2004)

Interactions affecting learning 2004

“Some negative interactions within the group have now set me to wondering about the variety of factors that can influence and impact on the effectiveness of learning in the classroom. My partner Eileen has recently started a gestalt therapy course and looking over her shoulder at one of her readings I noted a figure showing the interrelated component tasks of gestalt psychotherapy and counselling, and it immediately opened up the idea of an alternative way of showing the learning processes that occur in the classroom, and that I have previously discussed in my learning lattice. These processes interact actively upon each other as the following diagram shows. They are the processes that can be planned for, assessed and then evaluated in your curriculum.
In developing my own Living Educational Theory I need to be questioning my values. To question them I need to first identify the values we hold at the school. In this next section of my case study I explored our underpinning values as identified by staff in a number of different sessions. This was an important on-going process for staff as it would eventually lead to formal mission and value statements.

Figure 23 Learning Lattice Outcomes and factors

Figure 23 graphically shows the interconnected elements of the lattice. It is a diagram representing the complexity and holistic characteristics of the lattice. It also illustrates a dynamism inherent within the lattice and a certain consequent unpredictability associated with this type of construction. To me it is much more than a list of elements but a visual representation of the complex and dynamic nature of curriculum. The factors surrounding the core gestalt interact and contribute to the final curriculum that develops. They represent

However, there are many factors affecting the learning process that are identified in this lattice and I have included many of them in the next diagram. Some limited grouping is shown below. (Case study, 2004)
factors that will influence each curriculum developed within an individual classroom, and also how each individual experienced curriculum will consequently be different for each child or teacher. It also represents the complex array of changes and factors that teachers were faced with. The totality of these, along with a number of others represents transgressional change.

**Values and Creating high expectations 2004**

“At the beginning of the year we started looking at creating high expectations in the school and at this staff meeting we looked at how students characterise both high and low expectations. Students from years 7 to 12 were involved in the workshop and a number of important characteristics/values emerged from the discussions. I have included these below:

- Punctuality to class and with work
- Acknowledgement of effort and successes
- Challenge for all students
- Organization of the work
- Clear expectations of students
- Regular, prompt feedback on work
- Relevance of material
- A caring attitude
- Respect for staff and students
- Appropriate levels of work”

(Case study, 2004)

The figure below (24) compares the relationship between the expectations of students and the values identified by staff in the school mission statement. Bringing these into alignment would be a challenge the school needed to address as it furthered its work on the school vision. Exploring the values at the school is a relevant issue as these underlying values represent an important driver for change and improvement.

Figure 24 Venn diagram showing Student Expectations and School Values
GREEN GULLY S.C. IS DEDICATED TO PROVIDING AN ENVIRONMENT THAT VALUES EXCELLENCE, IS RESPECTFUL OF ALL MEMBERS OF THE COMMUNITY AND WHICH INSPIRES EACH INDIVIDUAL TO ACHIEVE THEIR POTENTIAL, AND TO TAKE THEIR PLACE WITH CONFIDENCE IN A CHANGING SOCIETY.

OUR VALUES

LEADERSHIP TAKING RESPONSIBILITY COMMITMENT TO VISION

COMMITMENT TO OTHERS RESPECT TOLERANCE

FAIRNESS INTEGRITY HONESTY

OPENNESS PRIDE IN ACHIEVEMENTS ACADEMIC EXCELLENCE

CRITICAL THINKING CREATIVITY RISK TAKING

OUR PRINCIPLES

1. The core purpose of schooling at GGSC is to prepare young people to be active citizens in a society that we recognise will be different to that of today. An emphasis will be on the skills needed to thrive in the future.
2. Mutual respect and concern centres the relationships at the school. These relationships provide a foundation for an environment that recognises the importance of honesty and integrity in the ongoing growth of our students.
3. The partnership between parents and teachers enhances student outcomes. We believe it is important to recognise the shared responsibility and obligation for schooling at GGSC.
4. Every student is capable of learning. Each student is expected to achieve to his or her potential (high expectations).
5. Every student has the right to be challenged within a supportive environment.
6. Schooling at GGSC is purposeful, relevant, based on authentic learnings and is supported by a curriculum that recognises individual differences.
7. We recognise the professionalism of educators and expect continuous growth in their skills, knowledge, and professional attributes. GGSC should be regarded as a community of lifelong learners.
8. GGSC values the local community and industry and recognises the importance of creating partnerships to enhance student learning.
9. We believe building community capacity is an extension of our work with students, parents and the wider community.
10. Every opportunity will be taken to integrate the use of technology into our curriculum.
11. Students at GGSC learn within social and cultural contexts, independently and through interaction with others and this needs to be considered in the design of curriculum.
12. Schooling at GGSC is based on a process involving on-going reflection and improvement.
In 2004 we started to seriously develop our vision for the school. Figure 25 represents my attempt to summarise our efforts at this process.

“...Guiding the policy is the school vision. Below it are the values that were identified by staff and others that I have extracted from the vision statement. The third section of the diagram has a list of principles for the school community. The principles developed by the Principal and a parent have been extended by my reference to the principles of teaching and learning that I developed in 2003 and also to the principles underlying teaching and learning developed in Queensland as part of the Productive Pedagogies process.” (Case study, 2004).

In constructing this diagram I was attempting to pull together a number of disparate elements. I was addressing the complexity of the situation for at different times different groups had developed the vision statement, values and principles. I was also integrating some ideas from reading, in this case the productive pedagogies of Queensland along with my own principles of teaching and learning as summarised earlier. It was a draft vision of teaching and learning at Green Gully for us to discuss and reflected key elements of my developing curriculum theory.

**Case study reflections 2004**

"Figure 26 is a diagram reflecting the value of Case Writing over the last 2 years. In particular this year and the sessions at the end of 2003 saw me improve my understanding of key classroom issues." (Case study, 2004). However, figure 26 was also important for a number of other reasons. Very importantly case writing had improved my classroom practice but it had also assisted in many other aspects of my work as both a curriculum leader and a reflective practitioner. It had also led to my commitment to complete a research thesis using this form of data as a basis for a narrative study. It summarised the many benefits of case writing.
Assessment Developments 2004

“Curriculum committee last night endorsed the recommendations on assessment for years 7 and 8 in 2005. Significant changes include the opportunity to develop assessment tasks and provide grades for students. This will bring assessment into line with the practices occurring throughout the rest of the school. There will be at least 1 assessment task per semester with the opportunity to develop more than this. Assessment tasks will be developed and graded using criteria although how consistent these are across KLAs and year levels is to be decided at the faculty level. There is to be a range of tasks from projects, assignments to tests. The grades will also be reported to parents at the end of each semester. These changes were clearly supported by the parents on the education/curriculum
committee and the degree of support and consensus among staff is also very high, and really quite a significant change to the positions taken by staff back in the 1980s, when I led the discussion on the introduction of descriptive ungraded assessment.” (Case study, 2004).

**Assessment and the Principles of Learning and Teaching (POLT)**

“I also spent some time examining the draft Principles of Learning and Teaching (POLT) that have been put together by Deakin University for the Department of Education and Training. I referred to these during our assessment discussions yesterday as they are clearly aligned with our school thinking. The key recommendations are included below:

5. Assessment practices are an integral part of teaching and learning. Assessment contributes to planning at a number of levels. Monitoring of student learning is continuous and encompasses a variety of aspects of understanding and practice. Assessment criteria are explicit and feedback is designed to support students’ further learning and encourage them to monitor and take responsibility for their own learning.

5.1 Assessment practices reflect the full range of learning program objectives.

5.2 The teacher ensures that students receive frequent constructive feedback that supports further learning.

5.3 The teacher ensures assessment criteria are made explicit.

5.4 Assessment practices include self and peer assessment.

5.5 The teacher uses evidence from assessment to inform the learning program.” (Excerpts from the draft POLT handbook being developed by Deakin, 2004), (Case study, 2004).
**The Principles of Learning and Teaching 2004**

“This handbook will become a very influential input into the design of curriculum under the new Essential Learning banner. It was interesting to examine the principles and identify the 15 Rs of education that have become guiding concepts for teaching and learning. Yes there are a few other letters that are important!” (Case study, 2004). See figure 27. My name appeared on the graphic as this summary was my work identifying some of the key ideas in POLT.

![Diagram of PRINCIPLES OF LEARNING AND TEACHING](image)

**Figure 27 POLT and the Many Rs**

2004 saw me reflecting on the value of the process of case writing which led eventually to the production of this thesis. I was exploring and realising the value of insider practitioner research through my writing. As a school community we formulated an initial vision which would guide much of our work over the next few years. The school community including all staff and some parents was involved in its construction. The release of POLT was a critical event as we started to re-assess our pedagogy and assessment practices. Major changes to both of these were to follow. Differentiation of the curriculum was entering our vocabulary and would start to impact on our pedagogical practices and curriculum processes, as we realised the need to personalise and differentiate our curriculum, to better cater for a wider range of students. I was also exploring the flexibility of the lattice as a model for curriculum development, sharing it and expanding its use.
Case Study - 2005  “The transgression is speeding up”

2005 was to be a very busy year with many external voices impacting upon our curriculum development work here at Green Gully. The voice of Art Costa and his work on the habits of mind was very influential across our cluster of local schools. iNet21 and the voice of David Hargreaves was an overseas voice that was to impact clearly upon our vision building and work supported by the Leading Schools Funding. The release of the Victorian Essential Learning Standards (VELS) had a significant impact. Meanwhile discussions with other local, secondary schools had an impact on our directions. There was a very wide range of voices impacting upon us across the widest range of scales. Voices were being heard from within the school, from local primary and secondary schools, from across Victoria and also overseas, as we progressed through the transgression. Each voice impacted in some way upon our developing vision, pedagogy and curriculum and my own developing personal theory.

Introduction of VELS

“The curriculum committee, review sub-committee and leading teachers have all met in the first 2 weeks, and it has been interesting trying to pull together the work of all three groups and get an overall direction for our work. The new Victorian Essential Learning Standards (VELS), the Blueprint and the Principles of Learning and Teaching (POLT) are all interconnected and support each other but need to be absorbed before we can understand the full implications for staff. Alongside this is our own school derived data, our charter, our vision and values, a futures perspective, the leading schools developments regarding district provision and our cluster focus on the Habits of Mind. My own future teaching story that I put out for staff to read was an attempt to concretize a possible vision and initiate discussion amongst staff. Our acting principal suggested at the first staff meeting that this should be a year of consolidation, instead we face a potential curriculum (paradigm) shift of potentially huge dimensions. The journey will be very interesting!” (Case study, 2005)

21 iNet – International Network for Educational Transformation – aglobal network for sharing ideas and good practice to help transform schools
Curriculum Design and assessment in 2005

“This year in IS at year 7 I am changing the order of my units. This is because I intend to give more responsibility to students progressively over the year. This progressive sharing of responsibility will allow them to develop more skills in completing a range of tasks and also in working independently and interdependently. They will also adjust to and develop greater confidence in using criteria and rubrics for assessment....By the last term they will be better prepared to work in a very independent fashion on a range of negotiated and selected tasks both in small groups and individually. Feedback on their use of the rubrics will be very important as we start to implement our new graded assessment policy in years 7 and 8. This semester the KLA will also need to sit down and make some decisions on our assessment tasks, appropriate criteria and whether we will be using rubrics and how common the assessment tasks need to be. ...The curriculum coordinator is currently working on guidelines for assessment in years 7 and 8 and basing much of his paper on draft assessment guidelines in the Blueprint and also what has come out with the unpacking POLT paper of December 2004.” (Case study, 2005)

Implementation of VELS

“The next staff meeting .... the acting principal is planning to extend the knowledge base of staff concerning VELS material........At our next Key Learning Area meetings we are also expecting to start the auditing process that is involved in this year of validation for the VELS document. As yet the detail of the standards is unavailable and yet implementation is expected for 2006! This is an extraordinarily short time frame given that curriculum decisions affecting handbooks and course structure for our secondary college (like many others we would imagine!) have to be made by the end of term two! The auditing process will be very interesting as there is considerable variation between classes ..... The Interdisciplinary strand contains Communication, use of ICT and Thinking domains and will be difficult to audit but that lends itself to my learning lattice structure very easily. I am looking forward to the release of the standards in this area with great interest as it will again provide structure and leadership for what I believe to be very important elements of the powerful learning curriculum.” (Case study, 2005)

In 2005 I was responsible for the introduction of Individual Learning Plans (ILPs). Figure 28 provides a detailed summary of the pressures operating in our local and
Victorian context as I attempted to plan for the introduction of ILPs. The figure reflects the great complexity of any curriculum design today. Two key drivers, shown as large arrows in figure 28, that were impacting upon us were VELS and POLT. VELS would impact upon us very directly as we were expected to construct our curriculum to allow us to reach these standards. Curriculum needed to be designed that taught, assessed and then reported these standards. A major factor here with VELS was its structure. It was very different to earlier models and structures. There were three key strands to VELS that needed to be taught, assessed and reported upon. Only one of these strands was discipline based. The other 2 strands covering physical, personal and social learning and the other interdisciplinary learning strand included many domains of learning that had not had to be formally taught, assessed and reported before. These new domains included personal and interpersonal learning, thinking, ICT and communication. This created new demands and the need for new models of curriculum to support the planning and delivery of a more holistic curriculum. A curriculum that integrated these domains into the teaching of the disciplines was required.
“The context for the development of my ILPs is shown in figure 28. Although we do have a local context in the “Green Gully” community much of the rest of the context is defined by the education department. Our own school vision gives us values and a view of the type of students we want to develop. Outside factors such as skilling students for the 21st century are major influences alongside POLT and VELS. A major driving force on our 7-10 curriculum is preparing our students for the VCE which has very specific curricula that teachers need to implement to allow our students access to success.” (Case study, 2005).

What we are seeing here in 2005 was the speeding up of the transgression, as it was being driven by policies developed at the state level, this reflected international trends, within the new emerging paradigm. Figure 29 summarises key elements of the paradigm and highlights important voices and the huge number of ideas that were influencing us in our local context. Figures 28 and 29 both highlight for me the great complexity of the changes and demands we were seeing and being asked to respond to. The learning and curriculum model that we were to use hence had to be able to manage this increased complexity. The learning lattice was my, and in time, our school response. It was an holistic model that allowed us to respond to and manage many of the valuable ideas encountered through the transgression. Other tools and processes as illustrated though my visuals, such as

“Having just completed some reading and activities on Methodology from the book by Clough and Nutbrown (2002 ), I now see more voices are relevant than I listed above in my context diagram. There are regional pressures to look at district provision of curriculum operating so that we have a joint 4 schools meeting next week. We also have a very strong student voice coming through in the student opinion data that was raised at the last staff meeting. There are also the strong voices coming from the literature that are influencing the perceptions, visions and plans of myself and some other members of staff. Voices such as those of David Hargreaves and his work on personalizing the curriculum along with Art Costa and those habits of Intelligent behaviour (mind) as I keep saying to my students.” (Case study, 2005)
our vision and curriculum flow charts supported the adoption of other ideas and helped embed them and make them both achievable and in time sustainable.

Figure 29 Voices and Elements of the Later Paradigm
District Provision, Personalisation and the Leading Schools Fund (LSF)

“On Tuesday the 22nd of February we had a joint seminar with the 4 secondary schools in the local district. This is part of the process for developing a Leading Schools application and also meeting the regions desire for us to examine the district provision of education around this area. The entire staff, about 250 staff from the 4 schools, attended the 2 hour seminar facilitated by Howard Kelly and featuring presentations from Brian Caldwell on Transforming schools and Jack Keating on the local school/district data......Jack Keating re-infoced our understanding of the district as being a significantly disadvantaged one with low numbers of professionals in the community, lower rates of applications to university and above average youth unemployment, especially of girls....

I found the paper by Brian Caldwell very exciting ... the 7 themes he identified for discussion were very valuable and he had also identified the work of Cheng on the new teaching paradigm that is relevant to my research.” (Case study, 2005)

Personalisation and Individual Learning Plans (ILPs)

March 24th “I am now planning to present some ideas to ... the whole staff as part of a curriculum day looking at the implementation of VELS and POLT and centred around discussions of what learning looks like at GGSC today and

Transforming Schools Themes

- Personalization
- Specialization
- Networks and networking
- Scenarios
- Social capital
- Public private partnerships
- Federations

“I also participated in my first on-line conference last week and thoroughly enjoyed the experience. As an example of the possibility for networking I found it very valuable. To see how ideas and innovations can move from England to Chile to Australia in a few minutes is remarkable. The whole concept of networking I now feel to be very important and to have potential for transforming education at a remarkable pace.....According to David Hargreaves: ‘The education service is moving from a world of autonomous teachers and schools working in isolation (competitive atomism) to one where individuals and institutions work together in the interests of the common good (collaborative holism).” (Case study, 2005)
what it may look like in the future. This is part of the process of building up a more concrete picture of our vision. ..... I feel more and more strongly that we need to have a picture to aim towards that is flexible to meet changing circumstances, but at the same time guides our decision making on building, classroom design, organizational structures, curriculum, classroom processes, teaching, learning, ILPs, PD, assessment/reporting etc. I see my role as helping in the design of this vision. Hedley Beare’s “The Future of Schooling” (2001) is a valuable resource in this area. This of course also helps in my research as I look at the changing paradigm in education and the transformation that is occurring.” (Case study, 2005)

**Networking 2005**

“I am now participating actively in several networks with iNET, the Habits of Mind network set up by James Anderson, .... as well as school based networks such as leading teachers, school curriculum leaders, KLA teams and sub-school teams. These networks get together as required. There are also formal groups that meet such as curriculum committee, review sub-committees and the leading teacher group. Through these networks I initiate discussion of ideas and mention or highlight innovations and pathways for change. In the context of the local district the school staff represents another network that operates as a whole to share ideas and develop innovations. It seems to me that one of the pathways to change is going to be through these networks. This idea appears to be at the heart of the transformation movement set up by the specialist schools trust in England and operating through iNet here in Australia. There is an entire hierarchy of networks operating through schools from the very small scale, local classroom right the way through to potential international networks of ‘thought leaders’ as David Hargreaves puts it.” (Case study, 2005)

**Inet, networks and Learning Managers**

“As I was facilitating part of the conference ... I started discussions on developing visions and learning managers, student based research on learning and learning styles. This was very powerful in terms of me refining my ideas to allow me to present and then discuss them. I also made use of the new VELS documents in
discussions that allowed me to become more familiar with their components and at the same time make information available more widely.” (Case study, 2005)

**Tipping Point conference 2005**

“I went to the Tipping Point conference of iNet Australia in the first week of the April holidays and found it at times to be inspirational, especially during the discussions of Derek Wise and David Hargreaves.... it was the sessions with more direct applicability for the school and the classroom that were particularly rewarding. The conference was called the tipping point as it was aimed at moving schools from a 19th century imaginary to a 21st century imaginary.” (Case study, 2005)

Figure 30 and the previous extracts reflect the complexity of the evolving vision and my developing understanding of the processes and importance of vision construction. I was listening to many voices, from both within the local context and the greater wider context, and using them to construct the vision. These were the voices driving our transgression and contributing to the new paradigm developing at the school. I was building the vision within a localised, personalised and globalised context. By the term localised I was referring to the immediate and local spatial and temporal context. As the school was considering amalgamation with others, extensive discussions were occurring with regard to this. I have also used the term individualised and personalised interchangeably and in the context of developing a curriculum that reflects these characteristics. Globalised is used in the sense of being part of a global transgression, reacting and responding to positive changes and innovations around the world in an interconnected global context. One of the values of the research I have conducted has been that although I have been working within a localised context the changes I have described have been occurring around the world. Hence the curriculum responses, the curriculum theory generated and the implementation strategies may have potential value in other settings.

**Building the Vision**

“This presentation was to all staff and was a keynote within our curriculum day on VELS and its implementation. Our theme was around how learning is occurring presently at the school and what we would like it to become. ... In the keynote I raised questions, challenges
and opportunities for the school to consider.....(As summarised in figure 30). I pulled together trends at the global, local and individual levels as a follow on from the work of Brian Caldwell at the joint school seminar. Alongside this I also discussed the work of David Hargreaves and the specialist schools Trust in England. I mentioned the accelerated learning cycle that Cramlington Community High School has introduced and also summarized some of the main ideas that Hedley Beare has in his book on future schooling.” (Case study, 2005)

Figure 30 Building the Vision 2005

**Habits, assessment and the curriculum**

July 17, 2005. “On Thursday I went to a session that focused on assessment of the habits which again was very valuable and also practical....I also showed the lattice to

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**The Importance of reflection**

“I am becoming more and more convinced of the importance of this reflective stage in the learning process. It is very important as part of my action learning cycle but I see it as very important as part of the PD process, in the development of the school vision, in producing a new curriculum under the influence of VELS and in each learning activity that I complete with my students. Indeed it seems to add greater rigor and validity to all aspects of school program development.” (Case study, 2005)
Art Costa when we were discussing my research as it included the HoM within the lattice. He liked the way I had integrated many elements within the lattice and took a copy. The day focused on assessment and looked at practical examples of amongst other strategies portfolios, rubrics, exhibitions and checklists. He talked about shifting the balance for assessment responsibility onto students and the idea of triangulation with the 3 corners being mastery of understanding, growth over time and applied understanding.” (Case study, 2005)

**Differentiation and Harvard 2005**

“This week I have been undertaking my online PD module with WIDE which operates through Harvard University and developed from their work on project Zero. This is very exciting as I am learning about differentiation and doing so in a very different learning environment. This week I had to identify my goals, provide some background, show my current understanding, read some articles by Carol Ann Tomlinson and then provide an outline of a project. On top of this we are expected to participate in online discussion on each of these aspects..... I am in a group of about 10 students from all over the US, Romania, Singapore and Australia.” (Case study, 2005).

**Personalising the curriculum and the Leading Schools Fund**

“The other significant event on Friday was a meeting that the acting Principal asked me to attend regarding the leading schools fund. We are working closely with 3 local secondary colleges to develop our second round proposal..... The acting Principal suggested to the group that we were really looking at personalizing learning as the core idea and should use the model developed by David Hargreaves with its 9 gateways of Learning to learn, Assessment for learning, Curriculum, New technologies, Mentoring, Student voice, School organisation and design, Workforce policy and Advice and Guidance). I had done some
Figure 31 represents a summary of 3 key elements of personalising learning I have described with ILPs, Local Area Network (LAN) based differentiated curriculum and learning managers as those key elements. This makes up another aspect of my personal, living curriculum theory. In the figure important characteristics of the 3 elements are identified. POLT is also shown as having an influence.

Thinking in this area and went through what I could see as the three key elements of a personalising approach for our school/cluster.

Figure 31 The Personalisation Triangle

It was exciting to see the acceptance around the table of the many ideas I had pulled together which incorporated aspects of David Hargreaves 9 gateways.......We also then went through a valuable activity and compared a classroom today with what one might look like in the future. I again contributed to that by highlighting many of the features one might see in a differentiated
classroom within which there is differentiation of content, process and product according to a student’s readiness, interests and learning profile through a range of instructional management strategies such as Multiple Intelligences, Jigsaws, varying organizers, literature circles, tiered lessons, tiered products, interest groups etc. ..... It was a very good week in terms of the development of ideas, exposure to lots of good thinking, networking face to face and online”. (Case study, 2005)

During 2005 my own practice based theory was starting to emerge. The questions that I was asking myself then were to lead to central ideas within what I now call my “living curriculum theory”. Many elements make up this theory hence the range of extracts included from my much longer cases.

What is at the Heart of the Curriculum?

“What is at the heart or core of my curriculum? Is it content, concepts, skills, processes or learning to learn? Which of these are more important? Is there a hierarchy amongst these? What are my through strands in terms of the TFU framework? Are they the skills that I infuse throughout the whole years course or are they the content/questions that I focus upon for each unit? For me the habits of mind, ICT skills, communication, thinking, learning skills are those that are infused across my units. The content is different for each unit but the concepts and skills develop and intertwine throughout the year.”(Case study, 2005)

The extract here in the metacognitive voice contains some important questions about what is at the heart of my curriculum practice. It explores the core of my curriculum theorising. My emerging living curriculum theory has values, processes and skills at the heart within an holistic, integrating framework.

Leading Schools Fund proposal 2005

August 14th. “I have been participating with the Principal and curriculum coordinator in developing the ideas for our leading school proposal. ..... an action plan for this process and also some diagrams of the school in the future. One of these 2010 diagrams I then adopted to make use of the 9 gateways developed by David Hargreaves. See figure 32.” (Case study, 2005)
Figure 32 showed a vision of the school in 2010 identifying key characteristics to be seen through each gateway. It has the 9 separate Hargreaves gateways with 2005 at the centre and 2010 around the outside. Appropriate and planned changes within each gateway have been identified and discussed in each segment of the diagram, in an approximate order, that they may be planned. It is a summary vision of what may occur over time. Visuals such as these were an important component for the understanding and implementation of curriculum change during the transgression. They guided and assisted us in our planning and implementation of the complexities of the curriculum changes we were planning and imagining. They gave us a picture of what the school could look like in the future.
Alongside the work building the vision I was also completing the unit on differentiation of the curriculum and this was providing powerful insights into curriculum design.

**Reflection on Differentiation course**

“16th August ....Differentiation is a key to the personalisation of education. Preparing students for the 21st century requires them to be flexible, adaptable and ongoing learners. Differentiation can provide an avenue for this to occur. Differentiation of presentation, process and product can allow all students to achieve successfully. Differentiation is about preparing learning pathways that open doors for all learners. Effective differentiation strategies are those that are appropriate for student learning styles, that take advantage of and develop student multiple intelligences, are those that are appropriate to student readiness and build upon past learning. The strategies themselves are many and varied including tiering, cubing, individual research and group activities that take advantage of technology and engage students ......

A differentiated classroom is one where every student is challenged to engage themselves and stretch themselves as learners. I manage assessment through the provision of rubrics that students use for self assessment, peer assessment and teacher assessment. The rubric acts to instruct and provide guidance in the management of the learning task. I manage my differentiated classroom through the detailed planning of units .......I manage my differentiated classroom through the use of entry activities targeting different learning styles and interests. I structure my units to include diverse products appropriate to the needs and interests of my group .......I develop strategies and resources to monitor the goals of the
unit such as a habits of mind research booklet I have given to my students with their copy of the assignment. I also monitor student progress and understanding through a mid assignment performance to share learning within and across the group.

The unit has given me another valuable perspective upon what should be central to my holistic student centred approach to teaching and learning.” (Case study, 2005)

**How Teaching For Understanding is similar or different to my own practice**

“I first became aware of the TFU framework (see figure 33) when I undertook the Differentiated learning WIDE course 7 weeks ago. I have found it to be a powerful tool and an ideal one for comparing with my previous planning framework. For the last 2 years I have used a planning tool I developed called a learning lattice as a framework for planning, evaluating and assessing my curriculum at all levels from 7 to 12. This is an holistic tool that integrates many key skills, behaviours, processes, content areas and concepts around a key topic. It has a focus on products produced through the activities that are central to the unit.

When comparing the TFU framework with my own planning lattice I saw it emphasised understanding goals to a greater extent than I had been doing. It also identified key throughlines related to the goals that are central to the learning. I like the idea of a generative topic that is a key component of TFU and relate this back to the idea of rich tasks and fertile questions that other authors have discussed and that I have been starting to develop. (Figure 33 is a summary of this model)
Another key element of the TFU structure is the presentation as a form of demonstrating understanding. This reflected where I have been heading through the use of a variety of end products with differing presentation formats. I have also been developing my use of Multiple Intelligences within the classroom setting for what I term the 3 Ps of Presentation, Process and Product. In this case the presentation refers to the presentation to the class of material through different Mls, Learning Styles etc rather than at the end of the unit as the Product. This compares favourably to the use of entrance points or initiating activities within the TFU structure. Ongoing assessment is a key component of my
The developing Lattice 2005

“My work on differentiation has led to me developing a unit using the TFU framework (see figure 33 and appendix B) and also to reflect upon the shape of my learning lattice. As I looked to develop an exemplar unit for discussion at our VELS implementation meeting I modified my lattice to incorporate more cells related directly to the VELS domains. The fossils mini unit was therefore developed incorporating more cells. I also developed a more standard form of lattice using the 8 cells around the central topic structure. I collected statements from the standards and included them within a draft unit called ancient civilizations. These 2 units along with the basic lattices with either 8 cells or 12 cells were tabled for the committee and will be supplied to staff for trial, use, modification, feedback and comments. We are looking to eventually develop a format that we will use across the school with all subjects. The forthcoming curriculum day will see an opportunity to develop and modify units alongside an audit of the non-discipline elements in our curriculum.” (Case study, 2005)

Identify school practices that make TFU challenging

Formal school/state curriculum requirements that are too rigid can act as a blocker to the introduction of TFU. Formal requirements in the senior school are a significant blocker that may be less powerful in the junior or middle school. Units/topics/lessons that have always been done "this way" can also act as a blocker. There can be an inherent inertia that can get in the way.

Rigid assessment strategies or requirements can also hinder the use of a TFU structure. This can be school policies on assessment tasks that have to be used. Formal state-wide guidelines on the type of assessment can be a blocker. There is also the inevitable role played by examinations that are in a certain format that be a challenge for implementing TFU. The fluidity of curriculum change can also be an issue. In Victoria the new Victorian Essential Learning Standards (VELS) can act as a blocker or challenge. Innovations that keep making
extra requirements can be exhausting for staff. (They may also be seen as an opportunity!) Time and energy for staff professional development can also be a huge impediment to change such as this. ...Past perspectives that identify learning and teaching as fairly static events, occurring in classrooms full of students sitting up straight in rows, can also be a blocker but one hopefully disappearing faster than a dodo!“Innovation is all well and good in the junior school but in the senior school we have to be serious and prepare the kids for exams”. (2005, Case study)

Garden Metaphor 2005
“In the last session one of the students talked about the differentiated instruction (DI) classroom as a garden and I really liked that metaphor. As the teacher in the DI garden I am the gardener and as a DI coach I will perhaps be the head gardener working with fellow staff members. Hopefully it will be a fertile and healthy garden with lots of growth by all students. I have certainly been planting many seeds during this course within my own classroom, within the school, within the cluster and as my paper is published out in the wider community. I will be providing more resources over time to encourage this growth, a lattice as a framework for development and lots of constructive feedback as I monitor the growth.” (Case study, 2005)

Figure 34 The lattice and the curriculum garden metaphor
The metaphor of the curriculum garden is one which I have gone on to expand during this narrative. It eventually extends into the description of a permaculture. The metaphor fits very nicely alongside my original conception of the learning lattice. Figure 34 outlines potential dimensions of this metaphor. Various elements of the metaphor can be easily aligned with my pedagogy, elements of the school community and my curriculum design processes. At the heart of the metaphor for me is the lattice, my curriculum model, acting as a framework for curriculum planning and construction. It is also acting as a mode of showing inter-relationships, supports for the curriculum and a way of shaping the implemented curriculum. My living curriculum theory is well illustrated through a living metaphor such as the curriculum garden.

**Lattice use and development 2005**

“The recent curriculum day on VELS turned out to be very successful and some of my work on the components of VELS and the unit outlines and templates were regarded as very useful. My new model has been adopted by a number of departments and used successfully within Maths, English, SOSE\textsuperscript{22} and Technology departments to date. I have also shared the model within the local cluster of primary schools ... The new model is the first real change to the lattice in 2 years and takes into account the domains of VELS. Staff have seen it as a valuable planner to structure the key elements of units and get a good overview of what can/should be included within units.” (Case study, 2005)

A sample VELS lattice follows in figure 35. Eventually a VELS based lattice such as this one was taken up as the template for all curriculum documentation from years 7-10.

\textsuperscript{22} SOSE – Studies of Society and the Environment (Humanities)
<table>
<thead>
<tr>
<th>Bloom/Anderson Levels of thinking</th>
<th>Thinking Domain</th>
<th>Habits of Mind</th>
<th>Multiple Intelligences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describing</td>
<td>At Level 5 students apply a range of question types, and locate and select relevant information from varied sources. When identifying and synthesising relevant information, they use a range of appropriate strategies of reasoning and analysis to evaluate evidence and consider their own and others' points of view. They use a range of discipline-based methodologies. They use specific language to describe their thinking and reflect on their thinking processes during their investigations.</td>
<td>Respond with wonder and awe</td>
<td>Naturalist</td>
</tr>
<tr>
<td>Analysing</td>
<td></td>
<td>Thinking flexibly</td>
<td>Interpersonal</td>
</tr>
<tr>
<td>Synthesising</td>
<td></td>
<td>Thinking about thinking</td>
<td>Word</td>
</tr>
<tr>
<td>Evaluating</td>
<td></td>
<td>Listening with understanding and empathy</td>
<td>Spatial</td>
</tr>
<tr>
<td>Predicting</td>
<td></td>
<td>Persistence</td>
<td>Deep</td>
</tr>
<tr>
<td>Creating</td>
<td></td>
<td>Thinking interdependently</td>
<td>Music</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gather data through all senses</td>
<td>Body</td>
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<td></td>
<td></td>
<td>Manage your impulsivity</td>
<td>Presentation</td>
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<td></td>
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<td></td>
<td>Process</td>
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<td></td>
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<td></td>
<td>Product</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Interpersonal Learning</th>
<th>UNIT TOPIC: ANIMALS GOALS/ESSENTIAL QUESTIONS</th>
<th>Personal Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Level 5 students accept responsibility as a team member and support other members to share information, explore the ideas of others, and work cooperatively to achieve a shared purpose within a realistic time frame. They reflect on individual and team outcomes and act to improve their own and the team’s performance.</td>
<td>Why are animals important to people? How do we study animals? How are animals affected by people? How do animals survive in urban environments? Why are some animals endangered? How can we protect animals more effectively?</td>
<td>They use an expanded repertoire of learning strategies. When learning with peers they develop effective relationships, providing and responding to constructive feedback. Set realistic short- and long-term learning goals within a variety of tasks and describe their progress towards these. They complete tasks within set time frames, prioritising their available time, demonstrating motivation, and considering both their own and others' needs when making decisions about suitable learning processes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication/Literacy</th>
<th>PRESENTATION/PRODUCTS</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Level 5 students use the communication conventions, forms and language appropriate to the subject to convey a clear message across a range of presentation formats to meet the needs of the context, purpose and audience. They provide and use constructive feedback and reflection to develop effective communication skills.</td>
<td>A Selection of activities including the following:</td>
<td>At Level 5 students select the most appropriate search engines to locate information on websites. They use complex search strategies to refine their searches. They judge the integrity of the located material based on its credibility, accuracy, reliability and comprehensiveness.</td>
</tr>
<tr>
<td>Life of animals - Video activity</td>
<td></td>
<td></td>
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<tr>
<td>Secret of NIMH - Novel activity (ISE only)</td>
<td></td>
<td></td>
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<tr>
<td>List other activities you choose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>At least one activity is to be a group one.</td>
<td></td>
</tr>
<tr>
<td>At least one activity is to use multimedia</td>
<td>See handout for more details</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Design, Creativity and Technology</th>
<th>Discipline 1</th>
<th>Discipline 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Level 5 students think flexibly and use various sources of information to investigate and research a range of factors relevant to design briefs.</td>
<td>Content, concepts and skills</td>
<td>At Level 5 students produce, in print and electronic forms, texts for a variety of purposes, including speculating, hypothesising, persuading and reflecting. They write arguments that state and justify a personal viewpoint; reports incorporating challenging themes and issues; personal reflections on, or evaluations of, texts presenting challenging themes and issues. They edit their writing for clarity, coherence and consistency of style, and proofread and correct spelling, punctuation and grammatical errors.</td>
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<td></td>
<td>Civicss and citizenship</td>
<td>They use a range of sources for their inquiries, including the mass media, and present viewpoints based on evidence.</td>
</tr>
</tbody>
</table>

Figure 35 VELS based Lattice example
Assessment and rubrics 2005

“If I am to be serious about differentiating the curriculum it is important to widen the range of entrance and exit points in the units, to increase the amount of formative feedback that I am giving students to improve the quality of their work and also make it easier to complete summative assessment and use the 2B4T strategy, self and peer assess before I finalise the summative results. The task also now needs to be completed with some reflective writing by the students, this will complete the cycle allowing the A4L to occur alongside the AasL and the Aof L. (Assessment for Learning, Assessment as Learning and Assessment of Learning).”

(Case study, 2005)

In 2005 a “current perspectives on assessment” was released by the education department. This document has impacted significantly upon our practices and eventually led to the updating of school policy. A summary of the principles and purposes of assessment drawn from this document is shown in figure 36. It clearly defines 3 forms of assessment to be used. The diagram has been constructed to convey the key points of the paper quickly and effectively. I have used this several times for teacher professional development.

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23 2B4T – 2 before teacher strategy. A term I developed to encourage students to show their work to 2 individuals before submitting it to me for assessment. The 2 individuals could be a parent, sibling or peer.
Figure 36 Current Perspectives on Assessment 2005
A vision of school 2011

“Early this term we were completing a piece of story writing in IS and I decided to write a short scenario of my own ready for the next curriculum meeting. I have included the scenario below. It was written quickly but captured some sense of my future vision of teaching at Green Gully. All names are fictitious.

As I entered the school I quickly checked the electronic bulletin board that had the announcements for the day. The curriculum committee was planning a virtual meeting at 3.30 as 2 members of the committee were attending meetings in the city and Brian was on his day off. The agenda for the meeting included up-dating the vision developed 5 years ago and implemented over the last 4 years. I noted that there were recently added comments on 2 of the documents that had been tabled for discussion at the previous meeting.

Heading towards my home room I noted 2 students already logged into their ILPs. Last night I had added some instructions to the class blog on their Ancient Civilisations units. I had reminded the students of their mid assignments tasks that are due this week. I had reinforced the shape of this task as a think-pair-share activity that must relate to their goals and the rubrics that we had examined the day before. Carmen had asked if she could complete her performance of understanding as an oral presentation and I had agreed but said that I wanted her to adapt the earlier oral presentation rubric to include the goals of this unit and to show it to me later today.

Hang was working in her ILP and up-dating her reflective writing learning log. She had achieved a good result in a maths test last week and wanted to note down her revision strategies. Tom was inputting some images of his art work that was progressing very nicely.

The class was working on the Ancient Civilisations unit and

As the reader will see I return regularly to the issue of vision building during this narrative. I was constantly looking into the future envisioning the school or my classroom and looking to incorporate ideas from the various education voices I was hearing. This thinking was often initiated and then presented through concept maps and other diagrams I constructed to summarise my ideas. Scenarios like this one were then used to show the ideas in practice. It was a valuable implementation strategy helping to make theoretical perspectives more realistic.
were completing a wide range of performances of understanding. Bedia was working on her model showing the housing in Ancient Greece. Ivanna was collecting information to put into her diary of life in Ancient Rome. Christina was heading off to the pod to collect information on the Aztecs. Dean was colouring in a poster of Ancient China and Tai was putting together 2 brochures contrasting life in Australia with that in Ancient Japan. Uyen was using a simpler text as she had difficulty understanding English being an ESL student.

This was one of the longer periods with 100 minutes to continue the task and hence a wide variety of tasks was important for engaging the students. School finished today at 12.40 although some students would stay on and be supervised in the library. The principal was leading a discussion on Habits of Mind this afternoon looking at the history of their use at the school and evaluating their value, assessment and importance within the welfare, leadership and curriculum programs.

My VCE class tomorrow started at 8.00 am and I was using the computers to complete the SAC (School Assessed Coursework) on development proposals for Nairobi. Each student had prepared a powerpoint presentation and was presenting within their role tomorrow morning. The powerpoints were being assessed against the rubric for the SAC both by the students themselves and myself.” (Case study, 2005)

“I tabled this scenario at a recent curriculum committee meeting within which we are beginning to build our vision of GGSC at least in the next 5 years. We have been looking at key elements of the vision, identifying important promises we would make to students and then bundling these thoughts and suggestions to start to build our visions.... It is a very complex process putting together a more concrete form of vision but only in this way can we really build up a picture of what we would like the school to look and sound like. Only by sharing ideas in this type of way can a truly 21st century learning community be constructed. However, we must also not be limited by what we can imagine but also bring in ideas from elsewhere and that is how I see part of my role at the school. For me building the vision is a very important process as it can then allow us to back-plan towards it. The vision needs to encompass all the processes that go on at the school. It needs to explore best practices in learning, teaching, using ICT, professional development, habits of mind across the school, flexible timetabling, flexible hours, building a community of learners, enlightened vision-led leadership, support, respect, student centred curriculum, differentiated learning, LAN based curriculum shared across schools, learning managers,
Learning to Learn, student led conferences, student exhibitions, assessment for, of and as learning etc.” (Case study, 2005)

**More on Assessment**

“I have been reflecting on the 3 types of assessment that have been discussed/described recently ie. assessment of learning (summative) and assessment for learning and assessment for learning (formative). What I have been considering particularly has been the role and place of each of these forms within a single unit of work. After consideration I have developed the following chart.” (2005 Case study)

Figure 37 is a flow chart summarising the forms of assessment that are used over the course of a unit. It was designed to present ideas clearly and graphically. It does to some extent use a systems style diagram with flow lines and feedback processes reflecting assessment practices over the course of the unit. I have used this graphic regularly since its construction, with a range of teacher and pre-service teacher groups, to show how the different forms of assessment are used across a single unit. This visual allows the theory behind the 3 forms of assessment to be demonstrated, in the practical situation, showing when and where the 3 forms would be used. It is also valuable when placed against the flow charts I developed later, to see the role and place of assessment within the overall curriculum design process.

The end of 2005 was an important time in synthesising aspects of my developing theory on curriculum unit design. Flow charts were constructed to summarise these developing understandings and showed how the processes of assessment, differentiation and curriculum planning could operate through the construction process of our curriculum units. These visuals were demonstrating, in a concrete manner, how my theoretical models could be put into practice. I used them extensively for professional development.
“One of the tasks we have to clarify is a unit template to use across year 7 and later across the school. Some of my earlier work on the lattice will be valuable here as we examine how to plan units that are differentiated, assessed both formatively and summatively, and that include the various standards from VELS and Habits of Mind etc. To this end I have been examining how we develop, assess and teach units of work and have completed another flow chart to see how this might occur. In this diagram I have tried to pull together a number of different processes that occur during the planning, teaching and assessment of a unit. I have therefore included the action research cycle that leads to a spiralling of learning as a teacher plans, develops, teaches and evaluates a unit. Hopefully there is learning about planning for the next unit and how that unit will be taught in the future. This cycle is occurring and paralleling the processes that flow through the teaching unit. I have also emphasized the role of the Habits of Mind as I plan and teach a unit. In this instance there is an emphasis on using the habits of mind by teachers in the planning stage that then passes
on to the students as they move through the planned unit. A further dimension I have added to the diagram is the process of differentiation that will occur through the unit. I have identified where and how the differentiation may occur. I have stressed that differentiation occurs through the entry points, the processes and the products or performances at the end of the unit.” (Case study, 2005)

Figure 38 again is a flow chart using a systems-like approach. It builds on the assessment diagram (figure 37) and shows the processes involved in unit construction and their sequencing. It incorporates assessment, curriculum planning, curriculum evaluation and differentiation of the curriculum all within the one summary diagram. Its complexity reflects the dynamic and complex nature of curriculum planning. A separate but paralleling curriculum action research cycle has also been included. This visual has been used extensively for staff professional development. It allows the different processes and their interactions to be seen. It allows the complexity to be unpacked for staff. It has increased understanding of the differentiation and assessment processes.

Figure 38 Curriculum planning for a differentiated unit 2005
“Alongside my thinking work on unit design processes I have also been looking at where we are going more specifically, and in particular how we are getting there. I prepared a diagram for the curriculum committee of the great range of groups that are working towards our curriculum vision each separately but on a parallel course, (towards what?). I felt we needed to document this curriculum vision more thoroughly hence the characteristics.

Figure 39 Building the Curriculum Vision 2005
and features I have included (in figure 39). We had some valuable discussion about the diagram at the meeting that reflected the need for seeing how we were working towards a curriculum vision. We also explored how common a view such as this would be currently, and the need to widen this understanding of where we are going and how we are working towards this vision. We also discussed whether we should start with the values and also categorise the range of features I have included within my “drafted common” curriculum vision. Perhaps some of the features could be grouped under headings such as objectives, skills or content? Another thought raised was that these features all fit under the heading of a personalized differentiated curriculum and perhaps this is all we need here. My response is that I want to show more detail about the vision, to provide some detail about how it looks, operates and what guides it. In many ways I am pulling ideas out of VELS and POLT under those personalized and differentiated banners.”(Case study, 2005)

In figure 39 I have summarised the different groups, what they were focused upon and the need to head in a common direction. I have identified components of this common vision in the draft I have proposed for discussion purposes. These are all elements of the transgression. In aligning the end point of this work by the disparate groups and individuals within the school a greater degree of sustainability and success was likely. An understanding of the vision is critical with regard to successfully implementing change during the transgression.
As I stated at the beginning of this section on 2005 this was a very busy but eventually a productive year. The introduction of the Victorian Essential Learning Standards (VELS) drove considerable change as its implementation was initially to start in 2006. The other changes in the district relating to working more closely with other primary and secondary school also drove change. Many external voices were also impacting upon us as shown in figure 29. ICT and networking also made us more aware of other aspects of powerful learning. Developing our vision had become a complex activity as we tried to respond to these many drivers. Variations in staff opinion occurred with relation to all of these changes. It was a year with much discussion of our direction as we listened to these external voices and the leadership team worked towards a consensus on these issues and possibilities.

Personalising learning was a priority and we were adopting many strategies to work towards this goal. Work on differentiation was really just beginning. My own living curriculum theory developed significantly under the influence of these many voices. My learning lattice was refined and incorporated the key domains of VELS as well as being influenced by the TFU framework. Our assessment, pedagogy and curriculum design processes became more complex and detailed as they were further refined. 2006 would see significant changes in curriculum and pedagogy and a number of innovations being developed and trialled. More staff would become part of the changes as a VELS based curriculum was developed at some year levels.
Case Study- 2006 “The broadening transgression”
2006 was a major year for change. It was a year in which all staff became actively involved in formal professional learning or curriculum teams. For me it was the year of LSF\textsuperscript{24} supported, year 7, collaborative curriculum construction. Time release and the opportunity to work together during school time as well as after school meant that considerable progress could be made in re-developing curriculum, refining assessment practices, personalising the curriculum and changing pedagogy. It was an opportunity to embed many elements of the changes occurring during the transgression. During the years my ideas on curriculum design processes in particular, developed as we continued to refine our vision and responded to outside demands.

Values and the Living Curriculum 2006
“We started off the week with a discussion of the school values as contained in the school vision and values statement. This was very interesting as we examined our understanding of the values and what sort of behaviours reflected these values. This is part of an ongoing discussion that has been established through a working party.”
(Case study, 2006)

“The values discussion I mentioned is an interesting parallel to my reading of Jack Whitehead (1989, 2006) who in developing his Living Curriculum theory talks about the questioning of values as a way forward. Indeed he talks about the “living contradiction” in that the fact that I am not meeting my value leads to an impetus for change. I like this “Living Curriculum” theory and notice that I am starting to use the phrase regularly in my curriculum discussions. I see our curriculum, as we develop it, as very much a living “document”, one that will grow from year to year as we share and improve upon past efforts. It is not static or fixed. This year I hope we will document our work on the Local Area Network (LAN) and then as individuals build their work, that too will be shared. In time this sharing should go wider ....”
(Case study, 2006)

\textsuperscript{24} Leading Schools Fund. A Victorian government initiative providing funds to schools to develop their pedagogy.
Collaboration 2006

“Neville Johnson” has been working with the school over the past 2 Thursdays and he stresses an action research way forward for our teacher teams. Indeed talks of them as Action Inquiry teams, stresses the need to identify and address challenges and issues rather than just have a team for the sake of it. He emphasises the reason for teaming is not content or documentation but continuous improvement with regard to these challenges. He describes a learning cycle process (action learning/action inquiry improvement process) that the teams can use to go forward based around:

1. Using information to identify challenges
2. Forming a PLT (Professional Learning Team) to plan action
3. Taking action - develop an improvement edge – focus on student/teacher learning
4. Reflection on the change and evaluation
5. Unification of the “work based” projects into longer term “special projects”

A concern raised by Neville is that the groups are not just set up to do the VCE or to do VELS work. He stressed the focus was on learning and in particular the challenges he saw to learning.” (Case study, 2006)

Personalisation, Curriculum Planning and the Leading Schools Fund

“Another group that has been meeting is the planning/resource group for the year 7 LSF program. The personalising of learning is a huge challenge and that is what is at the centre of our planning..... The discussion in our planning group led the acting principal into completing a diagram to show the strategies forward for our group.

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25 Neville Johnson from Melbourne University worked with the school as an expert in collaborative team building.
After reflection I felt that a key axis of the diagram was in fact missing and so last week I up-dated this diagram to include some extra information and I then called this the personalisation diamond that reflects our work challenges and strategies for the year.....It shows the main strategies/gateways forward through the labelled axes. (See figure 40). These are at the same time the key challenges that Neville Johnson would have us identify and address. Each of the planning team members are key resource personnel who will support innovation and growth as we target and work forward in these areas. For me the central axis is that of differentiating the curriculum and that is why it is at the heart of the diamond. The top node or point is personalisation and at the bottom of the diamond are our templates the supporting planning.

One of the most important teams meeting at this time was the LSF planning team. We were responsible for managing the LSF process. We worked together to plan the implementation, identify potential blockers and drivers, and explore options with regarding to maximising our impact. We regularly discussed key elements of the implementation process and collaborated in overseeing and managing these changes. In time a priority for the group was aiming for sustainable change.
structures/organisers for the personalisation of learning. I have identified and highlighted a number of domains from VELS that we particularly need to focus upon.” (Case study, 2006)

During this narrative I have incorporated a number of scenarios. I use these as a technique to show what could be, as an introduction to a possible vision. The audience for these scenarios has varied over time. I have used them for myself to envision practical scenarios to work towards, and as part of my/our vision building processes. I have also shared them with groups of teachers in order to help show a strategy such as assessment for learning in practice and I have also used them in newsletters for the whole staff or as handouts for the curriculum committee. This has been done to show elements of a potential future, to stimulate discussion and to show possibilities and opportunities. A detailed scenario entitled Marissa is included as appendix C. This scenario was specifically shared with the curriculum committee during our discussions to illustrate possibilities with ILPs, and to look at what could happen in a future involving a multi-campus school in our district. This was a very important discussion occurring at this time. Identifying benefits and developing an understanding what this could look like was critical.

Our work during this time included improving the documentation of the curriculum and linking it specifically to the non-discipline VELS domains. The learning lattice was the planning template we were trialling at this time for this purpose. The lattice became an integral part of our documentation process and a key element of my own developing theory. The lattice is very much the practical curriculum model and curriculum planning framework that supports my holistic approach to curriculum construction. It continues to develop over time as I respond to new inputs, and my understanding develops of the nature of 21st century curriculum and how it could be planned.
**WIDE** and **Curriculum Planning**

“We are currently exploring and developing a range of organisers to plan curriculum. We have decided to use three types with an overall unit planner (the lattice), a breakdown planner for lesson plans/activities over the course of a unit and an individual lesson planner. Our work involves personalising curriculum through differentiating curriculum, incorporating assessment for learning during the unit along with Learning to learn strategies, ICT and the requirements of our new VELS curriculum. The planner/organiser I have developed attempts to infuse these areas together through what I call a Learning Lattice. I place great import on the thinking curriculum so there is a clear emphasis on the habits of mind and other elements of the thinking curriculum. I have adopted elements of the TFU structure through the core of the lattice by identifying essential questions and learning and performances of understanding.” (2006 Case study).

**Curriculum Review and Curriculum Promises 2006**

“Today I also sought out the ex curriculum coordinator and found copies of the 6 curriculum promises the curriculum committee worked through in small groups to help guide the review process. I have included them below.” (2006 Case study)

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26 WIDE (Wide-scale Interactive Development for Educators) is an innovative professional development program based at the Harvard Graduate School of Education
These promises have influenced my positions on curriculum issues since their development and represent a platform upon which much of my thinking has been built.

As I mentioned earlier a major component of my work in 2006 was within the LSF supported year 7 Integrated Studies team. We spent a lot of time planning and implementing new curriculum involving the new pedagogy closely linked to the VELS curriculum. The work was initiated through an LSF planning day a major outcome of which was the concept map for a new integrated Studies program (see Figure 41).

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**Figure 41 A Year 7 Curriculum Planner**
This planning day and consequent planning processes were important as an opportunity to trial and refine curriculum development and documentation processes. These would eventually be used as a model, becoming adopted across the school and significantly informing this thesis and contributing to my own living educational theory. It was also an opportunity to widen understanding of our developing vision. The meetings and resultant products also demonstrated some of the characteristics of 21st century curriculum planning for the new more complex paradigm.

"...This gives a current thinking outline for our new course, the first major revision of the year 7 IS course for many years. Our way forward will include 2 teams working collaboratively on each of the 2 totally new units for 2006. These 2 teams will regularly report progress to the whole group for cross fertilisation of ideas. 2 major themes for the year have been identified in change and sustainability, these offer lots of opportunities for integration across year 7 curriculum ...." (Case study, 2006)

The Sustainable Curriculum 2006

"The other thought I have been having this evening is the way in which the curriculum themes we have identified for the new I.S. program are also to be found in my thesis work. I am looking at past, present and future curriculum with a recognition of the underlying theme and driving force of change. Alongside this I am aiming to develop a more ecologically sustainable curriculum theory, one that integrates holistically, that is alive and is engaging. My curriculum garden will be differentiated, sustainable, challenging and holistic! It is one that will be personalised to cater for individual interests and one within which I can reflect on the activities and interactions that have occurred, that will bring satisfaction, learning and pleasure." (Case study, 2006)

"Another important outcome of the day was a greater understanding of our direction and vision. Each of the gateways opens opportunities to take our curriculum and pedagogy onward. We also revisited the 2010 diagram to highlight where we are going over the next 5 years. This gives us the bigger picture towards which we are working. We discussed a
couple of the gateways, highlighting the ones we are particularly focused upon this year.”
(2006 Case study)

Use of Graphics in my thesis 2006

This is an important extract as I ponder the role of my graphics within this thesis. They do act as both data and method and are used to help me construct my ideas and present them to various audiences. One of the goals of this research has been focused around the documentation, analysis and interpretation of the processes involved in completing a narrative. The value of the graphics for a suggested visual narrative is discussed.

"Tonight I have been reflecting upon the best way to use my graphics. I am coming to the conclusion that they represent my visual story, a visual narrative. I have sorted them by date. I realise that I have drawn up more than 100 diagrams in the last 3 years. Most of these use the software package called inspiration. They allow me to make connections, to deepen my understanding and look at the wider picture. I use them to integrate ideas and develop my more holistic view of education. In many ways they represent and summarise my developing living educational theory. They are for me part of a living curriculum. It is not one that stands still but one that is constantly evolving as my understanding deepens. I return to the same themes with new understandings brought about by reflection and wider reading. Graphics of themes such as assessment have consequently deepened and become more complex. The learning lattice itself has evolved reflecting my deepening understanding of both the metaphor and educational processes such as TFU and the development of VELS. Education, curriculum indeed schooling are all very complex systems, operating at a range of scales and understanding of them takes time.

...What role do they have?.... Are they data or are they method? Probably like my writing they are both! Certainly they provide much food for thought and help me share my ideas with the wider audience. They are neither formal mind maps nor simple concept maps. They are a form that has evolved for me. Some of them are more easily classified as flow charts or summaries, others have a different shape.”(Case study, 2006)
I have referred to my personal curriculum theory as “living curriculum theory” for a number of reasons. As highlighted here it is growing and changing. Alongside this I commonly use metaphors from gardens and the biological sciences as they represent interest of mine and areas where I have read widely. It is easy for me to see analogies in these contexts. I remain strongly influenced by the writing of Jack Whitehead (1989, 2006) and his discussions of living theory. The complexities of developing curriculum are also reflected in the complexities of understanding life.

Living Geography Curriculum 2006

“Geography is certainly a living curriculum in terms of its development. It is growing and changing this year very quickly because it is a brand new course. The basic elements will stay the same for next year...but will grow after this year’s experiences and deeper understandings of the directions involved in the new course...... As I better understand the goals of the course I will be able to generate materials, teaching strategies, assessment strategies and resources to allow students different pathways to reach understanding. Having the 2 groups (years 11 and 12) working independently all the time is a limiting factor in terms of my role and their learning. How can I make this a mutualistic and positive interaction rather than a commensual or even worse a parasitic one? Here I am applying concepts from ecology to look at my practice and the difficulty of running the 2 groups in the one class. The English Literature experience is definitely a mutually beneficial one in terms of the increased discussion that occurs because of greater numbers participating and then the quality increases because of the back ground of the year 12 students.” (Case Study, 2006)
Curriculum Review and Literacy 2006

“Wednesday was the curriculum committee meeting and this week it was dominated by the discussion of the literacy priority and our need to make a decision with regard to implementing a new literacy program. I have always felt that literacy was core to our success at school and note that in my initial lattice I did have literacy as a key element for all curriculum planning. I included literacy skills in unit examples from year 7 to VCE. In the VELS format of the lattice I have incorporated communication rather than literacy as an element but would still see literacy within this part of the lattice as important. ..... The other important discussion at the curriculum committee revolved around pulling together all the innovations, groups, changes etc that are being taken up ..... The issue of innovations overload is a pressing one that we need to address to maximise staff support for the changes and directions the school is moving towards.” (Case study, 2006)

Vision Building 2006

“One thought provoking discussion looked at the drivers for change and it sent me back to my notes on building the vision. Here (in figure 42) I identified the “macro” or key external drivers or inputs for change such as VELS, POLT, our Values, Enter scores27, the nature of the community, 21st century skills etc. I argued that these are the inputs drivers to help us develop our vision and then this focuses our attention and initiatives as we move towards this vision. An argument was put

These 2 extracts are important with regard to the implementation of change and innovations at the school. The literacy priority is highlighted in the first extract and it is interesting to note that I have consistently incorporated literacy as an element within all my curriculum planning lattices. Secondly, we discussed the innovations that were impacting upon the school and I then identified the drivers at work from my perspective. I classified these as external and internal drivers and listed the structures we were putting in place to support the changes. By incorporating elements of the changes required by policy within the curriculum lattice, I was providing a structure to support and implement the external drivers.

27 Enter scores were used in Victoria for calculating entry to universities
however, that these are not the drivers but instead it is the goals, essential questions or perhaps rich tasks that drive our curriculum. My initial response is that these are the strategies, part of our pedagogy that helps structure or format our thinking rather than the drivers.” (Case study, 2006)

Figure 42 lists key drivers and at the same time identifies elements of the lattice that show how we can incorporate these drivers into our curriculum planning and documentation. It reflects one response that I and the school had to the increasing demands we were expected to meet. The last column identified areas that we were still planning towards. In time the learning lattice, breakdown planners and curriculum planning flow charts of our later documentation processes would provide formal structures that addressed and included these areas.

<table>
<thead>
<tr>
<th>Macro Drivers - external</th>
<th>Internal “drivers” to support the change, Organisers/strategies</th>
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<tbody>
<tr>
<td></td>
<td>Early Lattice elements (1)</td>
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<tr>
<td>VELS – “essential”</td>
<td>Literacy</td>
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<td>POLT</td>
<td>ICT skills</td>
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<td>VCE preparation</td>
<td>Habits of Mind</td>
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<td>Enter scores</td>
<td>Learning s’skills</td>
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<td>21st century skills</td>
<td>KLA outcomes</td>
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<td>Our vision and values</td>
<td>Level of thinking</td>
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<td>“The Blueprint”</td>
<td>Multiple intelligences</td>
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<td>The “Green Gully”</td>
<td>Presentation formats</td>
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<td>community expectations</td>
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<td>“Powerful Learning”</td>
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<td>Later Lattice elements (2)</td>
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<td>Thinking curriculum</td>
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<td>Discipline outcomes</td>
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<td>Habits of mind</td>
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<td>ICT skills, M.Is</td>
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<td>Habits of mind and citizenship</td>
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<td>Understanding goals</td>
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<td>Performances, products</td>
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<td></td>
<td>Organisers/strategies</td>
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<td>Learning Lattice</td>
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<td>Rich tasks, ICT</td>
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<td>Essential questions</td>
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<td>Key understandings</td>
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<td>Goals/Throughlines</td>
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<td>A4L, AasL, AofL</td>
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<td>Performances of understanding</td>
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<td>Intel unit design</td>
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<td>Unit breakdown planner</td>
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Figure 42 Drivers of Change

Throughout this year there were a large number of outside voices impacting on our processes and understandings. These voices were usually heard at internal or external PD sessions. These voices would help to shape my theory and our curriculum work.
“On the 21st April I also attended the habits of mind hub meeting ..... The day opened with a workshop led by Viv White. She presented her thinking on the 4 dimensions of schooling which really resonated for me. Her image of 4 wheels spinning is very powerful as it highlights how one spinning wheel will impact on each of the others and teachers and students are right in the middle! The 4 wheels are pedagogy, curriculum, assessment and reporting and school organisation. See Figure 43. Here at Green Gully SC all 4 wheels are clearly spinning, at different rates and simultaneously causing chaotic change for the students and teachers in the middle of the changes. Trying to bring a sense of order and balance to this process is clearly where the school is at judged by the recent turmoil and angst caused by discussions at the curriculum committee on school timetable and curriculum review. Once again I return to the importance of a clear vision of where we are going and the need to both develop it and share it within the leadership team, curriculum committee, staff and school community.” (Case study, 2006)
“At the hub meeting we also brainstormed a unit outline within which we could integrate the habits of mind. This was a valuable process as we looked at all the domains within VELS, the 6 POLT, Assessment and Reporting as well as the habits of mind. We brainstormed a unit on the sun that could be taught at most levels. But using the 4 areas as a checklist was a good way to start the planning process and I think it would be valuable to incorporate this into our own planning processes which are somewhat similar but not totally the same. Having the 6 POLT was a valuable extra layer to check against or refer back to. We did start with a topic which changed into a question “why is the sun important?” which turned out to be quite fertile with many possibilities spinning off from it in terms of the direction that we could take. We need to ensure that this is an essential question rather than just a fertile one and that it is essential within the formal curriculum level we are working at, in our case level 5 of VELS.” (2006 Case study)

**Integrated Studies**

Integrated Studies, Changing Environments and the new design Process

“Last week saw the beginning of our work on the 2 new year 7 units on changing environments and life in the 21st century. These 2 units are looking at the present and the future and will be developing student understanding of the concepts of sustainability and change. It was an exciting activity to begin re-developing our curriculum after many years and the team that I was leading worked well during our session. We have begun by brainstorming a series of possible essential questions and topics under

Here I note the development of our more refined and much more complex curriculum planning process that was eventually to become the endorsed school practice. We were incorporating key elements of the refined planning process here such as the use of mind mapping, essential questions, the habits of mind, various VELS domains and potential assessment tasks within the collaborative process. The first flow chart representing this process occurs in figure 44. The flow chart also shows in the very large arrows the concurrent work being completed by members of the team relating to the LSF priorities. These are all key elements of the transgression.

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29 IS - Integrated Studies a combination of humanities and English running on the timetable at years 7 and 8.
our theme of changing environments. It is a level 5 VELS unit and so we are building our unit in this context hence an emphasis on Australia, the Pacific and Asia along with map skills and an inquiry process with our examples. I also included on our basic planning mind map the POLT principles, habits of mind, potential assessment tasks and each of the VELS domains. Tasks have been given to each team member to explore possibilities in some of these domains and at our next meeting we will continue this development process. The overall process for unit development across this term is shown in figure 44. This process has been guided by my experience with WIDE and readings of TFU, differentiation and UBD.” (Case study, 2006)

**Figure 44 I.S. Curriculum Planner term 2 2006**
Integrated Studies (IS) Curriculum Planning

“Our IS curriculum planning meeting went quite well on Thursday. The three of us discussed how various VELS domains 30 could fit into the unit and I have summarised that in the latest lattice. We also finalised our essential questions, their order and accepted the list of concepts I had drafted. I have since drafted a list of the possible topics we brainstormed the previous week and I have also started a list of potential assessment activities that might be included. The lattice is looking very full and we need to consider how much of what I have listed is feasible. As we plan the various activities it will be important to cross check what I have included in the lattice with what we actually include within the breakdown planner. I am also left with questions regarding how many domains should we be covering? What will happen in other subjects? How will we synthesise what is happening across the school with the non-discipline domains? Who will report on these other domains?” (Case study, 2006)

Professional Development Rubrics, and Understanding By Design

“Jay McTighe was a highlight for me. He described the various stages of backward design starting with identifying the desired results, determining what would be acceptable evidence and then

This was a description of the curriculum planning process that we used at this time. It was developing in response to our growing understanding of the best process. A number of practical issues with regard to realistic curriculum implementation were raised and these led to changes in the lattice and in curriculum planning reporting processes across the school.

The opportunity to listen to Jay McTighe at a local professional development seminar in 2006 was another critical event in the development of my curriculum planning theory. Backward planning not only influenced our planning flow charts but also our work on assessment, the use of essential questions, the school vision, curriculum design and the lattice itself.

30 Within VELS there are 3 strands of learning. Each strand is further organised into domains, with further divisions into dimensions. In total there are 16 domains identified within VELS and 39 dimensions. The expectation was that schools would teach all these essential domains and dimensions somewhere across the curriculum.
planning the experiences and instruction to achieve this. He emphasised the need to think like an assessor rather than an activity designer. Hence the planning structure I have put into place for this term which reflects this process. It is very similar to that of the TFU framework. He also showed some excellent templates for us to examine in our work and help with our planning. His templates help to keep an alignment between goals, understanding, essential questions, assessment evidence/performances and the learning plan....The McTighe sessions also included discussion of essential questions and the 6 facets of understanding (applying, explaining, interpreting, perspective, empathy and self-knowledge).” (Case study, 2006)

Of course during the transgression not all staff agreed with all elements of the suggested changes......the narrative continues with some extracts relating to issues and concerns that were raised and my/our reactions. These extracts from my journal are important as I explored the blockers to change/innovation and how I/we responded to them as we planned our way forward.

**Leading Schools Fund - Some Issues**

“What do we/I want to achieve through the LSF? I have been writing about this question tonight after a couple of meetings that were not as successful as I had anticipated. The humanities meeting last night raised some concerns about the nature of the lattice, the language used (VELS standards based) and the value of MIs in planning the curriculum. Another concern was the level of geographic skills identified for the year 7 unit on changing environments such as the use of

“Our LSF program has taken off but is experiencing some difficulties as it tries to leave the atmosphere/current curriculum! Some of the passengers and crew members are unsure of the direction and the best pathway into the future. Some may even want to get off! Our planning is relying on VELS to lead the change and we need to clarify the role of the other drivers for change. .... We need to re-iterate that our goal is a differentiated personalised curriculum built upon VELS and POLT. Professional reading, continuous learning and PD is essential for this process to develop.” (Case study, 2006)
topographic maps. The issue of staff expertise was raised. Another concern was an over emphasis on skills at the expense of content. The need to remember to instil wonder and awe through content was raised. The need to ensure the integration of humanities including history into geography focused units and visa-versa was also raised.” (Case study, 2006)

“What do we/I want to achieve through the LSF?

1. We develop an understanding of how curriculum can become more personalised and student centred
2. We develop a better understanding of the learning process
3. We complete units of work ready for use and trial them during the year
4. We work to design curriculum in a team environment
5. We develop a unit design process applicable across the school based around the learning lattice, a breakdown planner and a lesson template
6. We develop a knowledge of VELS and design curriculum incorporating the Interdisciplinary strands and elements of the Physical, Personal and Social strand
7. We provide an examplar of how curriculum can be designed for the college
8. We lead the personalising of curriculum at the school
9. We develop an understanding of A4L, AasL and AofL and strategies for their implementation including the use of rubrics and varied forms of self and peer assessment
10. We develop an understanding of L2L and strategies for its implementation
11. We trial the use of the Learning Journey and strategies to use it in our curriculum
12. We develop our understanding of our students through the use of Individual Learning Plans that have been incorporated in the Learning Journeys
13. We develop an understanding of how curriculum can be differentiated and work towards a differentiated curriculum in our curriculum designs
14. We (as IS teachers) lead a class team to share our learning and explore opportunities for integration of curriculum
15. We develop an understanding of the Hargreaves gateways and other avenues for achieving a more personalised curriculum
16. We share our learning with other humanities staff and later all staff
17. We develop an understanding of and skills appropriate to the 21st century imaginary described by David Hargreaves” (Case study, 2006)
Living Educational Theory and Practice

“Reading around the relationship between theory and practice has been valuable over the holidays. I am clearer now in that my developing living educational theory is one of the living curriculum. This will be made up of the models, graphics, unit designs etc that I develop in IS and for Geography. The learning lattice is a big component of this process. The flow charts I am developing to show the production of a unit are also valuable. These are processes and charts to roll out to other staff and collect possible feedback. The work I complete is also occurring in my curriculum garden which is the sum of the environment I work within. Both the curriculum garden and the living curriculum theory are constantly evolving as I collect ideas, reflect on them and then take the best of them and seed them into the environment within which I work. Alongside this I am consolidating earlier trials and retaining the best of the ideas that have been used. I am also seeding ideas on a variety of scales because of my networking.” (Case study, 2006)

Role of the Lattice 2006

“This is a very important reflection as it shows me looking inward into my practice and discussing practice and theory. I am identifying key components of my emerging living curriculum theory. At the same time it is showing me looking outward, linking into networks to both share ideas and further develop them.

“At the curriculum committee we had a discussion of varying planners and I was concerned that they would take away from the value of the lattice. The acting Principal expressed the belief that they would complement the lattice as what she wanted to see was in fact a unit summary. I believed that this could also be developed through the lattice and hence have developed a unit summary format for this stage of the VELS implementation process that included space for discipline knowledge and activities as well as the interdisciplinary strand domains and space to identify activities here also. We also simplified the core of the lattice to remove the idea of essential questions but clearly identify goals, concepts, skills and assessment tasks. This is the language that staff are currently familiar with and could more easily complete.” (Case study, 2006)
“9th July “At the curriculum committee we also had a discussion of the need for a consistent approach to curriculum development and the need to document our work. ... to help us develop a more complete and fully documented LAN based curriculum unit.” (Case study, 2006)

**Implementing a new Integrated Studies curriculum**

Saturday 29th July

“4 weeks of the new changing environments unit has now been covered. One thing that I am sure about now is that we have planned too much for the time available! ... We are all feeling pressure to complete tasks by a certain date rather than ensure understanding by the students. ... If we remain aware of the essential questions, key understandings, concepts and skills we want to cover then we should be able to use different pathways to achieve those understandings. We don’t all have to cover an identical course at the same time and in the same way..... We are making a large number of resources available for the team to use to develop these understandings. Our developing curriculum is VELS compliant and is integrating many of the domains and dimensions. We are already reflecting on what has worked well, sharing ideas at our meetings and working collaboratively.” (Case study, 2006)

**Curriculum Design process 2006**

“I have been reflecting upon unit design process and procedures and have developed a flow chart of this process and also annotated a copy of this flow chart to show our progress through the process. (Figure 45). This allows me to see both a theoretical model and the practice linked together. It is a visual form of evaluation to see the reality of each of the stages and how they have operated during the development and implementation of the Changing Environments unit.” (Case study, 2006)
Figure 45 Evaluation of unit
Figure 45 showed the more refined and detailed process we have been using along with some comments on its practical use. This commentary and evaluation process provided valuable insights into the effectiveness of the design I had constructed. The comments provide insights into the effectiveness and helped in consolidating and validating our work.

“This week I also developed a curriculum unit checklist that developed from an ingredients list we had been discussing at school. These are the features/activities to include within a unit as you are planning it.”(Case study, 2006)

<table>
<thead>
<tr>
<th>Component or Ingredient</th>
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<tbody>
<tr>
<td>▪ Big ideas – Throughlines – Major Understandings</td>
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<tr>
<td>▪ Unit goals</td>
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<td>▪ Essential questions</td>
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<tr>
<td>▪ Entry points for understanding</td>
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<tr>
<td>▪ Discipline/s standards</td>
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<td>▪ Discipline/s concepts</td>
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<td>▪ Discipline/s skills</td>
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<tr>
<td>▪ ICT skills</td>
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<tr>
<td>▪ Information/research skills – CD, library, Internet</td>
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<td>▪ Personal skills</td>
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<td>▪ Interpersonal skills</td>
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<tr>
<td>▪ Habits of mind activities</td>
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<td>▪ Thinking skills – range of levels – Blooms/Anderson</td>
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<td>▪ Metacognition</td>
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<td>▪ Literacy skills</td>
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<td>▪ Communication skills</td>
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<tr>
<td>▪ Formative assessment strategies - self assessment, peer assessment, A4L, AasL</td>
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<td>▪ Summative assessment performances of understanding with rubrics, AofL</td>
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<td>▪ A range of activities across different MIs and Learning styles</td>
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<tr>
<td>▪ Opportunities for student voice</td>
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<tr>
<td>▪ Opportunities for Community involvement/ citizenship</td>
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<td>▪ Opportunity for design, creativity and technology (2006 Case study)</td>
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Over time, these components or ingredients have been incorporated into the lattice, breakdown planner and flow charts that I have constructed as part of my holistic living curriculum theory, and the processes for its implementation.

**Thesis thoughts and the Living Curriculum Theory 2006**

“I am looking at processes and theory for the design of curriculum in the 21st century. The context is the changing paradigm, the educational transgression we have been experiencing. (A transgression being the geologic term for the change from one environment to another such as a terrestrial to a marine).... The idea of transgression brings the
Here I am considering some of the characteristics for 21st century curriculum that are necessary as the transgression has progressed. Not all were being picked up by everyone, which left me with the problem of how innovations could be more sustainable.

The continuous arrival of innovations to the foreground whereby teachers are continuously expected to pick up new ideas frequently before older ones are embedded. We seem to be moving rapidly from one to another so eventually the paradigm or environment changes although many (frequently older) teachers are still back in the old environment. Many teachers simply seem to end up replacing one recent innovation for the latest as the recent innovation was not yet firmly enough embedded. If curriculum design is the central focus then the curriculum being developed also needs to be discussed and here I want to explore the establishment of an ecologically sustainable, organic, holistic, personalised curriculum (a curriculum permaculture). The metaphor supports understanding but does not dominate. The theory being developed represents my own “living curriculum theory” growing out of the work by Jack Whitehead on “living educational theory”. I am generating theory on the process of curriculum design as well as the nature of the curriculum itself out of my practice through an action learning cycle and narrative writing.” (Case study, 2006)

**Student Voice and curriculum planning**

One of the important characteristics of 21st century curriculum planning that needs to be considered is student voice. In figure 46 I have identified different stages when student voice can be considered in curriculum planning. “Today, curriculum approaches include allowing for students’ interests to direct their curriculum and for students to be actively involved in determining what and how they learn” (Manefield et al, 2007 p. 5). Discussions may occur about the topics to teach, what they would be interested in studying, how they learn about the topics (the differentiated activities of the unit), around assessment planning, and finally in the evaluation stage. Students can be directly involved in deciding assessment products as well as the criteria for assessment. Prior to the beginning of the unit diagnostic assessment is also an important process. Students may either already have extensive knowledge of a topic, or alternatively have less than expected, and hence the planned learning activities, depth of material and assessments may need adjustment.
Figure 46 Student Voice and Curriculum Planning
Integrated Studies, Leading Schools Fund, the Lattice and VELS 2006 and 2007

“In IS we have focused on VELS compatible curriculum development and that has been a huge job for us as we have taken on the challenge of developing curriculum that infuses English, (reading, writing and speaking), geography, history and economics, personal learning, interpersonal learning, communication, thinking (including habits of mind) and ICT. This is a total of 11 different domains and consequently a very large number of dimensions! Planning this type of curriculum is a huge task and has taken us through many discussions on processes, activities and assessments. These are ongoing as we develop the new curriculum, teach it and start the evaluation process even whilst teaching it for the first time. We have used the learning lattice to plan the curriculum and it has helped clearly show the standards, questions and goals we have addressed.

As our goal for the LSF is the personalisation of learning we need to focus more strongly on the gateways we have identified. The program we have outlined above will support the work being completed in curriculum teams on Thursday nights. Here the new VELS compatible curriculum is being developed across the school. The new proposal targets a much wider group than was originally...
planned. We need to feed in new skills in using the learning journey, ICT, A4L, L2L\textsuperscript{31} and differentiation. This should start to make a significant difference over time.” (Case study, 2006)

**Mt Macedon Local Area Network (LAN) based Resourcing and Planning**

“The other aspect of my work that has been absorbing lots of my time has been planning for the Mt. Macedon fieldwork. This involves all year 7 students visiting Mt. Macedon to collect fieldwork data around their essential questions. These are to do with the nature of changing environments. I have developed a fieldwork assignment, a LAN folder with several web pages, copies of the new rubric, the assignment, and a number of other resources. Teachers have also received folders with all of the above in hard copy as well as a suggested unit breakdown planner. Hopefully the staff not too familiar with fieldwork have found the resources made the task easier. I had to rationalise some of my fieldwork ideas because of the issue of student numbers and our lack of resources. Planning for 180 students to visit an area is very different to planning for 18!

The rubric I initially developed was modified to hopefully provide an example for other assessment tasks. As this is the culminating activity for the unit and it is the graded task it has ended up very detailed but at the same time hopefully instructs the students fairly clearly in what they need to do. I am expecting a report from all students but several have asked if they can use powerpoint rather than word or hand written....The rubric does attempt to assess group and individual activities as well as content and presentation, use of a bibliography and several of the habits of mind. Students are expected to self assess and

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\textsuperscript{31} Information, Communication Technology, Assessment for Learning and Learning to Learn – focusing on teaching the actual processes of learning.
write a written reflection as part of the assessment process.” (Case study, 2006) See appendix D.

**Vision Planning for 2007**

“To help us in our review and planning for next year the acting Principal had asked John Doherty\(^{32}\) to assist us and act as a critical friend.... One of the key points he made reiterated what I have been saying for a while which is the need for a very clear vision of where we are going as a school. He recognised that this is very complex in our area because of the district provision issues and discussions\(^{33}\) but I believe that this should not get in the way of clarifying our teaching and learning provision. I know that in the original LSF proposal we had looked at what Teaching and Learning might look like in the future but this has really not been discussed very widely or agreed to by the staff. The lack of this really concrete vision serves as a blocker in terms of clarifying goals for the project and indeed goal congruence for the school.... A clear vision will then as Jay McTighe puts it allow us to “own the gap” (Thinking conference, 2006) and identify the strategies and resources needed to work towards that vision as part of our school and staff action plans.

The LSF projects provide us with financial resources to support strategies to guide us towards that vision. John went on to add that we now need to work on teacher beliefs and behaviours in relation to our vision. .... A change in classroom practice and behaviours will be the real indicators of a successful transition to 21\(^{st}\) century curriculum design and pedagogy. He kept asking about what we would see and hear in terms of conversations and behaviours in and out of the classroom..... John also referred to the work of David Hopkins and the needs for successful school transformation of time, teams, networks, flexibility of

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\(^{32}\) John Doherty from the innovations branch of the Victorian Department of Education and Training

\(^{33}\) District provision discussions occurred throughout much of the time of this thesis. Discussions of amalgamations were part of the context of the study. Constructions of visions were impacted by this.
professional practices, integrated curriculum and pedagogy and the use of data and feedback to teachers.” (Case study, 2006).

**Unit Evaluation of Changing Environments**

“Were the essential questions appropriate? Did you get to cover them all? Did students develop some understanding of each of them? Was the number of sub-units/activities too great for the term/time available? Was there enough time for

- topographic maps/atlas work
- animal welfare
- Easter Island
- Mt. Macedon?

Does the suggested new lattice more realistically reflect the requirements?

Were the resources adequate for each sub unit?

What else do we need for next year?

Did we cover what we intended with regard to

- Essential questions?
- Concepts
- Standards?

Should the introductory work on maps be more firmly integrated into the other sub-units?

Did we cover the habits of mind activities appropriately?

Was the assessment task appropriate? How well did the rubric work?

What student feedback have we had? Should we collect more student feedback? If so, how?

What do you think of the electronic version of the unit that has been developed? Did you find it useful?”

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<tr>
<th>Positives</th>
<th>Minuses</th>
<th>Interesting</th>
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(Case study 2006)
Leading Schools Fund
developments 2006 and plans for 2007

“The LSF discussions for 2007 have been continuing with extensive questions and issues raised at a fairly tough staff meeting presentation last week. Concerns with regard to the proposal were raised including disruption to student learning due to block time release, the loss of anticipated time allowances, the nature of the coaching program and the selection of the coaches.

The program proposed to staff included:

1. A system of class coaching will operate

2. Professional development will be provided and

3. Time release for KLA curriculum development in teams”  (Case study, 2006)

In 2007 the LSF program was substantially changed. Learning coaches were introduced and a wider audience targeted for substantial professional development. This would allow us to maximise the group moving towards the vision and being supported through the transgression. Widening the targeted audience for our professional development would increase the chances of the work becoming sustainable.

2006 was a year in which support from the Leading Schools Fund allowed me to help lead a team of staff reviewing and developing curriculum and also exploring approaches to personalising that curriculum. I participated in a wide range of professional development that supported these processes. The challenge at the end of the year was to broaden the understanding of personalisation and differentiation across a wider staff base and to set up practices that could become sustainable. After extensive discussions this led to a coaching program being implemented with a set of clear milestones and in time, to a curriculum development handbook. Eventually a more systematic and rigorous approach to curriculum design, based on the holistic curriculum model I had developed and the planning templates we trialled in the LSF program, would be implemented across the school. This would embed the milestones we had developed along with many other elements of the transgression. The curriculum being developed would be in line with the new environment required and would exhibit many characteristics of 21st century curriculum design.
Case Study – 2007 “A transgression with more voices at work”

2007 turned out to be a very important year for me, as I spent considerable time with staff, embedding key elements of the transgression. As the LSF coaches worked closely with staff, I further identified and refined my own living curriculum theory. I was developing materials that would later emerge within our formal curriculum documentation handbook at the beginning of 2008. We were trialling and refining tools and models for curriculum development and alongside that exploring the values that underpin our practice. At the same time we were implementing the newly designed year 7 curriculum that better reflected my developing living curriculum theory.

Lattice and Values Questions

“It was and still is important to reflect on the values underpinning the lattice as part of developing my personal theory. These values have impacted upon the nature of the lattice and how I structured it. This extract identified the thinking curriculum as a driving force within the lattice and discussed the nature of the curriculum being developed.

What are the values I am questioning and that underpin my definition of curriculum? All students can learn but learn in different ways. All have the right to learn. All students need to learn how to learn. Curriculum is not a set of subjects. Much curriculum is non-discipline based. Discipline and non-discipline knowledge and skills are equally valuable. How do we assess non-discipline domains? How do we report on them? Learning to think is paramount in importance. Curriculum is interconnected but all too often fragmented. Concepts and skills are more important than content. Outcomes and assessment need to
test concepts/skills and content but emphasise the former. Everybody has the right to be assessed at different levels of thinking. Habits of mind are important for all subjects and in life. Students have the responsibility to take control of their own learning and teachers to increasingly delegate responsibility to them. I value ICT skills for visualising thinking, collecting and researching information and for presenting ideas. It is important for all students to communicate effectively. Students need to learn and to be taught to work both independently and in groups. Some content is important and essential.

The lattice summarises the essential questions, concepts and skills expected to be covered throughout the unit. It lists the assessment tasks (products/presentations) to be completed. It specifies the outcomes in each of the VELS domains to be covered within the unit. However, it does describe in more detail some of the thinking curriculum key elements including habits of mind, multiple intelligences covered for presentation, process and product, and levels of thinking to ensure that each of these is clearly specified.

**The lattice and evaluation.**

When a unit/sub-unit is completed I then return to the lattice to see if I have achieved what I set out to achieve. This can also occur against the assessment rubric to see what outcomes the students themselves have achieved formally. I have done this for the Mt. Macedon sub-unit at year 7 in 2006 and colour coded each outcome that we achieved through the 3 week part of the unit. The other parts of the unit then needed to be checked against the lattice to see if we achieved all of the planned outcomes. This becomes part of my action research (learning) cycle. Each of the outcomes in the lattice I have valued and hence should be covered. If not, why not? With the year 7 curriculum we have noted a propensity to plan to cover too much. This may be a problem of a team developing separate components and making sure there are plenty of activities/resources for all of us. If I am developing curriculum on my own I have not noted the same problem or at least not to the same extent. **Values** impact at all stages of the action research (learning) cycle. The values are imparted through the lattice at the planning stage. My values impact on how I implement my curriculum and the lattice. My values will also impact on the process of observation and the types of comments I make. They will factor into my reflections and impact on how I modify my curriculum.
Values are in fact critical throughout the process and I will constantly be questioning them.” (Case study, 2007)

**Leading Schools Fund (LSF)**

In 2007 the LSF program was re-structured and a set of new milestones was developed for accountability purposes. (See figure 47). The milestones were derived from the underpinning personalisation gateways. These milestones gave the work a much clearer focus, they allowed us to carefully plan professional development, and were aligned with our developing vision. As a strategy for guiding innovation work and eventually establishing sustainable processes, embedding these milestones in our policies and practices was critical.

“The LSF support is around the 4 gateways of David Hargreaves that we started working towards last year. These are assessment for learning (A4L), Learning to learn (L2L), ICT use and differentiation of the curriculum. We have finalised a number of goals and milestones with regard to these 4 gateways and these are shown below. This year we are working with staff across maths/science, Language Other Than English (LOTE) and Integrated studies at years 7 and 8. More than 20 staff are involved in the program so we plan to have a wider impact than we did in 2006.” (Case study, 2007)
## LSF Personalising Learning Milestones2007

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Milestones</th>
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<tbody>
<tr>
<td>Teachers will use a range of strategies eg pre-testing and other methods</td>
<td>Teachers will have documented evidence of pre and post testing data showing improved student outcomes.</td>
</tr>
<tr>
<td>designed to collect baseline data on knowledge and skills before beginning</td>
<td>(Differentiation and Assessment)</td>
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<tr>
<td>a new topic.</td>
<td></td>
</tr>
<tr>
<td>Curriculum designed to cater for the range of abilities of all students</td>
<td>Documented curriculum for at least one unit or topic that incorporates 3 activities that cater for the range of abilities in your class and</td>
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<td>in the class.</td>
<td>is linked to the VELS progression points for the appropriate level.</td>
</tr>
<tr>
<td>Staff will collect and share data to identify their students preferred</td>
<td>Appropriate staff will complete and share their section of the SMART (Specific, Measurable, Achievable, Realistic, Timely) goals package.</td>
</tr>
<tr>
<td>learning styles, strengths and weakness.</td>
<td>(Learning to Learn)</td>
</tr>
<tr>
<td>Teachers will develop tasks to cater for different learning styles and M.I.’s.</td>
<td>At least 3 documented activities using an MI grid and 3 activities that reflect different learning styles.</td>
</tr>
<tr>
<td>To provide a learning environment that is conducive to cooperative and</td>
<td>(Learning to Learn, Differentiation)</td>
</tr>
<tr>
<td>collaborative work.</td>
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<tr>
<td>Habits of Mind (HoM) will be integrated into student’s work.</td>
<td>3 activities developed which incorporate HoM.</td>
</tr>
<tr>
<td>Staff will have a shared understanding of the different forms and purposes</td>
<td>Staff will have documented evidence of activities designed to show assessment ‘for’, ‘as’ and ‘of’ learning.</td>
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<tr>
<td>of assessment and use these in their classroom.</td>
<td>(Assessment)</td>
</tr>
<tr>
<td>Each assessment task will be accompanied by a rubric used for student,</td>
<td>Staff will develop a rubric for each assessment task and have evidence of peer and self assessment.</td>
</tr>
<tr>
<td>self and peer assessment.</td>
<td>(Assessment and ICT))</td>
</tr>
<tr>
<td>Teachers will provide the opportunity for students to use ICT to visualise</td>
<td>Staff will have evidence of students using ICT to visualise their thinking eg use Inspiration for a Mind Map in at least 3 activities.</td>
</tr>
<tr>
<td>their thinking.</td>
<td>(ICT and Learning to Learn)</td>
</tr>
<tr>
<td>Staff will provide the opportunity for students to develop and maintain</td>
<td>Every student will use ICT to develop and maintain their own ‘Learning Journey’ as a record of their learning.</td>
</tr>
<tr>
<td>their own ‘Learning Journey’</td>
<td>(Learning to Learn, ICT, Assessment, Differentiation)</td>
</tr>
<tr>
<td>Staff will explicitly teach the use of a range of thinking tools and</td>
<td>Staff will have evidence of students using a range of thinking tools and organisers in classroom activities and assessment tasks.</td>
</tr>
<tr>
<td>organisers using ICT where appropriate.</td>
<td>(Learning to Learn)</td>
</tr>
<tr>
<td>Teachers make regular if ICT in their teaching and student learning.</td>
<td>Teachers will develop 3 activities which incorporate ICT for a range of purposes, such as the delivery of a lesson, student activities</td>
</tr>
<tr>
<td></td>
<td>or communication of ideas.</td>
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</tbody>
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Figure 47 LSF Personalising Learning Milestones (developed by LSF team)
Vision Building and the Futures workshop 2007

“At the first staff meeting the Principal spent a fair amount of time spelling out the tasks for the year and emphasising student learning environment. She started with the question, what do we want youngsters to learn and how do we prepare them for the future world. This focused staff on the idea of a developing vision and this is a major theme for the year. We are developing our 4 year strategic plan and hence need to have a clearer idea of where we are heading. What types of learners do we want to create at the school? What skills, behaviours and dispositions do we want in our students? This all relates to our vision of the future and the values we want to develop. What does this vision mean for our classrooms, practice, curriculum and the organisation of the school? ... It needs to be agreed and coherent and will identify our expectations. It needs to be as concrete as possible and cover pedagogy, curriculum, meetings etc. I find much of what the principal said reflects my position and what I have been saying for a while so I am pleased to hear the message clearly stated. The process of developing and documenting this vision will take up a lot of time and energy this year.” (Case study, 2007)

During 2007 we returned a number of times to the idea of our developing vision. This began early in the year and impacted upon my work across the school. These discussions were wide ranging and covered key elements of schooling including pedagogy and curriculum. These discussions were important as a strategy in gaining both awareness of and commitment to our direction and vision.

There are many drivers to change operating within schools and in figure 42 (page 168) and the following excerpt I have listed many of those that were impacting directly upon us. The need to embed and sustain innovations that had been introduced over recent years was an important consideration. The desire to move towards our emerging vision was also important. The drivers and the number of them, also reflect the complexity of curriculum design in this changing environment and time. Figure 48 (page 192) also summarised this process as well as showing how and when our values impacted upon our work.

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Curriculum Construction in 7 and 8 teams

“Last Key Learning Area (KLA) teams day we spent some time starting the planning for the ancient civilisations unit. I spent some time this weekend considering why we are changing this unit, why it keeps on evolving. Some important drivers that impact on our planning include:

- VELS – need to be compliant with the history domain
- Our school mapping process and components/ingredients
- The desire to “improve”, whatever that might mean, higher expectations
- To improve our pedagogy as well as curriculum documentation and content
- The desire to consolidate and refine work
- The formal requirement to document curriculum at the school
- To develop a single/common version, electronic and in hard copy
- Because we have gone our own ways over the years. The Ancient Rivers Civilisations unit became Ancient Civilisations for some of us. I had differentiated my unit as part of my course at Harvard and tried to cater for differing MIs and Learning styles. Other differences had emerged due to teams work as part of the middle years teams processes
- The results of the audit that showed the need to further develop aspects of the history domain and some of the non-discipline domains such as thinking, ICT etc
- The impact of habits of mind and the need to incorporate them into our planning
- The use of essential questions and goals as part of our curriculum planning process
- The drive to develop a common assessment task and rubric
- The impact of the LSF milestones – eg. rubrics, differentiations, use of MIs
- The need to test for pre-knowledge and use/cater for different MIs
- The improved curriculum design understanding of the team
- The focus on collaborative construction of curriculum rather than individual. Our developing individual and common visions of this unit” (Case study, 2007).
“In what way do our values impact on this thinking process? How do our values impact on the drivers I have listed above? In what way does the model we are using to develop curriculum shape its structure and components? Each year we grow our curriculum responding to old and new drivers for improvement. We aim to make it better, a higher quality and one that better meets the needs of our students and the school. We have ingredients we are expected to include within each unit and LSF milestones to meet at year 7 and 8. We don’t have the pressure of external exams like my VCE curriculum but there are still lots of pressures to improve.” (Case study, 2008). See figure 48.

Figure 48 also explores a relationship between the ongoing action research/learning cycle I have been using and the role played by values. As I question the quality of my curriculum work in an on-going process, values play a part at the different stages of the cycle. Key drivers of change and improvement have been identified at the planning stage within the diagram. The diagram shows the complexity of the process and the many different inputs and considerations. The values held impact at each stage in the decisions we make.

Figure 48 Values, action research version 2

34 In figure 48 a number of acronyms have been used in the drivers list. These included VELS (Victorian Essential Learning Standards), UBD (Understanding by Design), TFU (Teaching for Understanding), DOL (Dimensions of Learning), PD (Professional Development) and TSP (Teacher Support Program). Each of these impacted in some way to drive improvement in our own processes at the school.
Curriculum Metaphors
“Permaculture”
April 9th 2007

“Before I started typing I was considering the new vegetable garden I have been putting together. I have been reading about permaculture design yet still use some more traditional elements with rows of vegetables because of the shape of my raised beds. It is like my classroom where rows are more often than not the design for seating. (This is due to the physical constraints, other teachers using the room, the type of desks.) My classroom has significant traditional elements with an overlay of newer pedagogies. It is a blend of practices reflecting my action research thoughts and readings. I am learning everyday as I am in my sustainable garden. My practices in both places need to be sustainable. I have to be able to manage my classroom given my everyday constraints......

The greater the diversity the greater the stability is a common expression used when discussing ecosystems and their successful functioning. How do we attain this diversity in classrooms? For me diversity might include diversity of teaching strategies. Diversity of aims covering an holistic approach, a diversity of teaching styles and learning styles, a diversity of multiple intelligences being developed, used for presenting information and for assessment. The three Ps of presentation, process and performance and/or product are important within the curriculum planning process. I include these 3 Ps within the lattice framework deliberately to encourage diversity of approach, to help cater for individual differences and as part of my approach to differentiation of the curriculum. Diversity in a

“I have also been considering the nature of the term permaculture. Breaking it down one could regard it as permanent culture but it is a culture of sustainable growth. This is what is needed in the classroom a culture of permanent ongoing learning for both students and teachers. ... How do we design curriculum that encourages growth for all? ... The demands on teachers are so high that they are becoming overwhelmed and this is a danger we need to avoid. What permanent practices can we encourage? What protocols need to be set up? How can we ensure that the practices that emerge from ongoing learning are the sustainable ones we believe should be occurring? (Case study, 2007)

Figure 49 (page 195) summarises some key permaculture principles and practices that address some of the issues I have raised in these questions.
permaculture setting is essential. A diversity of plants is used within a diverse range of ecologic niches. Each plant’s growth is maximised by use of this approach. One needs to get to know the plants of the landscape that you want to develop in the same way one gets to know each individual within the classroom. Designing curriculum to reflect this diversity is essential. Differentiation of the curriculum involves an awareness of students’ interests, abilities and readiness.... Experience of past curriculum is valued and then acts as an input into the new curriculum. We are led by VELS to our key topics such as ancient civilisations but then develop our curriculum in the context of the standards for the disciplines and the other non discipline domains we have selected as being important.” (Case study, 2007)

In figure 49 I have explored this concept of a curriculum permaculture more fully, starting with the permaculture work of Rosemary Morrow (2006). Morrow identifies some key characteristics and principles for permaculture. I have identified and located these in the inner part of my diagram, and then gone on to identify how this characteristic potentially contributes to the development of a curriculum permaculture concept. I have identified how each characteristic or principle applies in the curriculum context. This curriculum permaculture is an important component of my living curriculum theory of practice. A curriculum permaculture also represents the type of curriculum that could be introduced as the transgression finishes. It is a form of curriculum relevant to the new educational environment of the 21st century.
The learning Lattice and curriculum design 2007

The learning lattice helps to document this process but also shapes the directions and components of the curriculum by ensuring that we check that each of the key elements is included within our planning. In this way we ensure that several habits of mind are identified as important for that unit and we also ensure that a range of MI s are covered over the course of the unit. Different aspects of thinking and different levels are identified and covered within the unit planning. ... It is an effective tool for integrating the various domains described within VELS in clearly identified cells to ensure that the holistic approach underlying VELS is being implemented. Synthesising these elements to create a manageable curriculum is a complex, ongoing –
growing- and challenging task. The curriculum that is emerging from our collaborative efforts reflects this complex process. The documentation is the most thorough I have seen in 28 years of teaching. It is detailed, caters for a wider range of students than our traditional teacher centred curriculum and is entirely more holistic. It is a more integrated curriculum in many ways than our older curriculum that integrated a number of disciplines at times but did not cover the other domains as effectively.....

Each cycle of curriculum design sees us as a group working to improve our curriculum and also cover the increasing expectations identified in our curriculum mapping activities and the model represented by the learning lattice. We are as teams developing more and more complex curriculum refining it each term cycle as we move from unit to unit... In each team the lattice is being used for the documentation and to help plan and structure the developing curriculum. ..... We are expected to produce curriculum that meets the demands of VELS and includes the ingredients expected of all units from 7 to 10.” (Case study, 2007)

My classroom too is a blend of the past the present and my visions and efforts for the future. ...Why is my classroom a blend of my craft and readings? It represents my best practice at that point in time. But what makes it best practice? Sometimes it is an experience of success. This is obviously one of the things I value. I want my students to succeed. I want them to develop skills, to become better thinkers, to develop the 16 habits of mind that Art Costa discusses.”(Case study, 2007)

**Developing Theory: curriculum construction 2007**

Saturday 14th April

“What is it I want my year 8 students to develop? The initial answer is the different outcomes contained within the lattice. I want students to develop the skills represented by the VELS standards. I want them to develop habits of mind, thinking skills, different levels of skills, interpersonal skills, personal skills, metacognitive skills, ICT skills etc. These are the varied domains of VELS covering the 3 strands around which the domains of the VELS curriculum are constructed. My belief is that each of these strands is important.
Traditionally the discipline strand and each of the domains within it have been the basis for curriculum construction. For me this is not enough. My approach is that curriculum must be more holistic.

What does this mean for me? It means that whenever curriculum is constructed we need to consider each of the 3 VELS strands and the relevant non-discipline domains must be included. Learning is much more than the disciplines whether it is at year 7 or year 12. My view of learners means that they must become independent, metacognitive, reflective learners that use the habits of mind as and when needed and are continuously developing them. An holistic curriculum for me integrates knowledge and skills without discriminating or excluding different VELS domains. Knowledge is not a large number of discrete separate subjects with definite boundaries. Environmental science and geography are both great examples as they use knowledge and skills from a wide range of traditional disciplines under the one subject umbrella. In teaching an issue such as the enhanced greenhouse effect it is important to draw upon traditional discipline and content areas such as atmospheric chemistry, oceanography, atmospheric heat balance and physics, economic growth, geographic distribution, movement and spatial interaction, the history of the industrial revolution, political processes at a range of scales, ice core geochronology, mathematical...

“...To understand the world around me I need to have a perspective that reflects the complexity of life. An holistic view of the world that holds equally for me in the garden or in my classroom. I value this view because it reflects my reality. I see the world as a complex series of interacting systems from those operating at a very small scale to the global one. I want students to understand this view of the interconnectedness of life and knowledge. We are not isolated individuals but parts of families, teams, classes, peer groups, friendship networks, work networks etc. Holistic is about interconnectedness. Knowledge is interconnected and makes sense in the context of other knowledge. Everything is interconnected although we do not always understand those connections .......” (Case study, 2007)

Here I explored the nature of holistic curriculum and what it meant in my own Victorian Secondary context, but I also touch on its value for a the wider setting.
modelling etc. Each of these traditional fields/subjects contributes to an awareness and understanding of this issue and without these areas being linked together an holistic picture of the enhanced greenhouse effect and its consequences could not emerge.” (Case study, 2007)

**Holistic and Complex Curriculum 2007**

“ There are many interactions between the system in my garden and the surrounding systems. It is very much an open system with exchanges of both matter and energy with the surrounding environments. My classroom and the curriculum I develop is very much like this. I have one particular environment over which I have some control and influence. There are however, many processes and interactions occurring over which I have very limited or no control. It is a very complex system with many interactions that can disrupt best laid plans or the best curriculum that has been constructed. I hope to see products emerge from my classroom that reflect the goals I set out and the outcomes I have laid down within my learning lattice. The role of the assessment task or end product/presentation is critical here and the criteria established will define and shape the nature of the product that will emerge. This is why the assessment product is clearly identified within the lattice. It is central and follows the essential questions, key understandings and skills that I want to develop. The lattice asks that these are defined early in the curriculum construction process....

The term Holistic reflects the value of respect that I have for processes, skills and knowledge as all being important. All of these three are seen as being important and this reflects my view about the nature of the learners I want to develop and the curriculum I want to construct and teach. Much of my curriculum work is built around the desire for respect of self, others and the world around us. I start the year with this discussion as part of my classroom management system. I use the habit of mind – “listening with understanding and empathy” to start to build this value. Respect is an identified value for the school and one that I build through my classroom processes, modelling this in my teaching and focusing on this value through my selection of topics.” (Case study, 2007)
**Assessment, Criteria and Rubrics**

“Interesting teams meeting tonight with a difference of opinion with regard to the need for rubrics or criteria sheets to accompany and use for each assessment task.....I see rubrics as a very powerful instructional tool to ‘lift the bar’ for students to higher levels. Clear descriptors allow the student to monitor their progress as they work towards completing a task.

The results for my Mt. Macedon assessment task last year were excellent (half the class achieved an A – above expected level result) and I believe that the students used the rubrics for self assessment and peer assessment at the end of the task for their A of L activity but also by constantly referring to them they used them for A4L to help guide their learning. Tonight some staff believed that the criteria sheet alone was satisfactory as it allowed students to see the higher level and challenged them adequately. They could also then self assess at lower levels although it was agreed that this was somewhat more subjective. The school mapping document in fact states that all assessment tasks should be accompanied by a rubric ....” (Case study, 2007)

**Antarctic Unit Planning and Assessment**

“The rubric for this task will be used to guide the work of the students and help them record their progress. The students will both self assess using the rubric and assess one of their peers. Finally I will use the rubric for their grading. The rubric discussed here and shown in appendix D shows the extensive development of our understanding of the nature and characteristics of quality rubrics. They have come a long way since our earliest efforts. I have discussed in this extract the instructional and assessment uses of a rubric. Use of the rubrics helped students better understand the purpose of assessment.

Assessment is a critical component of curriculum design. Our work on assessment linked strongly into our improving practices of curriculum planning. At the same time, changes in assessment policies were invariably controversial. This extract identified some of the issues we faced as we changed policies, practices and expectations with regard to assessment.
specifies a number of thinking tools, targets particular habits of mind, focuses on the EQs and concepts as well as specific content guidelines. It shapes the presentation of the data and also asks them to keep a record of their references for a bibliography. It asks them to reflect on their learning using the rubric as a guide and write up this reflection in their learning log at the end of the activity. This is the stage of assessment as learning that is often overlooked and to my mind is essential for embedding their learning and forcing this reflection process to build their metacognitive skills. It is important to me that this rubric covers much more than the content of the unit. The rubric guides the teaching and learning of much of the unit. It therefore needs to cover the other non discipline domains that the unit is addressing. It clearly covers aspects of the thinking domain with the use of the habits of mind, the emphasis on reflection and metacognition, students will be communicating their responses for an audience and expressing themselves with clarity and precision. They will be assuming responsibility for their writing and recording their planning and work, setting their goals and working towards them and therefore working and achieving in the personal learning domain. They will have a choice of presentation formats which allows them to write and communicate more creatively. For example they may present in the form of an essay, a newspaper front page or a management plan, this is an aspect of differentiation that I like to include where possible within unit design. They will be using ICT for a variety of purposes during the task including planning, writing, developing ideas, showing thinking and representing data. They also work collaboratively during the conference stage of this activity and their work here can be monitored and observations used when assessing the interpersonal domain.” (Case study, 2007)

**The Learning Lattice and Complexity Theory**

“Today I also spent some time reading a number of the articles on complexity. A number of them have jumped out with relevant perspectives that I need to consider as I continue my thinking with regard to my own living educational

Complexity theory has had a significant impact upon my thinking. Chronologically this was when I first started to read about the theory. In the later part of this extract the impact of complexity upon curriculum design characteristics in the later school environment starts to appear. An understanding of its importance has already started to emerge in this text.
theory and the theory behind the lattice that I have developed as a framework for curriculum planning.

Morrison has written about complexity theory in schools and their leadership that
“Schools should be regarded as self-organising, complex, emergent, non-linear organisations, within which different forms of differentiation occur (horizontal [task division], vertical [layers of management], spatial [geographic location].” (Morrison, 2002)

I can clearly see elements of this quote occurring within the changing curriculum development paradigm that operates at my school. The emerging curriculum is increasingly complex as it develops. Its growth is non-linear and hopefully the product will be differentiated. The curriculum develops in/by teams operating in different physical locations. This can make it difficult to provide support for these processes as all the teams operate simultaneously and potential resource personnel are involved in their own teams. The newer processes of curriculum development are more collaborative where we share expertise and research resources both independently and in pairs.” (Case study, 2007)

**Complexity and curriculum development 2007**
Returning to my reading of the complexity articles one that I found particularly stimulating was that by Ton Jorg (2004) “Complexity Theory and the Reinvention of Reality of education”.

Learning through interaction becomes a kind of dynamic interweaving with evolution, involution and revolution as fundamentally time-dependent processes. (Vygotsky 1978) (Jorg 2004, p.121).
This quote on page 121 stood out for me as one for me to consider as I plan curriculum and see it as an interactive process, with many elements interacting together, and evolving or growing over time. ..revolution could represent the nature of the change when it is of a fairly dramatic character. In the article Jorg refers to interaction as a challenge and a problem as the complexity of interactions makes full understanding very difficult if not impossible.

Now is the time to reinvent reality: a reality which can be characterised by complexity i.e. of education with its focus on learning and development; a complexity which is inherently dynamic, indeterminate and unpredictable in its effects. A reality which Kiefer delineates as “composed of multiple-simultaneous, interdependent cause-effect relationships,” in terms of a dynamic complexity (in Senge, 1990, p.267)

This second quote challenges me to consider curriculum design and my personal living educational theory in terms of this perspective. I see the process of curriculum development as a complex and very dynamic one, despite attempting mapping and documenting curriculum, it is difficult to determine that all classes and curriculum presented across teams is consistent, as the act of teaching is such an interactive and dynamic process. It is difficult to predict exactly how the designed curriculum will be presented, operate and be assessed. There are many individual cause and effect relationships at work both within the theoretical design and the actual teaching process. When I initially designed the curriculum lattice I saw all of the elements interacting, dynamically together hence my initial gestalt diagrams.”(Case study, 2007) See figure 50.
In his article Jorg (2004) raises the challenge of how to bring complexity into the reality of our thinking about education, more specifically into the reality of our very practice of education, and its way of organizing that practice. We should make an end to colonizing that practice for purposes of theorizing about that practice (cf. Vygotsky, 1926/1997a), and start taking practice more seriously as a point of departure. (p.128)

This challenge is one that I have been taking up with my theory growing and emerging out of my own practice. It reflects my emerging living educational theory of a growing curriculum emerging complexly out of classroom practice. My view is one of the need for an holistic living theory that reflects the complex reality seen in classrooms and expected of all teachers in Victorian schools today. The situation described above of teachers dealing with a more complex assessment process than in the past is just one example of the greater complexity seen in education today and the need for more complex tools, models and understandings of curriculum than have existed in the past. The learning lattice and the thinking behind it of the need for a complex framework that draws together many of the elements of curriculum required by VELS and contained within other curriculum structures.
as the Victorian VCE. When I first developed the lattice we had in place CSF2 in Victoria and the lattice went well beyond the formal requirements of that curriculum design. It much more closely reflected some of the non-discipline domains of VELS that teachers are now starting to come to terms with. The many domains of VELS indeed reflect a much more complex model of curriculum thinking that demands more both formally and informally of teachers and students than the earlier CSF models did.

It is very true as Mathiasen (2003) stated, that you need complexity to deal with complexity. This is the only way to deal with complexity as it manifests itself in practice. So, in and for practice, “linear thinking may be dangerous in a non-linear complex reality (Maiszer, 2004, p. 204, in Jorg, p.129).

Jorg is making a number of relevant points for me as he is identifying the need for a complex model to describe processes and practices and hence the potential usefulness of a dynamic more holistic framework such as the lattice. At the same time he is highlighting the danger of linear descriptions, models and diagrams for processes and this is what I have been noting as my own graphics have become increasingly complex as I understand more of the processes and interactions that are occurring in assessment, collaborative curriculum design and curriculum construction and try to consider them in the graphics.

Education, now seems strongly in need of recognizing (emergent) complexity at work in practice and, even more, of the full understanding of such complexity. In our view it should lead to a ‘holistic anti-, or non-reductionist’ approach (see Vygotsky in Beilin 1996 p. 285; Bhaskar 1993, 2002; cf. Raven and Krohn, 2000, p.iii) (Jorg p.129).

Here Jorg .... seems very much in accord with my view of the importance and need for an holistic approach. This holistic approach should reflect the emerging understanding of the complexity of education as typified by the curriculum design process. Later on the same page he identifies the need for reflexivity during this process so that as teachers reflect on their work they make changes to incorporate greater elements of this complexity and this seems to be what is happening in our collaborative and individual processes. Each new iteration/cycle/unit leads to a more thorough understanding of the complex demands of the new curriculum. Hopefully by undertaking this research I am “stepping outside of the
system we are in”, and “taking a different view: a view from the outside” (Jorg 2004, p.129). (Case study, 2007)

**The habits and my Living Educational Theory 2007**

“In this journal I am exploring the values behind my curriculum development work and developing my own living educational theory. The habits of mind make an important contribution to my educational thinking as they reflect the dispositions that I want students to achieve. But they are also (some of?) my own educational values. Why do I constantly reflect on my teaching practice? …. Art Costa (presentation,2007) talked about the idea of ‘autoponder’ which seems to be a process I follow when I leave questions hanging because I don’t yet have answers and want to contemplate them and return to them. Developing curriculum means that these habits are constantly being used. They are in many ways driving my curriculum development. I am gathering data using all senses during the action research process as I monitor the performance of my students and try to continuously improve their understanding and work. Why do I want to improve my work from year to year, unit to unit and lesson to lesson? I want to build understanding from past knowledge to new and improved knowledge or curriculum units. It is because I want to find more humour and I want students to develop wonder and awe at the world around them, to ask questions and reflect on their learning. My curriculum improvement practices are driven by my valuing the habits and wanting to constantly improve. The habits of mind are transdisciplinary according to Art and should be infused like a tapestry within and across the curriculum. This again reflects my view of how knowledge and understanding should be developed and taught within a real world context.” (Case study, 2007)

**Habits of mind and the unit planning process**

“The unit planning process at Green Gully S.C. is sometimes an individual activity but more often a collaborative one involving a team of teachers. It is a time when the use of the habits of mind is very important. Teachers need to remain open to continuous learning, think flexibly and creatively, work interdependently and retain that sense of humour throughout the process. In our recent teams work there has been the opportunity to reflect
and share ideas and activities that have worked successfully and build a VELS\textsuperscript{35} compatible curriculum.

Our existing unit building process (see figure 51) starts with the current curriculum and either replaces the unit with an entirely new one depending upon VELS requirements or reconstructs an existing one. Once the topic is decided a brainstorming process is carried out by the team and a mind map of the potential unit is developed. In recent times we have been using the “Inspiration” software package to support this process. Key goals, content areas, possible questions, key skills, possible activities, relevant habits of mind and possible assessments are identified. The POLT\textsuperscript{36} may be considered at this early stage. At the end of this session or prior to the next one a set of draft essential questions are usually developed.

After this brainstorming session one of the team starts documenting this on a draft planning learning lattice. Draft Goals, essential questions, key concepts and skills are included on the lattice. VELS standards are examined to identify which discipline and non-discipline domains are covered within the unit. These are then documented within the lattice. Specific relevant habits of mind are identified ready to be taught although all of the habits are likely to be referred to within the unit when they can either be modelled or used appropriately. At the next team meeting this documentation is discussed, modified, refined and accepted by the group.

The next stage of the process is the clarification of the assessment task, products or presentations. Once agreed the major assessment task is further developed and a draft rubric will be developed. Within the rubric targeted habits of mind may be specifically assessed alongside the use of the habits of mind within the planning and reflection processes. Habits of mind are both part of the specific content and the process of learning.

\textsuperscript{35} VELS – the Victorian Essential Learning Standards
\textsuperscript{36} POLT – Principles of Learning and Teaching
Recently we have also started using a breakdown planner for the unit that lists a suggested sequence of learning activities. This breakdown planner supports the documentation of the unit in terms of where specific VELS domains and dimensions are addressed, where there is a specific focus on a habit of mind or when a particular multiple intelligence is being used. We also identify whether or not differentiation, assessment for learning or learning to learn strategies are being used as these are part of our LSF\textsuperscript{37} foci. With the most recent unit on Antarctica we have reached a point where we are hyperlinking each of these documents to each other and also the activities and resources to be taught. This hyperlinked unit then becomes available on the local area network. Within the breakdown planner modified activities are being included that reflect a step towards the differentiation of learning.”(Case study, 2007)

\textbf{Figure 51 Habits of Mind and the Unit Planning process}

\textsuperscript{37} LSF – Leading Schools Fund
“The use of the habits of mind is modelled whenever possible within the teaching of the unit and they remain both a focus of the unit (through the targeted habits of mind) and are used within the processes and activities of learning within the units. Many of our units include a research/inquiry component and for this I require students to monitor their individual use of the habits of mind through a research diary that I update for each unit. This asks students to identify habits they use and how they use particular habits during the research process. When the student completes their self assessment on the rubric they are also required to write an overall reflection about their use of the habits of mind and how this could have been improved. This is a valuable component of the assessment as learning process. The nature of the process I have described shows the value that can be placed on the habits of mind. They represent underpinning behaviours that we wish to develop in students across the curriculum.” (Case study, 2007)
Figure 52 Habits of Mind and the Curriculum Design Process
Curriculum design 2007

“The Goals for the Day for this time release:

- Focus is on a unit plan for term 4 rather than PD
- To complete a mind map for the unit in term 4
- To embed the milestones where possible within the units
- To initiate a lattice for the unit
- To start a breakdown planner for the unit.

The support staff saw the session as a day to ensure that the milestones were embedded within the day and monitored them and identified opportunities to include them as the session progressed..... The team composition has varied at times due to other staff commitments but information has been shared regularly through email contact. Indeed one group member was absent ill during the scheduled time release and checked in during the session by phone and email as well as contributing materials through a range of attachments that were forwarded to myself. This sharing of resources and ideas has been a strength of the collaborative process and one that definitely leads to a better end product in terms of the range of ideas, resources and differentiation strategies that are produced...... Greater use of technology, varied habits of mind activities, a range of differentiation processes, varied assessment products, strategies for working with students on modified programs, ideas for A4L, cooperative learning, differing MIs etc are all being proposed. The wealth of ideas and activities will indeed make it hard/difficult to complete all the suggested activities in the time available. This will allow individual staff and different student groups the opportunity to negotiate some content variations depending upon interest, readiness and abilities.” (Case study, 2007)
I.S. Draft Breakdown Planner

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Discipline strand</th>
<th>Interdisciplinary strand</th>
<th>Physical and personal and social strand</th>
<th>Personalising Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence Of Activities and Questions</td>
<td>Number of lessons</td>
<td>Geography</td>
<td>History</td>
<td>Economics</td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
<td>Geog knowledge</td>
<td>Geospatial skills</td>
<td>Historic knowledge</td>
</tr>
<tr>
<td>EQ1. What are the issues/risks that affect youth today?</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Figure 53 Sample Breakdown Planner

“...I have included above the working draft for the breakdown planner (figure 53) which shows the basic structure of the unit and the sequencing for its practical implementation. With the last unit completed on Antarctica I have hyperlinked the breakdown..."
planner to the learning lattice, the unit mind map (Figure 54) and the varied activities listed in the teaching sequence. This allows a new staff member as well as all current ones, complete access to the resources we develop as well as the overview of the unit, the resources required and the VELS standards addressed. It reflects the holistic nature of the curriculum taught as we did address several different domains apart from the discipline one of geography. New resources may also be added at any stage, or eliminated as required. Over time the curriculum developed will grow providing more diverse activities for staff or refining activities, rubrics or assessment products once they have been trialled. In this way the curriculum is alive and growing. Curriculum was not seen as static by the group but one that would develop and grow. Each year aspects would be added or replaced.” (Case study, 2007)
Figure 54 Sample planning mind map for Antarctic unit
Curriculum Design process at year 8

“This term I am planning to share some of the work of this group at an education department forum on building student learning capacity. I will share the lattices, breakdown planner and unit construction process with the forum as I described it last month. Hopefully I will also share the way we have hyperlinked these planning documents to each other and also the learning activities within the Antarctic unit.” (2007 Case study)

“I have also been theorising around the nature of curriculum design and whether or not it can be considered to be both an art and a science. The following diagram illustrates my thinking and the characteristics that make curriculum design both an art and science.” (Case study, 2007)

These 2 extracts from my case study document different aspects of my work. The first describes an opportunity to share and discuss my curriculum work with a wider audience. The second explored the idea of curriculum design as both an art and a science and identified characteristics that fit under these particular headings. (See figure 55) From this thinking was to emerge the characteristics of curriculum design for the 21st century that I detail later.

Figure 55 Curriculum design as art and science
**Curriculum Planning and the LSF Milestones**

“Last week the school decided to support an application for a curriculum innovations award based around the work of the LSF teacher Support Program and our processes for supporting staff in personalising the curriculum. When I heard of this I constructed a flow chart to document the ways in which our work with the milestones supports the planning process we have developed and now plan to share more widely across our own school Key Learning Areas. (See Figure 56). The milestones included on the graphic represent our key objectives for the year. Including them within the planning process can lead to the embedding of the innovation within an ongoing process. This can set up a process for the sustainability of this innovation and overcome a constraint that commonly exists with innovations in education.” (Case study, 2007)

Figure 56 summarised our activities as coaches within the teacher support program and demonstrated how our work in the teacher support program could be made sustainable. Past experiences had shown that innovations temporarily supported by funding could dissipate once the funding was removed. By integrating the LSF milestones into our on-going curriculum documentation processes we could ensure that the work did not stop once funding ceased. These milestones represent important elements of the new paradigm operating in the school.

Figure 56 identified the sequenced curriculum planning stages, the role of the teacher support program at each stage (shown in green) and when and where the milestones could each be embedded within the process (shown in yellow). By embedding the milestones they could still be achieved once the funding for the teacher support program had been withdrawn.
Figure 56: Curriculum Planning and the personalisation Milestones
“One of the questions that the principal asked in her recent feedback related to the degree of take up of these planning innovations at the school. Most of the work of the Teacher Support Program has been focused on year 8 IS, LOTE (Language Other Than English) and Science this year and certainly aspects of the process shown above have been covered by all three KLAs (Key Learning Areas) but to different degrees. The closest to the full process described is the work of the humanities KLA in its 2 teams at year 7 and 8. Other humanities subjects have taken up aspects of the process but not necessarily all of it. Teams work collaboratively most commonly in the junior school. In the middle and senior school there are fewer staff teaching the subjects and more individual planning occurs. The science KLA has used the inspiration stage to help develop curriculum and provide an overview of the course but have documented their curriculum in a slightly different fashion with differing planners and documents more closely related to an earlier linear model the Principal developed and also making great use of a new text which is closely VELS compliant. LOTE staff do not work as much with units but are starting to use the planners. The department that has taken up the planning structure and documentation process most similar appears to be Technology with complete units hyperlinked together and using the lattice and breakdown planner in the way I had envisioned. This has occurred since I shared the planning process and planners with the LACs last term. We are now looking to further embed these processes by formalising them for the school at a forthcoming curriculum committee meeting.” (Case study, 2007)

"...However, on the same day I also team taught a session with my old IS class and in this one we decided to develop the criteria with the students rather than just have them use the
This was a great example of the personalising of the curriculum and the use of student voice in the field of assessment. Many of the characteristics we were looking for in our students were exhibited during this lesson.

one I had developed. This turned out to be a fascinating discussion as we started out looking at the nature and value of rubrics and it was exciting to hear what the student had to say. They discussed their value with regard to instructional learning as well as summative assessment. They talked about the value of the specific nature of the rubric descriptions and the way they are challenged to improve and do their best. It was very rewarding to see how much the group understood the nature of the rubrics and where they could take them. They also discussed their value for self and peer assessment and the use of the 2B4T strategy. After the general discussion we discussed the components of the rubric, possible criteria and key elements to monitor. After a brainstorm of this we arranged their ideas into groups and these became the core of the criteria. Students were then grouped randomly by using a letter system and each group was then allocated a criterion and started working on the very high descriptor. In the following lesson these were further refined and then brought together by the teacher. We monitored this discussion and added any particular elements we felt needed to be added to the discussion but in the main most points were raised by the students. I added in a couple of hints with regard to the development of the descriptor highlighting the need to be SMART with what was included – ie be Specific, use Measurable elements, ensure they were Achievable, Realistic and Timely. (This is the acronym we had used with the class through their goal setting practices earlier in the year and last year)” (Case study, 2007)

**Extending the curriculum development process 2007**

“Earlier in the year I developed a draft set of questions to accompany the curriculum planning process that I have been discussing. ...These questions are to assist in the curriculum planning process and are the ones I would be asking as I follow the curriculum planning flow chart.”(See appendix E) (Case study, 2007)
The detailed flow chart and the extensive set of questions (figures 57 and appendix E) eventually ended up in a staff handbook for curriculum design. (This was produced and distributed to all staff in 2008 and was based upon much of this work). They are a set of practical questions/processes that need to be considered in setting up any curriculum unit. As such they represent an important element in my educational theory on curriculum design. They represent an outcome of my reading on curriculum planning and my practical experiences in the classroom. When I left the school at the end of 2009 the flow chart and question set were being used across the school to support the process of curriculum design and the documentation of the curriculum. The key ingredients for each semester length curriculum unit are contained within this flow chart, (see figure 57). These ingredients were a list developed collaboratively by the curriculum committee at an earlier meeting. The ingredients increased the complexity of our curriculum planning, covering many of the non-discipline domains of VELS or other generic skills. They would over time ensure that we could teach, assess and report on the wider range of outcomes required by VELS. This flow chart along with the others developed in 2007 and 2008 are an integral part of my living curriculum theory. The flow charts are products of this research that identify and document key processes to follow when designing and developing curriculum for the 21st century.

The final important change for 2007 was to more formally incorporate values education into the curriculum, and to stress the importance of the habits of mind for the school in developing these values within our student community. Some of the later lattices also included specific values alongside key concepts for the units. 2007 had been an important year for developing our curriculum design processes and bringing together many of the key elements of the transgression. It was a year when, supported by the LSF, significant progress was made with integrating the milestones, across more curriculum areas and into the classrooms and pedagogy of more teachers and at more year levels. Continuing this process was a major focus for 2008.
Figure 57 The curriculum planning process
**Case Study - 2008**

2008 was the last year of formal data collection, although post-scripts of progress since then have been added at the end of this thesis. It was a year marking a later stage of the global transgression. I do not propose that the transgression is in fact complete but is in reality still occurring both at my school and around the world. By the end of 2008, significant changes had been introduced and were becoming embedded in our school practice. Important steps had been made towards implementation of key aspects of earlier visions. Changes in curriculum design processes and the documentation and implementation of VELS based curriculum were being put in place. Pedagogy was also changing as reflected in the wider work of the LSF coaches and the implementation of the LSF milestones, reflecting progress towards personalisation of the curriculum. A discussion of values again occurred that year and impacted upon our work. In 2008 I further explored and documented the nature of my own living curriculum theory, although some of this writing has been included in the next discussion chapter.

**January 17th**

“Over these holidays I have been working (at the request of the principal) on a document called **guidelines to curriculum development**.

..........This has been an opportunity to consolidate the work we have been doing and update it in the light of our LSF work. One of the new sections I have written for this document is included below.

These **guidelines to curriculum development** including the guiding principles are at the heart of my living curriculum theory and represent another critical event. Their purpose was to guide staff as they evaluated and developed curriculum at the school. The document was distributed to all staff at the beginning of the year. The principles reflected my many years of reading and practical curriculum design in the Victorian school context. They have been informed by the POLT (DET, 2005), Tomlinson (2000, 2006), Costa (2000, 2003) and many of the other authors referred to during this narrative. They have the potential to be generalised and applied in the wider educational setting.
Guiding Principles for Curriculum Development 2008

The curriculum offered and delivered at our school should be developed from the VELS and built upon the POLT. The curriculum should be

- reflecting and developing the values underlying our school vision
- built upon the 3 VELS strands and integrate the various domains within each topic or unit
- inclusive of skills and processes alongside content
- built upon essential questions, understandings and big ideas.
- engaging, meaningful and relevant
- built upon prior learning and prepare students for studies in later years
- flexible and personalised to meet the needs of each student
- documented, detailed and updated each year to provide the basis of a differentiated curriculum
- challenging for all students through high expectations
- assessed through both formative and summative assessment approaches and include A4L, AofL and AasL
- delivered through a range of teaching styles and use a range of learning styles
- considering all MI's in its construction for teaching, learning and assessment
- providing the broad context before the specific
- developing student understanding and use of the habits of mind
- preparing students for living and working in the 21st century.

.... I have developed these based upon the experiences of the team, my own readings (eg. Tomlinson, (2000), McTighe 2006, Hargreaves (2004) and reflections over the past couple of years. Another new section is on the actual process of curriculum development.” (Case study, 2008)

“Suggested steps in the curriculum development and documentation process 2008

1. Preliminary stage : Evaluation of existing curriculum, Check VELS standards, consider POLT
2. Finalise topics, themes or units
3. Team Brainstorm - Mind map results using Inspiration
4. include: Goals, Concepts, Skills, Values, Essential Questions, Key

This listing of the steps reflects the stages identified within the various flow charts I have constructed and included in this study. The steps demonstrate my understanding of the complexity of the curriculum construction process in/and for the 21st century. Although constructed in a specific context here in Victoria, this process and the sequencing could be generalised for use elsewhere.
Understandings, Big Ideas, Possible Assessments, Learning activities, Appropriate habits of mind

5. Identify relevant VELS standards to be addressed
6. Draft an initial Learning Lattice
7. Finalise Essential Questions and update Learning lattice in a team meeting
8. Develop Summative and Formative assessments
9. Develop Assessment Criteria and Rubrics
10. Incorporate differentiated activities into a detailed Breakdown Planner
11. Check breakdown planner and mind map against the Learning lattice to identify if all planned outcomes have been covered
12. Trial new unit, topic or theme
13. Evaluate and update documentation for the unit when completed.

This particular summary of the process that can be used, is the result again of our experiences in the LSF team and my own reflections.” (Case study, 2008)

“This process has been refined after discussions at curriculum committee, within the 2007 LSF team and after feedback from the cluster educator”. (Case study, 2008)

Feedback on curriculum principles
“I have now received some feedback on the curriculum principles .....The critical friends have raised a number of issues – for example with regard to the need for on-going reflection and use of an inquiry stance. The issue of evaluation of the actual product and the nature of this evaluation has also been raised. We evaluate in an ad hoc manner with some classes getting feedback in writing, others through discussion. We also use our own reflections on the unit to modify it the next time it is taught.” (Case study, 2008)

Values in the classroom
21/3/08
“Since ...last week I have been reflecting again on the values that underpin my work in the classroom and my curriculum design work. The desire to compete successfully with schools across the state has been mentioned above. This certainly underpins my VCE work. My students

This important extract discusses the underpinning values of my curriculum work and indeed of the school in more detail. I also describe important elements of the social context within which I have been working. The identified values relate to the disadvantaged community within which the school sits. Despite these disadvantages the school has been recognised in the Signposts research by Melbourne University (2009) as a high performing school.
are from a school regarded as being highly disadvantaged. It has been a recipient of
disadvantaged school funds in one form or another for many years, certainly my nearly 30
years at the school. It is sometimes regarded as and described as the “best kept secret in
the west”. There has been a core of teachers at the school for many years that have led to
reasonable levels of success, compared to like schools – in terms of socio-economic status.
The leadership team at the school are now all internal appointments that have come
through the school culture. Each of the principal class taught at the school for many years
prior to their leadership appointments.

So what values specifically underpin my work? I aim to provide students with life skills that
are appropriate for success in the 21st century. I believe in supporting them strongly to
achieve their goals. I am proud to support them on their journeys through the many
disadvantages they face. I want to give them access to success through a high quality
curriculum. Consequently I challenge myself to improve the curriculum from year to year. I
up-date the curriculum based upon my ongoing learning. I work to improve the quality of
my teaching by my reflective actions. There is a strong underlying commitment to social
justice for the students I teach. I have a commitment to ensure that they improve themselves
through raising their social standing and educational qualifications. I work to support their
increased educational performances.

Providing the best possible curriculum resources, differentiated to encourage access to
success for all is the goal. Hence my commitment to personalising the curriculum,
providing pathways to understanding for all students in our very diverse multi-cultural
setting. I believe in catering as well for each student ... as possible. I talk about grouped
individualisation here as it is impossible in our structure to provide an individual program
for all students. Maybe at some time in the future this will become more feasible with ILPs
for all and the supporting curriculum structure to allow more self paced education. We are
working on LAN based curriculum currently which will be transferred to a web based
system later this year and in time this may become part of a system wide curriculum being slowly developed.\(^{38}\)

One of the values I am discussing here is **equality**. Equality of opportunity to allow all students to overcome the many disadvantages that my students experience. Many of them live in poverty...the vast majority are from NESBs\(^{39}\) with many hearing another language spoken at home for some if not the majority of the time. Many are in single parent families and have pensioners supporting the family. Many do not have large collections of books at home although in more recent times the numbers of families with access to the internet at home has grown significantly. Education is the way to move out of their current situations. For the majority of families this will be the first generation in which a member of the family may complete tertiary training.

Some of the values that underpin the curriculum work are becoming more explicit and clearly stated within the curriculum documentation. Latest units developed through the learning lattice framework ask for values to be listed as a central component of the unit. Examples of this relate to our work on such units as Antarctica and the family. In these values such as **environmental sustainability and tolerance** are being clearly stated. These clearly represent the values of the teams that are developing the curriculum. Tolerance in a school recognised as the most cultural diverse in Victoria really demands that this value be clearly stated and addressed. In my VCE curriculum work the environmental sustainability value reappears through my selection of topics whereby an understanding of this term is critical to the topics.” (Case study, 2008)

**Values and the Lattice 2008**

An important question for me to consider was: by what values do I judge the lattice and the other elements of my living theory, as Whitehead and McNiff (2006, p.165) consider the potential role of values as “the living standards of judgement they use as they assess whether or not they have achieved their research purposes”.

\(^{38}\) The ultranet is now up and running in 2010  
\(^{39}\) Non- English Speaking Backgrounds
“The lattice is an holistic model of learning. It assists in the integrating of knowledge across disciplines and in the language of VELS the non discipline strands. It values the development and implementation of the thinking curriculum. It reflects my view of knowledge and its interdisciplinary nature. ..It reflects my position that the non-discipline strands are of equal importance to the discipline strand. The lattice also has at its core the use of essential and fertile questions that identify the key areas of knowledge that I/we want to develop. The personalising of learning emphasis in much of my work also aims to put the student at the centre of the classroom rather than the teacher, what value does this represent? The topics that we study are also part of a larger body of knowledge. These topics cannot be seen in isolation but are part of larger courses with particular goals. Hence my selection of unit topics in VCE Geography that clearly represent my own strong views on the need to have an understanding of the environment around us and the issues it faces in the lifetimes of the students I teach.

In 2007 I developed this list of possible values after a curriculum day session that revisited values we had listed in our vision and associated statements. Empathy, Challenge, Safety, Commitment, Supportiveness, Tolerance, Flexibility, High expectations, Passion, Cooperation, Collaboration, Excellence, Creativity, Innovativeness, Reflectivity, Metacognition, Equality and Risk taking

......These are the values that I believe are important and that drive our curriculum development. They are also the values that need to be built into our curriculum documents as they are values we want our students to develop over their time at the school. According to Whitehead and McNiff (2006, p.165) these values can hence be used to help test whether or not I am succeeding in my purpose. As I have written above I do believe that I am definitely working towards some of these values in a purposeful manner eg. high expectations, reflectivity, metacognition, challenge and equality. Progress towards others may not be as clear and needs to be considered more.” (2008 Case study)
Improving the curriculum
27/3/08

“I have been writing recently about the values that underlie our curriculum. Today I want to return to the nature of the curriculum that I try to develop. Jack Whitehead and Jean McNiff write about the questioning of values as the underlying driver and to some extent this is true. But I keep returning to the question of why am I not satisfied with the existing curriculum why do I want to continually improve it? This desire to improve is in many ways what makes the curriculum living, why it changes and evolves. Teaching in the 21st century one is constantly aware of new information on topics, of new strategies to teach, of new ways to engage students. The professional development available to teachers today and indeed needed by teachers today is enormous. I am learning at school, through formal and informal PDs at school, through my work in the TSP, through external PDs and

Both this extract and the next one consider the very important role of ICT in schools today. The transgression occurring today includes a rapidly increasing range of technological innovations that teachers can, and sometimes reluctantly, have to take up. This new environment requires extensive discussion with regard to appropriate protocols and expectations. For teachers have to come to terms with the issues, possibilities and opportunities posed by new learning technologies and an ICT platform such as the Victorian ultranet. New innovations need supportive professional development. As the living curriculum grows, so too does the requirement for ongoing quality professional development to support its successful implementation. There is an expectation in Victoria that in government schools each staff member will complete at least 20 hours of ICT PD each year. This is really a minimum level, as so many curriculum resources are available in an on-line format. Resources for all subjects are available on-line, both for use in and out of the classroom. The curriculum itself is often documented on-line. Assignments and assessments are available and often completed and resourced on-line. Greater access is available both in and out of schools. Teachers today have to plan, teach, assess and report using on-line environments and this expectation will increase. ICT is rapidly changing schools.
conferences, through online symposia and online conferences, and through studies, conversations and reflections. We are constantly learning and indeed need to keep learning. **Technology developments** in particular bring incredible opportunities for improved ways to engage students and communicate with them. Setting up a simple strategy like a blog for my VCE class increases access for both myself and my students enormously. Blogs provide the opportunity to communicate over the holidays such as now, to identify new video clips that students can watch, newspaper articles that they can read, to set up links to these sites for students to access directly. Indeed the opportunity here is considerable, but at the same time needs clear routines or protocols set up so that one retains one’s own life separate from the school, which could otherwise become too intrusive and lead to teacher burnout. ... The interactive whiteboards at school are another new tool with many exciting opportunities for teachers to make the whole process of learning much more interactive and hopefully engaging for students. Seizing these opportunities and the possibilities they breed for new curriculum developments helps drive the living curriculum process.” (2008 Case study)

**The Role of PD in developing Living Curriculum 2008**

“The new learning from **ongoing professional development** indeed helps to drive this living curriculum. As I develop my skills and understandings of differentiation I see more ways to support students and develop their understandings.....New understandings help me to improve the structures that I set up and the quality of the products I develop. Much of the latest PD is around technology use but there is also PD on assessment and reporting (new reporting software such as Markbook), PD on thinking skills, on literacy and on VELS to name but a few. Each of them drives improvements in parts of the curriculum process itself. There are internal and external drivers for development of the living curriculum.... The implementation of VELS, the release of VCE study designs both drive considerable curriculum change. VELS support materials and PDs, department teaching and learning newsletters, VCE conferences and curriculum papers all help to stimulate the growth of the living curriculum. On top of this are the conversations between members of teaching teams, about strategies tried by others, of observations of different groups, of feedback from students, our own reflections, our own learnings about the effectiveness of a strategy such as comparing (Marzano R et al, 2001 ) etc. These are some of the many drivers that exist to
grow the curriculum, to update it and to improve it in order to improve student outcomes. These improved student outcomes may be VCE study scores, the number of As on an assessment task, the greater understandings of a topic or essential question answer, greater use and understanding of the value of the habits of mind, better work management strategies, improved planning processes, improved metacognitive, ICT or communication skills etc....Indeed the learning lattice hopefully identifies a very wide range of domains, skills, concepts and understandings that will be achieved through the processes of teaching and learning outlined in the units that I/we teach.” (2008 Case study)

Flexible Learning Space Pedagogy: A Vision of learning 2008

“One of the components of the LSF that is still to be developed, in this our last year of the program, is the construction of our flexible learning space. We have decided at this stage that the classes going into this area will be essentially from year 9. One of the questions I have been raising for discussion at our TSP meetings is the need for planning of the use of this space and PD for the staff who will start using it in 2009. I have suggested that we send out some teams of teachers to visit and observe successful teaching occurring within these spaces prior to us planning any PD for staff.

As the curriculum has been growing and evolving so too has our understanding of pedagogy. To support the newer pedagogies of the 21st century, learning environments have also started to change. In recent years many millions of dollars have been invested in learning centres and new technologically richer environments are being built. Green Gully was part of this process and with the construction of new, more open spaces we discussed the forms of pedagogy best suited to this environment. Learning from the experiences of others was a valuable strategy.

This has led to me considering what types of questions we would like answered when we plan these visits and then to the type of teaching I/we envision occurring within this space.... So granted that we have potentially 4 teachers of the same subject in the space at the same time what would teaching in this space look like? How might it be different to
teaching and learning in 4 classes situated currently in the D wing? .......A list of possible questions: ..... I guess what I am really exploring is the concept of flexibility and how the space can, does and could support it and whether teachers see this as beneficial. (See appendix F for the questions)

What are these questions telling me about the flexible learning space pedagogy as I envision it? In exploring this question I have developed the next graphic. I will put this up for discussion at a forthcoming TSP meeting to see if what I envision is how others see the space being used or if my vision is very different. Much of what I have suggested in the flexible learning space already occurs in our standard size classrooms and the resources around them such as the library and the pods but will be much easier and to operate but will need time to plan and coordinate if we envision working in this type of manner.” (Case study, 2008)

Figure 58 provides a single page summary of many of the elements/characteristics of my/our vision of future pedagogy. As the new open spaces are designed differently they will have an impact upon the form of learning and teaching that occurs within them. This changing pedagogy makes demands upon staff to adjust their current practices. This leads to the requirement for professional development and the construction of protocols for the use of the space. The potential characteristics of the new pedagogy are identified within the mind map (figure 58) I have constructed. This mind map was shared with staff later in the professional development process, and assisted in the development of teaching practices and protocols. This graphic has more recently been used for discussions of pedagogy with many pre-service teachers. The pedagogy summarised in the diagram portrays characteristics of 21st century curriculum. It reflects the form of curriculum that can be planned using the learning lattice as the curriculum model.
Figure 58 Key Elements of a Flexible Learning Space Pedagogy
2008 saw significant changes in pedagogy within the school as the LSF coaching program reached its conclusion. By the end of the program in 2008 more than 50 staff had been involved either as coaches or participants across more than 5 Key Learning areas. This represented the majority of staff at the school and in particular most of the staff that taught in years 7-9. With each of these staff there was an increased understanding of the milestones we had set up as targets for the program.

Documentation of the new curriculum had become a priority and this would continue into 2009, supported by the handbook I had developed. By the end of that time a more rigorously documented curriculum existed across the school, with the key ingredients of the transgression as selected by my school, embedded. Learning lattices/breakdown planners existed for all subjects in years 7-10. Our vision was clearer and better understood. A pedagogy discussion was occurring that would lead to up-dated and improved teaching, learning and assessment policies in 2009. As our flexible learning space became available in 2009 the pedagogy framework I had constructed for our discussions would impact upon procedures, practices and protocols.

Here I finish the chronologic narrative that makes up the heart of my study. The story has of course continued as I have alluded to at various times during my commentary. I have continued my educational journey after 2008.

2009 was my final year at Green Gully and in 2010 I moved to teach pre-service teachers at a local university in the Western suburbs of Melbourne.

I have very briefly touched on some highlights of these next 2 years later in the thesis. In the following discussion chapter I return to my 3 goals as I analyse and summarise key aspects of my living curriculum theory of practice and its implementation, as has emerged during this thesis. Finally I go on to explore some of the issues of writing a narrative such as this, and identify what I have learnt from the experience.
Chapter 5 Analysis, discussion and some implications

Sow what, so what?

This study has been investigating the question - how does a participant agent encounter, develop and processes theory and ideas to develop curriculum in their role as teacher and curriculum leader during an educational transgression?

This question has led to three specific research goals which have been explored during the course of the narrative:

2. An insiders’ examination of the complex processes and practices involved in designing and implementing 21st century curriculum within an educational transgression.
3. A documentation, analysis and interpretation of the process involved in completing this narrative.

In this chapter I continue the analysis of data started during the narrative, as well as develop my findings and position with regard to the research question and the 3 goals. I summarise what I have learnt and share ideas that may have wider applications. I gave this chapter the sub-heading “sow what so what?” as I believe this chapter answers the questions “so what have I learnt” from my thinking and writing, alongside this is the idea of sowing seeds for the audience.

Each reader will take away different seed ideas, as practicing teachers, curriculum designers, academics or narrative writers. Each member of my audience will respond differently, with different resonances as they connect with ideas and/or methods.

Over the course of this study I wrote many thousands of words describing the changes occurring in my/school(s) during the transgression. A variety of themes emerged from that writing and will be addressed in this chapter. These included an insiders’ view of the complexity and characteristics of curriculum change in the 21st century, the growth of a living curriculum theory and the development
and implementation of an holistic model of curriculum termed the learning lattice. Strategies for successfully implementing and embedding curriculum change, the important role of a school vision, and finally the use and value of visuals and written narratives were other themes to emerge. I listed above my three research goals and earlier at the end of my introduction I listed some more specific intentions for this study. In the following section I discuss what I have learnt with regard to these before summarising my findings in the concluding chapter.

Change is ubiquitous, and stability and certainty are rare. Complexity theory is a theory of change, evolution, adaptation and development for survival. It breaks with simple successionist cause-and-effect models, linear predictability, and a reductionist approach to understanding phenomena, replacing them with organic, non-linear and holistic approaches respectively (Santonus 1998, p. 3), in which relations within interconnected networks are the order of the day (Youngblood 1997, p. 27; Wheatley 1999, p. 10). (in Morrison 2008, p. 20)

**Curriculum and theory**

**Goal 1: A description (and analysis) of my own evolving living curriculum educational theory (Whitehead 1989, 1993, McNiff and Whitehead, 2005).**

**Complexity and curriculum design**

My thesis is that in an increasingly complex, more demanding, ever changing and more interactive world, the process of curriculum design needs to reflect this, and be able to cope with this context. The characteristics and processes of curriculum design in the contemporary period hence need to change at the level of the interpreted and implemented curriculum. My research, within the practices of one school in Melbourne, reflects the changes occurring during an ‘educational transgression’. Schools are balancing on the ‘edge of chaos’ as they try to adapt to these changes. The processes and practices I have developed and trialled, and that I summarise in this chapter, reflect how I, as a teacher at the centre of this process, responded to and managed these changes in one specific context.
The original case study written as part of this thesis tells many stories that reflect the increasing complexity of the work completed by teachers. There are stories of curriculum design, curriculum change, pedagogy, new innovations, interactions with colleagues and future visions. What I have tried to do is to look at these stories and show how a teacher manages the rapid changes that are occurring within the educational transgression I have described. Other teachers could easily have responded in different ways. There is no single correct response. The living curriculum theory developed and presented represents my best thinking and understanding across this time. There has clearly been a strong and powerful interaction between change, theory and practice. The models and curriculum framework I have developed represent a way of managing these rapid changes in the interconnected world we now live in. The curriculum we design today needs a new set of design characteristics that allow teachers to cope with the increasing demands they face. It is these characteristics that make up the concepts that underpin my living curriculum theory and curriculum planning model.

The early part of the 21st century has been a time with a significant educational transgression. Many new ideas and innovations have entered schools both here in Victoria and around the world. In secondary schools the expectations of a teacher of a specific subject such as geography or science have changed significantly. Teachers are now seen as not only a teacher of their subject or discipline but also of many other areas/domains. Teachers are expected to prepare students for work in the 21st century, to develop a range of intelligences, to develop ICT and thinking skills, to help students learn to work together in teams, to manage their own learning etc. These increasingly complex demands to constantly improve performance, plan better, teach differently, assess and report across a wider range of outcomes have become formal elements of the changing school environment, and have impacted hugely on our approach to curriculum design, planning and implementation. Our whole philosophy of curriculum design has had to become more complicated, complex and most importantly holistic. With changing demands, both formal and informal, our curriculum design thinking has become more involved. The various models, templates and diagrams I have designed, trialled and evaluated during this study, reflect these changing expectations and the increasing complexity. Mine has been a story reflecting these increasing demands, showing how one teacher and his school, have designed curriculum to meet these demands that are faced increasingly by teachers around the world.
I have argued that over time there has been an educational transgression occurring, complete with many innovations that schools, including mine have been required/asked to implement, respond to or consider. This has led to an increasing complexity in curriculum planning and a number of other key aspects of schooling, as schools have tried to implement these innovations and new demands. Schools have rarely been told what to leave out of the curriculum or what is to be replaced by these new expectations, pedagogies or demands. Hence they have tried to incorporate more and more into their already crowded curriculums. Consequently the author, working in his school context, has developed curriculum models, templates and processes that have become increasingly complex over time to incorporate as many of the new expectations as possible. These models and planning processes have also had to become more adaptive, flexible and holistic. The growing understanding of the need to produce a more process focused curriculum, rather than a more content focused one, has paralleled these other trends to greater complexity. There has also been a trend for the curriculum developed to become more personalised and differentiated, as we have recognised student voice as an important input, and attempted to increase student engagement. This again increases the need for more complex programs to operate, and a greater need for complexity in curriculum design to cater for these needs. The personal theorising reflected in the living curriculum theory, developed by the author, has also had to increase in its complexity, reflecting the holistic approach required to meet the competing and increasing demands upon a secondary teacher.

Figure 59 is an attempt to further refine the relationship between change, curriculum theory and practice. This relationship is shown as a series of threads interacting irregularly over time. My living curriculum theory emerges from these interactions. Over time there are increases in complexity, increasing demands and interconnectivity. Teachers are now more actively involved in networking, and consequently the very rapid communication of ideas can occur. Ideas from around the world are now discussed, shared and impacting quickly upon schools. Professional development programs may involve participants from many countries and this increases the sharing and spread of ideas. The curriculum at Green Gully and the processes for developing curriculum have emerged after discussions within the school, but also from schools and educators around the globe, both face to face and through the use of ICT. This creates even more demands to embrace ‘best practice’ and new ideas. Theory and practice interact with these new ideas and a synthesised up-dated theory and practice emerges.
In this section I explore the important relationship between practice and theory that emerges in this type of research, through discussion of an article by Richard Winter (1998). Although dealing specifically with action research, much of what Winter wrote can be equally applied to this form of narrative inquiry, and consequently to my own developing and emerging living curriculum theory.

“Firstly, I intend to take 'theory' to be a mode of understanding which has some degree of generality”. (Winter 1998, p.27)
“Secondly, 'theory' is derived from a Greek word meaning 'spectator', and so another meaning of theory is to do with 'speculative' explanations, conjectures or hypotheses which do not (or not yet) have a tightly established connection with observable facts.” (Winter 1998, p.27)

“Putting these two points together, I'd like to begin, then by defining 'theory' as: speculative play with possible general explanations of what we experience and observe.” (Winter 1998, p.27)

In this article Winter is looking at the process of developing theory, starting from known definitions, and then developing his own. With action research and this type of insider narrative inquiry, using action learning cycles, it is important to stress the possible in this definition. My research is developed in my own context, and hence I am not aiming to create generalisations, but rather explore where and how broader educational trends and changes intersect with my particular context. I acknowledge this limitation of my own qualitative study. At the same time it may be possible for others to find the ideas, processes and models may apply in their own situations, and hence others may choose to use the theory, developed at Green Gully, within their own context. I have indeed had contacts with other schools in NSW and Victoria that see value in the curriculum design processes and models we have developed here, and wish to use them in their own contexts.

What is specific to 'action research' as a form of inquiry is that it uses the experience of being committed to trying to improve some practical aspect of a practical situation as a means for developing our understanding of it. (Winter 1998, p.27)

At the heart of my work at Green Gully was the desire to respond to the educational transgression occurring, and improve the quality of the curriculum offered to students. By improving the curriculum design and documentation processes it is then possible to improve the outcomes for students. We aimed for a more coherent, challenging and consistent curriculum for both teachers and students. The models and processes I developed, in collaboration with others, helped achieve this purpose. We started with the practical problem of how to best develop and document our curriculum, in response to the changes occurring, and worked towards a solution. The discussions, trials and
collaboration leading to these processes, tools and models increased our understanding of the curriculum we wanted to deliver to our students. This is where my theory of practice was being developed, trialled and updated.

It is a long time since my initial teacher training back in 1977. I remember little discussion of how curriculum is actually developed and documented. I remember some discussion of lesson planning, but little in the way of how to develop full units or topics. Most of my learning and understanding in this area has been through practical experience of developing curriculum, either in isolation (most VCE work), or with some collaboration (mostly with our Integrated Studies programs). This planning was informed by various curriculum guidelines from the Department of Education such as Curriculum Statements and Frameworks, and most recently the Victorian Essential Learning Standards (VELS). At the upper school level similar guidelines for VCE have been developed by VCAA. We had a range of curriculum days over the years to share these newer developments, and allow us time to accommodate them within our practice, or as has often been the case, to develop totally new courses, units or topics. Our curriculum development practices became more “expert” as we aged and learnt to cope with the latest expectations of us in curriculum and assessment. In recent years we became more creative through exposure to the “middle years” innovations at our school, wherein ideas such as developing activities using different multiple intelligences (MIs) was adopted. This led to a wider range of activities within the classroom, aimed at developing these MIs, and having students and teachers using different learning and teaching styles.

So, my first direct answer to the question 'Where does "Theory" come from in action research?' is: not mainly from a computer search of 'The Literature', but from a process of improvisation as we draw on different aspects of our prior professional and general knowledge in the course of the inquiry. This theoretical dimension of an action research inquiry may be thought of as a sort of journey of self-discovery. Every time a colleague or a student or a client presents us with something new and surprising (in the data) or a new possible

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40 VCAA – Victorian Curriculum and Assessment Authority
interpretation pops into our head concerning some event or part of the data, we find new relevance in theories which were ‘aware of’ beforehand but which until this moment had not seemed significant. Theory, in the sense I defined it (prior knowledge of possible general relevance) does not, then, always require a trip to the university library: quite apart from our initial general and professional education, we have spent a life-time in a culture with rich and varied resources of information and interpretive commentary. We can thus improvise links between perspectives which previously had been lying dormant in different areas of our brains, so to speak, find ourselves remembering things we had forgotten we knew, suddenly realising we need to think hard about a set of ideas that had previously been in the background, not yet apparently ‘anything to do with’ the inquiry. (Winter 1998, p.36-37).

This extended quote is important for me in helping to recognise that I am, and have been constantly responding to new ideas, inputs and readings. As such my own literature review did not cover all of these readings. Some of my thinking and writing on theory such as complexity and its relationship to my own developing living curriculum theory needed to be considered later in my thesis. In the quote above Winter writes that theory comes from a range of places and through varied discussions, and is developed through a ‘process of improvisation’, which aligns appropriately with the work we completed at Green Gully. The theoretical dimension is like a ‘journey of discovery’ which is what I describe through my narrative. As I became aware of new possibilities through discourse or reading, I found ‘new relevance in theories we were unaware of beforehand’, but which were now significant.

My first point, then, is that theory in action research is a form of improvisatory self-realisation, where theoretical resources are not predefined in advance, but are drawn in by the process of the inquiry. (Winter 1998, p.35)

It is through the actual research process within my teacher practice, as I am asking questions and aiming to improve practice that the theory is developing. The phrase ‘improvisatory self-realisation’ really strikes a chord. I was continuously improvising in my classroom, and then in our collaborative
discussions, as we modified our curriculum plans, documents and processes. Reflecting upon these improvisations is where the self realisation comes into being.

My second point is that theory in action research is inherently both reflexive and multidisciplinary, because action research is necessarily just as much to do with the process of the inquiry as with the substantive topic. The negotiations through which we involve participants, resolve ethical and political issues, establish and develop the focus of the work, and construct strategies for agreeing interpretations of events; all contribute to what we learn from an action research inquiry. (Winter 1998, p.37-38)

I think it is because action research raises key questions about the actual experience of taking responsibility for attempting to initiate change. It is about the possibilities and limits for responsibility and creativity within the lived experience of highly problematic organisational and political conditions. (Winter 1998, p.38)

My research involved an ongoing series of questions about improving practice, and sharing this with others at my school. It is why I continuously returned to these questions and identified new ones in my narrative inquiry. Bringing about change with the goal of improved outcomes has been both my written role and my unwritten role. As a leading teacher I was a catalyst for change. As a member of the Teacher Support Program (TSP) my role was to bring about change in practice. As a member of the curriculum committee my role over nearly 30 years was to monitor and improve the curriculum provided to students. Each of these roles involved having the responsibility to bring about change in a complex organisation with many individuals, and in a range of political situations over many years.

So action research entails the integration of theory - in and for action. Because the action research process itself involves deciding how best to intervene here and now, in this situation, with these various individuals, in the light of these social and professional values, amidst
the complex pressures of this organisational and political context. (Winter 1998, p.40)

My research has been about how this theory has developed and how it has been used. My narrative explored this process of living curriculum theory development and it examined how the models and tools changed over time. It has been about reflections upon the actual use of the learning lattice, its evolution and its value, as well as other curriculum tools and processes. It also considered the underpinning values, as I questioned the curriculum processes and planners we used, and why we have adopted them.

Nevertheless, I would like to insist on the argument that what distinguishes action research from 'spectator research' is that its action focus necessarily means that it must seek to integrate the various theories it draws upon. Furthermore, the action focus means that the theoretical work of action research has, in some sense a political purpose, even if it is only concerned with negotiating a shift in organisational policy or resource allocation. This is an important point, because the concept of 'praxis' not only implies 'informed and committed action' (Carr and Kemmis, p.190) but an understanding of the ways in which although human action is massively constrained by political, economic and cultural forces beyond our direct control nevertheless there always remains a specific scope for creative innovation (see Sartre 1968, p. 87, p. 171 ff.; Carr and Kemmis, pp. 33-4; Winter 1989, p.51). (in Winter 1998, p.40)

I did not see myself as a spectator at all within my workplace. I was constantly interacting with colleagues and actively involved in further refining the living curriculum theory reflected by my curriculum processes and models. My refinements and the growth of understanding occurred in the light of these interactions and reflections. It was definitely set within a very specific political context. Any discussions of curriculum documentation processes, requirements or changes are highly political within a school setting. They represent the heart of teacher work. Every person within the teaching community will hold an opinion on the best way to teach, the amount of time their curriculum area is entitled to and the way in which their work should be documented, shared and
assessed. Any changes in this area can be highly emotive and discussions can become very heated and passionate.

Rather, I have argued, the process of action research generates its own form of theory. This is a form of theory which is integrative, critical and political; it is both personal and collective, a synthesis of values and understandings, and a response to the many methodological dimensions of practical action in complex organisations profoundly influenced by external political forces. (Winter 1998, p.41)

This is the final quote from the article by Winter that I have chosen to include here, and it summarises the nature of the theory developed through action research as he sees it, and through this form of narrative inquiry, as I have interpreted it. I agree with the integrative nature of the theory. It is evident in my inquiry that I was responding and integrating ideas as I became aware of them. I may choose to abandon some components in the future, but certainly as my living curriculum theory has been developing, I have been integrating more elements into it. In many ways it synthesises ideas that have been around for a while in other contexts but that had not been discussed earlier within my own working context. It is critical of past practice in terms of curriculum design hence the desire to always improve. My living curriculum theory takes ideas from other models, and has integrated them where they have been seen as most valuable and practical. As indeed the theories developed within a practitioner community have to be practical, or they will not be adopted, but will be abandoned until a more practical possibility is developed. This appears to be what has happened with my ideas on envisioned Individual Learning Plans, as we did not yet have a structure to support their practical implementation. Once these structures are in place, it may become possible to once again return to the ideas I developed.

The political context for the theories being developed is important. The theory and models developed during this study were being implemented through the support of the local administration. Without this support the view of curriculum within Green Gully would be different. Indeed the ideas have developed through a series of ongoing discussions, including some with the principal class, over the years.
The theory developed is in some ways ‘collective’ as members of the teams I have worked with have started to use the term ‘living curriculum’ in discussions. There was an acceptance that the curriculum does evolve from year to year. It is not static and fixed, but constantly updated and refined, to better meet the planned outcomes for all students. Certainly the models and processes have evolved through discussions in teams and with individual colleagues. At the same time the learning lattice, curriculum permaculture and the concept of a living curriculum educational theory are personal in that the ideas originated with me. Much of the evolution of ideas is also personal, as I have reflected upon experience, and generated variations to earlier processes, models and theory. As mentioned earlier, the developing theory has come about through the synthesis and integration of ideas, discussions, reflections and experience. The theory is based upon the values, understandings and perspectives I brought to the discussions.

**Living Curriculum Theory**

In this next section I discuss in some detail core elements of the process of developing and evaluating my living curriculum theory. Figure 60 (page 246) gives a visual summary of the complex processes involved in the construction process. The ongoing, continuous search for improvement is highlighted in the figure.

I am returning here to the highly relevant writings of Whitehead and McNiff (2006) in their text *Action Research Living Theory*. A number of quotes stand out for me, and I hope help to direct the development and understanding of my own “living educational theory”, my **Living Curriculum Theory**.

> Living educational action researchers believe that their theories constantly need revisiting and reforming as the circumstances of their lives change, so their theories are always in a state of live modification. (Whitehead and McNiff, 2006, p.30).

Each year my ideas about the best way for teams to work together, to develop curriculum, evolved. I constructed graphics to show this process. The process has developed as my understanding of collaborative process improved. It also changed as my understandings of the components of the curriculum have changed. The stages of the process relate directly to the components of the...
process, hence as my understanding of curriculum development has increased, so has this led to the changes in the process itself. An increasing understanding of teaching for understanding, of the habits of mind, of the value of essential questions, of the nature of VELS etc has in turn, led to changes in the actual process. With new inputs and new understandings, new circumstances have evolved, that have led to new theory about the best way to develop curriculum, and the nature of the developed and documented curriculum has evolved. The availability of resources through the LSF directly impacted upon these processes. New staff have been hired, time has been made available for curriculum development, and the Teacher Support Program (TSP) was set up, to support the personalising of the curriculum, its documentation and improvements in classroom pedagogy. My theories constantly evolved with these inputs and experiences, supported by extensive readings and discussions with team members and critical friends. Visiting the classrooms of colleagues, team teaching and ongoing curriculum documentation also helped the development of these ideas.

These theories are living in the sense that they are theories of practice, generated from within our living practices, our current best thinking that incorporates yesterday into today and which holds tomorrow already within itself. (Whitehead and McNiff, 2006 p.2)

This quote is important because it links growth, theories, best practice and thinking to a particular time. Living theory is identified as coming from within us, our practice and our thinking. The authors are highlighting the idea of learning from the past, building understandings, theories and practice out of that past, but at the same time recognising that within this living understanding, theory and practice are the seeds and germination of ideas for improvement and tomorrow.

He (Whitehead) said that practice was a form of real-life theorising. As we practice, we observe what we do and reflect upon it. We make sense of what we are doing through researching it. We gather data and generate evidence to support our claims that we know what we are doing (our theories of practice), and we test these knowledge claims for their validity through the critical feedback of others. These theories are our living theories. Jack is in education so he works with
living educational theories. These contain the descriptions and explanations that people offer for their practices. They show how people can position themselves as living contradictions, because they hold certain values while also experiencing the denial of these values. (Whitehead and McNiff, 2006, p.32).

Figure 60 illustrates how this living educational theory is being developed. This is based upon a re-reading of the work of Whitehead and McNiff (2006).

![Diagram of Creating Living Educational Theory](image)

Figure 60 Creating Living educational theory

My theory certainly develops from my practice and the practice of the teams I worked with at my school. It is based on experience gained over the last few years from real-life situations. I observed the impact of planned changes, aiming to constantly improve the curriculum offered at the school. I wanted it to be the best, to be current, engaging, relevant and challenging. The principles of this curriculum development process have been documented. The curriculum is also to be reflected upon and up-dated each year, in the light of experience. Varied and increasing pathways to understanding were developed, as we aimed to differentiate the curriculum, upon our school local area network. I am/was never
satisfied that it is just right at any one time. I believe that it should be constantly growing, being refined and improved. I asked students to regularly reflect upon their learning after each assessment task, and considered these reflections when I updated materials for the next year. These reflections allowed me to anticipate weaknesses and problems in the learning processes, instructions and rubrics for the following year. Working in teams of teachers allowed me to collect formal and informal data about the curriculum we devised and presented. It allowed me to collect feedback on success and failures and upon areas that needed to be improved or left out. We often planned too many activities in the units, and this feedback helped in the process of refining the units for the following year. Our team discussions, sharing of work produced and informal conversations, assisted in the ongoing development of the units we teach. My living curriculum theory includes descriptions of the processes we used, the guidelines for curriculum design I developed and the activities we included as part of the curriculum. It also includes the learning lattices we used to structure our curriculum, alongside the breakdown planners, mind maps and lesson planners that I developed at school. These descriptions and explanations were backgrounded by the values I identified, and that we at the school continued to discuss. In my living theory, it is the questioning of these values and the quest for ongoing improvement that drives me to improve my own practice, and share this evolving theory with the teams I worked directly with, and the school as a whole. Indeed I tried to share even more widely by presenting in forums at other local schools, at education department and in habits of mind seminars.

**Curriculum design characteristics for the 21st century**

Figure 61 summarises the characteristics of curriculum design required, as we end the first decade of the 21st century, and compares these with characteristics that were more typical back in 2000. These are the characteristics I have referred to during the narrative commentary. Significant change has occurred in these characteristics. These characteristics and the concepts they represent now need to be considered more widely. The changed nature of these planning and design characteristics requires changed curriculum models and processes, and suggestions about the potential nature of these follow. The curriculum
model and planning framework that I developed reflects these new characteristics as the description demonstrates.

<table>
<thead>
<tr>
<th>2000</th>
<th>2010</th>
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<tr>
<td>• Simple – “fewer domains”</td>
<td>• Potentially more chaotic due to increasing demands</td>
</tr>
<tr>
<td>• More easily managed</td>
<td>• Aims to be sustainable</td>
</tr>
<tr>
<td>• Discipline based</td>
<td>• Aims to be manageable – realistic within increased expectations</td>
</tr>
<tr>
<td>• Strong content focus</td>
<td>• Adaptive</td>
</tr>
<tr>
<td>• Some skills incorporated mostly from within the discipline</td>
<td>• Holistic</td>
</tr>
<tr>
<td>• Less responsive</td>
<td>• Synergistic - more than the sum of the individual parts</td>
</tr>
<tr>
<td>• More traditional</td>
<td>• More complex with many ‘domains’ across different ‘strands’ of the curriculum</td>
</tr>
<tr>
<td>• Less changeable- more consistent from one year to the next</td>
<td>• Stronger process focus with many skills incorporated/integrated</td>
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<tr>
<td>• Frequently designed by individuals</td>
<td>• Dynamic</td>
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<tr>
<td>• Less formal/rigorous documentation</td>
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<td>• Interactive – gestalt</td>
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<td>• Flexible</td>
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<td>• Systemic</td>
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<td>• More rigorously documented</td>
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<td>• Differentiated</td>
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<td>• Increasingly collaboratively designed</td>
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<td></td>
<td>• Forward looking (within a vision)</td>
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<td></td>
<td>• Makes use of the habits of mind</td>
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Involves students through use of student voice

<table>
<thead>
<tr>
<th>2000</th>
<th>2010</th>
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<tbody>
<tr>
<td>• Thinking curriculum less valued</td>
<td>• Thinking curriculum more valued – incorporation of habits of mind</td>
</tr>
<tr>
<td>• ICT some value but limited access</td>
<td>• ICT strongly valued and widely used</td>
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<tr>
<td>• Goals and objectives used</td>
<td>• Content around Goals, ‘Big ideas’ or Essential Questions’</td>
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<tr>
<td>• Limited inputs and networks</td>
<td>• Wide range of inputs from a range of networks</td>
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<tr>
<td>• Assessment of Learning focus</td>
<td>• Assessment for Learning, Assessment as Learning and Assessment of Learning built into design processes</td>
</tr>
</tbody>
</table>

Figure 61 Changing characteristics of curriculum design

Living Curriculum Theory and the Learning Lattice

Over the course of this thesis I have explored and developed my own personal living theory of curriculum. This has included many different elements, as I have discussed my ideas on curriculum, differentiation, assessment and pedagogy. In particular my focus has been on an individual theory of curriculum design. To this end I am focusing
here on my personal model of curriculum and learning, which also acts as a planning and evaluation framework (the Lattice), and the flow chart for curriculum design, as used at the school. Both of these have the potential for being utilised in wider and different settings. Much of my living curriculum theory represents a synthesis of ideas from elsewhere, integrated together within a creative interacting framework I developed. The lattice as a model demonstrates the nature of curriculum and curriculum design in the 21st century as it is holistic, interacting, integrating, dynamic and fluid. It is not static or linear. It is a very different model from the many linear examples that exist as it is confined to a single page to support the emergence of these characteristics. Many of the constituent elements of the lattice may be found in other planners, but their linear nature often covering several pages, are much more like the breakdown planners we developed for implementation of the curriculum we designed.

![Figure 62 The Lattice as a Curriculum Model](image)

Within an environment of significant educational change (the educational transgression I have described in this study), I have developed a new curriculum model and planning framework, that I have termed my learning lattice. The characteristics and uses of the learning lattice are summarised in figure 62. The lattice also reflects the curriculum planning characteristics listed in figure 61 on the previous page. It is an holistic model of curriculum and learning. It is a model and planning framework that could be used in any situation, as it is flexible, as I have shown by adapting it for use outside of Victoria and across Australia with the new draft National Curriculum (see figure 75, page 314).
have also adapted the lattice to use in my latest educational setting, wherein I am
teaching at the tertiary level within a bachelor of education program (see appendix G,
page 342). Pre Service Teachers have also used the lattice as a framework for designing
curriculum from all ages P-12 and across different subject/discipline areas. The lattice is
both a model, showing the nature of the curriculum as I see it, and a framework or
planner for designing 21st century curriculum. In my setting it has been used mostly as a
tool for implementing and embedding many of the changes of the transgression. The
lattice as a curriculum model has been at the centre of my developing living educational
theory and at the same time, a tool for its implementation.
The lattice is based on an underlying understanding and philosophy that the curriculum
I need to teach is not just a single discipline but includes a wide number of inter-
connected areas beyond that. I, as a teacher of geography, also need to teach students
how to think, how to use technology and how to manage their own learning, to name
but a few of these areas. I need to incorporate these areas, currently called non-
discipline domains in Victoria, or learning capabilities within our proposed national
curriculum, carefully and formally within my planned curriculum framework and
planning processes. This inter-connected holistic approach is central to my learning
lattice and approach to curriculum planning. These non discipline learning capabilities
are equally important in the curriculum planning process. Inclusion of these areas has
led to a greater complexity in the planning process, and the need for increasingly
sophisticated tools to manage this process. This thesis has explored how and why we
need to do this over the course of the transgression. Figure 63 is a gestalt diagram I have
developed. This shows that although the discipline being taught may remain at the heart
of the curriculum being designed, many other curriculum domains and elements also
need to be included. These interact upon each other, as there is a strong
interconnectedness across the different domains of the curriculum. For example, in a
single lesson within a unit in geography there may be an emphasis on using ICT for
visualising thinking and also exploring different ways to problem solve. Several
different curriculum domains interact successfully, and outcomes in each of them may
be achieved holistically, through the one lesson. The discipline is frequently at the
centre of the lattice, but at other times it is replaced by big ideas and/or essential
questions that may come from a range of disciplines, but are core ideas for an integrated
topic being studied. The flexible characteristic of the lattice supports this variation. The
inter-connectivity of the curriculum is supported by the lattice design itself. This allows
multiple domains to be identified and included in the curriculum design process. This then embeds them within the teaching and assessing processes, rather than seeing them overlooked due to a concentration on discipline content, which tended to happen in the past. The 2010 characteristics, summarised in figure 61, have been carefully included within the design of the learning lattice, to make it an appropriate curriculum and planning model for this time. The characteristics and range of uses of the learning lattice were summarised in figure 62.

![Learning Lattice Interrelationships gestalt and VELs](image)

Figure 63 Learning Lattice Interrelationships gestalt and VELs

This type of lesson and unit, with outcomes across many domains, reflects the changed curriculum design characteristics. Teachers in Victoria now have to teach, assess and report across a wider range of domains and their planning and curriculum processes need to reflect this. Within the proposed national curriculum with its general capabilities similar expectations will likely develop. Quality planning of activities holistically, can result in a synergy emerging that engages students in a valuable, process focused, curriculum.
At the heart of the learning lattice (see appendices G, H and I, pages 342-344, for more examples) are a number of important elements of the curriculum design process. The big ideas, essential questions and/or major discipline goals start off the process of curriculum design. Clearly identified next are the key concepts and skills of the topic or unit. The last element at the heart of the lattice framework are the assessment tasks which may include the 3 forms of assessment (for, as and of). This central cell of the lattice lists and shows what is central to the unit, what is at its heart hence its position in the centre of the lattice. Figure 64 has comments, shown in red, that describe each of the key elements of the lattice as identified in each individual cell. The lattices listed do vary. The lattices range from a Victorian VELS unit for year 7 (appendix H, page 343) to a senior VCE unit lattice for year 11 (appendix I, page 344), a draft National Curriculum unit (figure 75, page 314) and a science unit for a B.Ed. program I have taught at Victoria University (appendix G, page 342). This range of lattices has been included to show the flexibility and adaptability of the planning framework. The framework has been used across all subject areas within my school. Indeed it is the required curriculum documentation model.

Driving the curriculum in the learning lattice is a series of cells along the top row. This is where distinct elements of the thinking curriculum are located. A major goal of schools is to teach students to think. It is certainly a domain in our formal curriculum here in Victoria, and a learning capability to be addressed in our proposed national curriculum. Within the row of cells representing the thinking curriculum I distinguish a number of separate elements. Any formal requirements such as with our thinking domain are included within one cell. These are specified as clearly as possible in order to ensure any formal assessment and reporting requirements are covered. Any curriculum framework designed must clearly address any formal assessment standards and this occurs for thinking in this cell. Similarly other formal reporting standards in other learning areas or domains occur in other cells. As with curriculum design, assessment and reporting requirements have also become more complex and detailed, and curriculum planning and documentation needs to take this into account.

A second cell within the row covering the thinking curriculum identifies the habits of mind that will be taught and are particularly useful within this topic or unit. The habits of mind or habits of success, as I frequently refer to them, make up an important element of my learning framework. Teaching students how to be successful through the use and development of the habits is an important part of my curriculum design and
implementation. A third cell identifies the multiple intelligences (of Gardner) to be used within the unit. This element of the lattice is slightly different to others in that it has a more pedagogical focus. In this cell multiple intelligences that will used for Presenting ideas, developing learning activities or learning Processes and finally assessment Products during the unit are listed. (The 3 Ps as I commonly reference them). The fourth cell to be found in most of the lattices is a listing of the levels of thinking, required by students, as they complete the activities and assessments within the unit. It is important for students to be challenged to work at the range of levels identified by Bloom and Anderson. In all of the lattices I have constructed and used as examples, these elements of the thinking curriculum appear in some fashion, as teaching thinking is important throughout schooling. The thinking curriculum has been a significant component within the transgression and including this into my model of curriculum and the curriculum planner has been very important.

To either side of the central cell with its big ideas and/or essential questions are a number of other cells. These cells include such domains as interpersonal learning, personal learning, communication and/or literacy and ICT. Each of these is considered as important non-discipline domains here in Victoria. They are domains that help develop important skills, such as working in teams, understanding how individuals learn, setting individual goals, using new technologies and of course communication with others and/or literacy skills. These are important skills for living and working in the 21st century around the world, and need to be included somewhere in the formal curriculum. In the learning lattice they represent essential elements of my curriculum framework, and need to be included at all year levels and across disciplines. These are important elements to be integrated into the curriculum not necessarily taught in isolation. They are part of an holistic approach to learning, that is a characteristic of 21st century curriculum, and hence curriculum design. Models that ensure these domains of learning are formally integrated into the curriculum are essential. In the interconnected world in which we live skills in these domains are critical for success. They also need to be taught in an integrated fashion, modelling the world outside the classroom. The personal learning domain importantly provides student input, as it includes student goals and students managing their own learning. Here is where student voice has its important place. Student voice was discussed in more detail earlier in this study when describing how students can contribute to the construction of the curriculum (see figure 46, page 180).
The bottom row of elements for the learning lattice includes the final domains required, such as civics and citizenship and technology, creativity and imagination here in Victoria. Again these are important non-discipline domains of knowledge and skills in Victoria. The integration of these domains into the curriculum is required as they need to be taught and assessed. They represent important life and work skills for the 21st century and need to be connected to the disciplines that make up the traditional core of our teaching.

The bottom row also contains the specific standards, skills and formal objectives for the particular discipline domain(s) being covered within the unit. This may include one or more disciplines, as some disciplines are frequently taught integrated with others. Multiple disciplines can be seen in the year 7 example I have included in appendix H (page 343). This inclusion of multiple disciplines, when possible, reflects the need to use more than one discipline when exploring many topics, and the value of reinforcing skills and concepts in the holistic approach to knowledge.

The final cell within the bottom row of the lattice contains a listing of the key activities and resources for the unit. In our school context these are usually hyperlinked to a more detailed breakdown planner, listing each of the activities, and that in turn is linked to individual lesson plans. In the final learning lattice, developed for implementation in an individual year, there are frequently many hyperlinks reflecting the interconnectivity built into the design. The lattice itself is both a model for 21st century curriculum and an overarching planner. It gives a complete overview of the unit, including potentially Big ideas, Essential Questions, values, skills, assessment tasks and activities, the appropriate standards across many domains both discipline and non-discipline, key activities and important resources. It is an holistic model of the curriculum being implemented. It is an integrated model organised and aiming to show on a single page where a major unit, topic or indeed an individual lesson fits in the entire school curriculum. It is a non-linear framework for learning. The learning lattice is also a responsive model as it responds to new inputs and changes quickly and can be easily up-dated from year to year. It is in some ways an open system with interconnected sub-systems. New inputs can be included from year to year. It can easily be adapted for major curriculum changes as I have shown by adapting the framework for VELS (appendix H, page 343) to a National curriculum framework (figure 75, page 314). The lattice was also adapted for use at the VCE level as is shown in appendix I (page 344), where a year 11 unit for geography has been shown. Communication of a unit through a
learning lattice is also clear and newly arrived staff have adapted to its use, and understood the key elements of any unit they have been asked to teach. Most of the lattices used at my school have been developed by collaboration within staff curriculum teams. The lattices have been constructed following extensive discussions, frequently mind mapped using ICT software, and then documented upon the lattice. The lattice is a complex system with many interacting components, but it has provided the basis of a detailed and much more rigorously documented curriculum than used to be the case. The interactions, the integration, the holistic nature of the lattice reflect the complexities of curriculum today. It is a dynamic model and planning framework, one that is responsive to the increasing demands facing teachers today. It is responsive to feedback and has frequently been up-dated. When I first developed the first version of the lattice in 2003 we had one curriculum in place (CSF2). Over the time I have worked on this study a new framework (VELS) has been implemented, and now another is very much on the horizon with the National curriculum. With each major change I have been able to adapt the concept and practical structure of the learning lattice.

The lattice has been the framework I have used to work towards my vision of what the curriculum is and how curriculum should be planned and taught in my school. Integrating key elements of the thinking curriculum, the 3 strands of VELS, the use of Big Ideas and essential questions, the move to assessment for, as and of learning and the use of the 3 Ps for the Presentation, Processing and Products of learning, all of these are aspects of my vision of learning. Incorporating them into my curriculum planning framework, and then into the processes for constructing curriculum, have led to growth towards my own and in turn the schools’ vision of learning. The lattice has been both a curriculum model, a model of learning and the framework for 21st century curriculum design to proceed.
It is considered important to challenge students across all thinking levels and those covered within the unit are clearly identified.

Specific MIs are targeted for the presentation of ideas, the processes of learning and assessment products.

UNIT TOPIC
The core of the unit. All surrounding cells represent different elements of the curriculum that are integrated and interacting over a unit. It is an holistic design representing a curriculum framework or model for all aspects of learning across a unit.

GOALS/ESSENTIAL QUESTIONS/BIG IDEAS
The main ideas for the topic are listed here

Key Concepts/Values
Clearly stated major concepts and values being developed are listed in this space.

Key Skills
The important discipline and non-discipline skills to be taught are listed here.

Assessments and Assessment Tasks
The major assessments including any assessment tasks are identified here. Mention may be made of assessments for, as and of learning.

Design, Creativity and Technology (D. C and T.)
Appropriate D, C and T standards and skills may be listed here.

and/or Civics and Citizenship (as required)
Key processes and skills are listed as appropriate.

The essential learning standards of Victoria include these important learning domains.

Activities
The major activities for the unit are listed here. These are usually listed in chronologic order and often hyperlinked to detailed lesson plans or a more detailed breakdown planner for the unit.

Resources
Key resources for the unit are listed here to give the location of further information.

Figure 64 Victorian Learning lattice with explanation in red
Complexity and curriculum design

In figure 65 I have tried to identify and show links between many of the key elements, which are considered in designing curriculum here in our Victorian context. Similar elements would exist in other contexts both here in Australia or overseas. Earlier, figure 57 (page 220) showed how a linear model for the curriculum design process has been constructed utilising and incorporating many of the elements from figure 65 in the model. Figure 65 highlights the many factors that need to be considered, and that the process is indeed complex, as the factors are often interconnected. Consideration needs to be given for example to what needs to be taught (VELS), what needs to be formally assessed and reported, how the teaching will occur (POLT) and differentiation, as well as the values decided by the school community. Preparation also needs to occur for later years, and there also needs to be an acknowledgement and assessment of prior knowledge. This is a very complex task as has regularly been discussed in this thesis. Identifying how each of these considerations is to be taken into account and included in the curriculum design process is a
complex, dynamic and potentially chaotic task, and hence I developed a linear flow chart to allow all these elements to be considered in turn, and then managed systematically.

Figure 57, (page 220) was developed after incorporating processes and ideas, from a number of sources, as has been shown through the narrative. However, the final product created is very detailed, and reflects the thinking and detailed discussions of myself and members of the school community, including in particular the principal. It has grown out of the practices of teachers, working together in teams, within my school. It is based on the requirements of the department, here in Victoria, but like the learning lattice it can again be easily adapted for use in other environments. Unlike the lattice which is a non-linear model the flow chart depicted in figure 57, (page 220) is clearly linear. However, it does still reflect other characteristics of complexity theory, and many of the changed 2010 characteristics of curriculum design, I have described above.

The complexity-based curriculum would be dynamic, emergent, rich, relational, autocatalytic, self-organized, open, existentially realized by the participants, connected and recursive (e.g. Doll 1993), with the teacher moving from the role as an expert and transmitter to a facilitator, co-learner and co-constructer of meaning, enabling learners to connect new knowledge to existing knowledge. Learners, for their part, have to be prepared to exercise autonomy, responsibility, ownership, self-direction and reflection. (Morrison 2008, p.25)

There are clearly many inputs into the curriculum design process. These inputs occur both at the start of the process, but also as feedback processes, and as checks and balances. The list of ingredients for a semester length unit are shown fairly late in the process and acts as a checklist, however, a knowledge of these impacts upon the earlier design stages. Inputs come from formal documents, the experiences of teachers and ideas from all curriculum team members. The intention is for this to be a collaborative approach hence inputs from all are valued and discussed. Ideas come from our variety of individual networks, and from our various resources, all of these are interconnected and discussed. This process is usually completed through a mind map. In recent
times this has been done electronically. Team members have been able to have an input into this process, even when they are not physically present, through an on-line sharing process. This has allowed a fuller collaboration to occur through our interconnected inputs. The networks that are accessed by individuals may be school based, state-wide such as subject associations, or international. For example, in the case of ideas for incorporating habits of mind, international networks based around these habits have been accessed. Similarly with ideas regarding student voice or differentiation, other networks may have provided ideas or resources. The process is adaptable and flexible in order to allow these inputs. Our teams have acted as open systems to encourage these inputs. Commitment to the end product is hence greater because of the highly collaborative approach that has been taken. The curriculum that emerges from this process is holistic, in that it contains the diversity of ingredients required from across all areas of the curriculum. The development of the unit learning lattice, and the use of the key ingredients, ensures this holistic characteristic is embedded. Key skills, concepts and learning processes, from all domains across the curriculum, can be documented and included. The curriculum that emerges from these processes will often be better than its component parts and can hence be regarded as synergistic. Clear communication and discussion across the group is another important characteristic of the process, this encourages all team members to commit to the unit as developed, and implementation is more consistent.

Emergence and self-organization require room for development; tightly prescribed, programmed and controlled curricula and formats for teaching and learning, and standardised rates of progression are anathema to complexity theory. It breaks a lock-step curriculum. (Morrison 2008, p. 26)

Our shared vision for the school is of a collaborative, more fully documented, yet challenging, differentiated and holistic curriculum and therefore one that has a much greater chance of being achieved. Individuals retain some flexibility over their teaching, as long as the core of the unit, its significant questions, ideas, concepts and skills are covered by all team members. An emphasis is seen to be on processes and skills, rather than content. There is the potential for a personalised and differentiated curriculum to emerge over time.
Complexity theory emphasises the process rather than the content of learning, as the constituents of relevant and enduring curriculum content are uncertain. Disciplinary boundaries dissolve as connections among areas of knowledge are permeable, fluid and hypertext-linked; curricula are differentiated and different rather than Procrustean. (Morrison 2008, p.24)

The process of curriculum design and revision is potentially very chaotic. The processes illustrated in figure 57, (page 314) have clarified the procedures. Provisions of guidelines, sample units and templates that I have developed, have greatly assisted in ordering the process. This will hopefully allow the process to become sustainable, as all staff was in-serviced, in both the process and the school expectations for documentation. The thorough documentation of the curriculum that has been achieved through this process, has allowed a complex curriculum to be developed. The use of ICT to support the process and for the actual documentation, has allowed the differentiation of the curriculum to be initiated. Work by individuals to cater for individual differences within their classrooms can be more easily shared, and hence the processes of curriculum development and further differentiation of the curriculum, can be more successfully managed.

Emerging from practice have been the design characteristics I have described in this chapter. Morrison (2008) in discussing complexity theory has suggested that many of these characteristics are those to be expected, when complexity theory is applied (see figure 9, page 49). Both the theory developed and the practices described, reflect many although not all, of the characteristics of complexity theory Morrison has discussed. Many of these characteristics are listed and detailed within figure 9. This study with its detailed and rich narrative through the educational transgression has described how these characteristics can be implemented in the 21st century. The living curriculum educational theory I have described, connects practice and theory, to provide models that embed complexity theory in the curriculum design process.

Indeed the characteristics or key tenets of complexity theory are reflected both in the model of curriculum I have adopted and the processes of curriculum design. They also occur in the products designed through these processes. The documented units and lessons that have been developed are detailed and
complicated. Finally the act of writing the thesis and the research process that has been followed has itself been complex and again reflects many of the tenets of complexity theory. This will be discussed later in this chapter, where I explore the methodological implications and significance of the narrative approach I have adopted within this study.

**Implications for Implementing Curriculum Design in Practice**

*Goal 2: An insiders’ examination of the complex processes and practices involved in designing and implementing 21st century curriculum within the described educational transgression.*

In this section I present what I have learnt, as an insider practitioner researcher, about effectively implementing and sustaining 21st century curriculum. I discuss the drivers and blockers to implementing change, and in particular explore the role of the school vision and documentation in managing the complexity of the processes.

**Conceptualising and Implementing the Change**

Teachers of a 21st century curriculum are not merely interpreters of curriculum but in fact have become curriculum designers. Sometimes they may even be designing individual curriculum, as they attempt to meet the need to personalise curriculum, for the great range of students in classrooms. The increasing demands of and on the curriculum (formal and informal) mean that no two classrooms receive an identical curriculum, despite system and school-based efforts to have an increasingly rigorous curriculum. In my own classroom at year seven, I was expected to design curriculum that covered, then assessed and reported upon, more than 20 different dimensions of VELS41.

I have argued that the curriculum model itself, along with the planning and implementation processes and templates used in schools, needs to cater for and to manage this increasing complexity. The curriculum model and

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41 This included discipline domains such as English, Geography, History, Economics and other non-discipline domains such as the Interpersonal, Personal, Thinking, Communication and ICT. Each of these domains contains multiple dimensions.
implementation processes, developed through the course of this thesis and summarised in the first part of this chapter, reflect the required characteristics of the 21st century curriculum, those needed to ensure that quality curriculum is designed by teachers.

So what have we done to support the individual teacher as they set about designing and implementing their own quality curriculum?

This thesis has been about curriculum theory, practice and curriculum change at one school. In an era of increasing demands upon schools and greater complexity, the internal school definitions of curriculum have reflected this change. Initially curriculum was seen as the subjects we taught and the skills, content and knowledge within them. There were also some additional vocational skills that would have been seen as part of the curriculum, but were not particularly well integrated into the formal curriculum. As a curriculum coordinator for a subject, and as curriculum coordinator for the school, I have had to identify the subjects to be taught, their assessments and the skills and content within them. Over the time of this study, the definition of curriculum has expanded to include much more than this, to include not only what is taught but also how it is taught. It has expanded to include the key knowledge, concepts and skills of subjects together with the underpinning values, alongside this there has been the identification of many domains of non specific subject/discipline content. These non-discipline domains of VELS and the general capacities seen in the proposed national curriculum, each with their own skills and concepts, now need to be integrated into a much more holistic approach to curriculum. Our understanding of the term curriculum has significantly expanded, and the complexity of our planning approaches has consequently needed to meet these increasing demands. Indeed I have written about changing curriculum design characteristics and the art and science of curriculum design for the 21st century in this study. Curriculum is today much more than the traditional subjects of the 20th century.
Managing the Increasing Complexity

As a curriculum designer within a school setting I have had many discussions on curriculum planning. As we have moved to address the increased complexity required by the education department, and as a result of the educational transgression, we have had to dramatically improve our curriculum documentation processes, and carefully consider the extra accountability requirements necessitated by additional formal reporting. Although many of these tasks were completed in the past, our planning, curriculum implementation, assessment and reporting has indeed become much more complex and demanding. I have developed a new flexible model for holistic curriculum design which has had to be able to meet these increased demands, trialled it, and then refined various frameworks and templates for curriculum construction and documentation. I have developed detailed guidelines for curriculum teams to meet. We have then discussed in our curriculum design and implementation teams these guidelines and accountabilities, as well as how to implement them. We have identified and worked to timelines to meet accountability requirements. We have discussed the practicalities of these requirements and come to consensus decisions upon their practical implementation. We have worked in our teams to support ourselves by providing shared curriculum units and resources, by developing sample detailed, descriptive report writing templates and by designing shared flexible assessment tasks and detailed rubrics that have assessed the wide range of standards we have been expected to meet in the new more complex curriculum. This work has been done at a variety of levels from whole school to the individual teacher in the classroom. The formal curriculum team of school-based curriculum leaders has been involved, the LSF leadership team was involved, the principal, the curriculum committee and various teacher teams. It has been a complex process developing the varying curriculum design templates and models and has involved many individuals in various discussions.

How and why do the visual representation help this process

As a curriculum designer knowing and working within my local context I have constructed visual representations as the medium through which I could work
with teachers to identify and describe what was required. As curriculum demands expanded and specific requirements increased, we needed to find a way to structure our curriculum to integrate all of these demands. Many of the visuals used throughout this process have been shared with staff, to help develop an understanding of the changing nature of education during the transgression. Others were used to help develop my own thinking and understanding of what was occurring. The lattice and flow charts I designed and constructed were used to assist teachers in planning their curriculum, and were eventually published in a staff handbook to assist this process. The increasing complexity of these processes and designs reflected the increasing demands. Teachers became more familiar with the range of visual representations over time, as they became more familiar with, and indeed used software to generate their own diagrams regularly in their teaching. One of the VELS ICT dimensions here in Victoria requires teachers to look at visual representations of thinking using technology, and hence teachers and students have been using graphic organisers such as mind maps, concept maps and flow charts much more regularly. The lattice with its ability to respond to varying demands, has supported teachers in planning, teaching, assessing and reporting on the non-discipline domains of VELS with its many skills and concepts, allowing them to do so much more easily and consistently. Different faculties have been able to adapt it to meet their varying curriculum and reporting requirements. A more integrated and holistic curriculum has hence developed, as reflected in the samples included in this study.

In this era of curriculum development, teachers in the classroom need to have models and representation that they can understand and use. Without these shared models we had an inconsistent and more chaotic curriculum response, varying significantly in quality and depth from room to room. Student outcomes were poorer. The lattice and the many other visuals I developed over this study have aimed to improve the quality of curriculum and the experience of all students. The graphics have assisted in understanding of the suggested change and how they can be implemented. For me the lattice and flow charts for curriculum design represent a model and framework for organising the wide range of curriculum components and inputs that we need to teach in the 21st century, in a structure that is truly holistic. The various tools and representations
I constructed helped make the complexity of teaching and assessment both more easily understood and managed within our school environment. Organising the process of curriculum design into a flow chart with clear steps and feedback loops supported staff in covering the key elements of planning, teaching and assessment. Flow charts and somewhat more linear models were appropriate at times. The over-arching curriculum framework for each unit however, remained the lattice, because it supported the holistic integration of the many domains of the curriculum, it had become a model of the type of curriculum that we needed. It provided opportunities to see links between the many varied elements of the curriculum. The lattice gave teachers the holistic overview of where the unit was going, what needed to be covered, what was going to be taught, assessed and could be reported upon. Indeed the lattice and our formal curriculum processes helped to drive teachers thinking, to look for the links and possibilities within the unit, to see connections that might not otherwise occur. The lattice became more than a planner, but a model of 21st century curriculum and its design. It enabled an holistic model of 21st century curriculum to emerge, and its use enabled the implementation of many of the innovations and changes that occurred during the transgression. It ensured the incorporation of the innovations and changes into formal planning, and a more structured, complex practice.

Drivers of change
Curriculum change and curriculum innovation are both influenced by a number of drivers and blockers. Experience in my setting has identified examples of each of these processes.

A major driver for acceptance of curriculum change has been the significant changes in government policy. The introduction of CSF2 and then VELS has been a key catalyst to changes in school curriculum. With the introduction of VELS, major rethinking of the curriculum to be planned and implemented was required. New formal expectations for teaching, assessing and reporting of non-discipline domains meant teachers had to cover many additional standards, including many different skills and concepts. This meant a reduction in past content and working smarter when possible to integrate the new skills into
discipline based units. The curriculum design processes needed to change to support the integration of these new domains, and a more holistic approach to curriculum planning and implementation occurred.

Stronger focuses were also required with regard to priority areas of literacy and numeracy. This led to a modification of time available for other subjects already existing in the curriculum. A new literate practices subject was introduced at years 7 and 8, and this had significant ramifications for other subjects, as many lost time on the timetable. The lattices and other curriculum planning frameworks and models I designed and we put in place supported staff in coping with the greater formal requirements, despite their decreased time. In humanities the complexity of planning increased across years 7-9 in particular. The subjects at these levels found themselves with reduced time, but increased expectations with regard to the non-discipline domains. Not only were these subjects teaching the traditional disciplines of geography, history and economics, and at year 7 this was also integrated with English, but also had to deal with teaching, assessing and formally reporting upon non-discipline domains such as communication, ICT, thinking, personal learning and interpersonal learning. These increased expectations required detailed planning, to avoid the chaotic and ad hoc curriculums that could otherwise occur. The holistic and integrated approach developed and implemented at the school supported teachers in their implementation of the new curriculum, and in meeting the many additional demands.

Time for curriculum planning has been critical. Time was allocated during curriculum days – this was also the only time we used to get in the 20th century. Time was also allocated within the meeting grid – time set aside specifically for curriculum design and documentation within collaborative curriculum planning teams. This has been a critical part of the process. All staff was involved in these teams, to ensure a collaborative approach, as well as support for the final product. During some periods of intensive change, time was given during the day, through a process of either full day or part day release. This was seen as a supportive process by staff, as it was above that usually available. Funds from the LSF program were used productively to support this curriculum planning. At a later stage funds were also used to support pedagogy coaching to encourage
a more diverse approach to curriculum planning and differentiation. LSF funded coaches supported staff both in curriculum planning meetings and in the classroom, modelling and assisting in the teaching process.

Increased accountability by staff furthered this process. All staff was placed in teams, expected to attend the meetings, participate in the discussions and implement the curriculum designed. All staff had Individual Development Plans (IDPs) by 2008, within which all had a goal, to further develop and document the curriculum they were specifically teaching. These IDPs were further linked to the school Annual Implementation Plan (AIP), hence the need for time to achieve these goals. This ensured accountability across the whole staff.

As an insider researcher with responsibility in the curriculum field, I had a commitment to these changes. The developing curriculum was aligned with the school vision and my personal vision. I had been extensively involved in the construction of the school vision and was committed to it. The designs and processes we were putting in place were there to further our progress towards that vision. The vision was an important driver of change during the time of this study. We had done some backward planning once the vision had been documented. Education towards implementation of this vision of learning and curriculum was a major goal throughout much of this time. Changes in school leadership and ongoing discussions altered the vision somewhat, but in general the vision had emerged from a number of whole staff curriculum days. Further discussions over time, by various groups including the leadership team, curriculum committee and whole staff meetings, refined this picture and explored practical options with regard to what the vision meant for the classroom. Contained within this vision were the values underpinning the curriculum developed at the school. Professional development across a series of curriculum days and through the use of professional development modules after school in our scheduled meeting time was another important factor in encouraging and supporting teachers to take on board the school vision and document the curriculum according to the designs and templates we had established. Indeed a teaching and learning framework was developed over time.
For many years there had not been a significant change over in staff at the school. With the ageing of the staff, incoming staff in more recent times tended to be more accepting of the new environment of teaching and learning. This translated to greater acceptance of the new curriculum design requirements. These new staff had not experienced the looser arrangements of the past. Some older staff accepted the changes easily whilst others were more resistant.

Factors slowing change
Many factors have impacted negatively upon the speed of curriculum change and its acceptance. Inadequate formal time has been one of them. Despite having some extra planning time, as discussed above, the complexity of the new curriculum has required very extensive discussions. Workload for teachers has increased as they have tried to meet the increased demands. More time would always be welcomed, as it gave the opportunity to further embed the changes planned and required. A lack of understanding of the changes has been another factor. Even with the professional development (PD) programs implemented at the school there were always staff that needed more information or time to understand the changes. Running concurrent professional development modules meant that staff always had to select from a number of possibilities, and hence missed out on potential opportunities to understand aspects of the changes. Eventually the optional character of the PD program was terminated and teachers were allocated according to school goals, faculty needs and individual backgrounds. This increased both understanding of the need to change, and opportunities to plan and implement the changes.

A lack of commitment to the new ideas and the vision was an important blocker. Not everyone agreed with the suggested changes. Not everyone saw the innovations as contributing towards their own vision of schooling. Not everyone had the same vision as the leadership team. It took time to bring the majority of staff into an agreed position. Much time was spent on discussion, and eventually the majority participated, but with some variation in commitment.

One of the key negative factors was innovation overload. Over the years many innovations had been introduced to staff. Some were taken up for a short period. Others were never adopted. Some were taken up in one part of the school such as the junior school but not in other parts such as the senior
school. Older staff had experienced or been introduced to many innovations over the years, and sometimes held an antipathy to any new ones that were introduced. With the changes to curriculum design, the need to report through VELS was a driver for acceptance. Even though workload increased with regard to planning, teaching, assessment and reporting, the need to formally report was a major driver. Finding a way to manage the increased workload of the more holistic curriculum required was important. Working collaboratively through teams, to design curriculum, develop activities, identify assessment tasks and develop them, as well as through sharing report templates and fully documenting the more complex and detailed curriculum, was an important response that helped address these concerns and blockers.

**Teacher interaction with the ideas**

Some departments and curriculum teams at the school worked independently and well, developing detailed, challenging and over time, a differentiated curriculum. Others needed more support and were slower documenting curriculum. All teachers over 2008-2009 eventually documented their curriculum. There was a strong expectation from the school leadership that the documentation would occur. IDPs and the school AIP reinforced this expectation. Curriculum teams were monitored for their progress towards the goal. Quality of the curriculum still varied, but over time, was expected to improve. When I left the school at the end of 2009 this was still the situation. The electronic support for the documentation process was both a positive and a negative. The incoming ultranet in Victoria was both a driver towards completion of the documentation, but at the same time acted as a blocker, as staff did not want to have to repeat work in the future.

An understanding of the holistic nature of curriculum required, as a result of the transgression, was developed by teachers over time. VELS required some teaching, assessment and reporting of non-discipline domains in years 7 to 10 and hence the lattice and the breakdown planner could be used to support this understanding and the implementation process. A greater understanding of the holistic nature of the curriculum also increased through the implementation of a learning managers program in 2008 and 2009. This program included time for the specific teaching of non-discipline domains by teachers of humanities.
Teachers were also responsible for the reporting of these domains. This improved understanding of these components of VELS and their importance, during the transgression.

**The role of Professional development**

Professional development (PD) was critical with regard to educating staff on the changes in curriculum design and the theory behind it. Although some PD was completed externally, most PD occurred at school through curriculum days, PD modules, mentoring, coaching, newsletters, formal/informal discussions and in general conversations in the staffroom. Discussions occurred in a wide variety of meetings including whole staff, curriculum, leadership, curriculum leadership teams, departments and curriculum planning teams at specific year levels. As a curriculum leader in the school, within my department and in my specific curriculum team, I was extensively involved in these discussions. Ideas would be shared and developed. Often after these meetings I would go away, reflect on them and come up with a new diagram, or do some writing in my journal. I would bring these ideas back to future meetings, to share and further refine them. The visuals were often the basis of these discussions. The visuals acted as thinking, discussion and communication tools.

As a leading teacher and curriculum leader I was commonly involved in the development of the PD modules program, and I was often asked to lead a module. These gave me the opportunities to share ideas and strategies that had come from my reading with regard to curriculum development, pedagogy, VELS, differentiation, improving student VCE outcomes or constructing ILPs. Each of these modules was important, as it offered me the opportunity to share readings and have discussions, to refine ideas or share what had been developed into policies or formal processes. Through these modules key components of the transgression and our developing vision could be discussed and understanding grown.

**The role of external accountabilities**

External accountabilities are now numerous in schools. The need to report to parents, and to the Education Department, drives much of the work in schools. In Victoria the curriculum planned needed to be based upon the VELS. Our curriculum planning took into account these requirements and many hours were
spent discussing who reports on particular elements/domains and dimensions of the curriculum. Once this responsibility decision has been made, this became a powerful influence on teaching, assessment and the final documented curriculum for individual subjects. The learning lattice identified the standards for assessment in each unit. Care needed to be taken to plan curriculum, teach it and then assess it ready for reporting. The general responsibility to plan for, teach and assess the whole range of VELS non-discipline domains, was accepted across all departments and subjects within the school, although reporting responsibility for each of these domains was divided across different departments. The documentation requirements, frameworks and planners supported this process and a more holistic 21st century curriculum emerged.

Another external accountability that impacted upon the curriculum was the introduction of the NAPLAN\textsuperscript{42} tests. This impact included changes to the structure of the timetable, particularly with regard to literacy. New literacy based subjects were introduced to improve performance, literacy PD was held, the use of the learning lattice with literacy and communication skills embedded within one of the cells developed, and finally time was set aside over the year for test preparation. All of these strategies to cater for the NAPLAN had an impact on the curriculum across the school in years 7 to 9.

The formal requirements for school to report their AIP performance and their longer 3-5 year strategy plan performance, also had an impact on improving curriculum planning at our school, as the school set up IDPs in line with these. Goals within the AIP and IDPs were frequently tied directly to curriculum development and documentation so that all staff had to further their work in this area. All staff was required to use the lattice and other planning frameworks and work in teams to complete these processes in the 7-10 curriculum. At the end of the year staff had to report on their progress with this goal. The PD modules and curriculum planning teams were tied directly into this process. Linking together the accountability process and curriculum planning resulted in a more consistent approach to curriculum design, and the embedding of the new processes in practice.

\textsuperscript{42} National Assessment Program for Literacy and Numeracy
Other accountability measures including VCE performances, ON-Track performance, school opinion surveys (parent, student and staff). All of these impacted upon the directions of the school, the focuses for PD, curriculum days and the meeting times available for professional development. As a result of these measures, improvements in curriculum documentation and pedagogy were embedded in practice. This reflected a commitment by the leadership of the school to improvements in curriculum quality.

Figure 66 Sustaining curriculum innovation

Figure 66 summarises key components involved in sustaining the innovations we introduced. General drivers initiated the change process. Support structures to help sustain the innovation were established and implemented. Blockers to change were identified and countered when possible. Clear accountability structures are known and were responded to. General examples appear in the upper part of the figure and more specific context based examples are included within the lower part.
Changes and school performance
The changed curriculum planning processes and structures during the transgression, including the introduction of the lattice, breakdown planners and the flow charts, have had a number of impacts. The curriculum is more fully documented than it was previously. A more consistent and rigorous, but at the same time flexible curriculum is now provided to all students. There is much more awareness of VELS and its requirements. The understanding of the nature of the curriculum has altered, and for me a new model of an holistic curriculum, represented by the lattice, has emerged. 21st century appropriate planning processes are now in place. Many of the innovations of the last 10 years have become embedded in practice.

Greater collaboration between staff now exists, and there is an increased awareness of what is occurring across our classrooms. There has been an improvement in reporting to parents, with regard to breadth of curriculum, with all domains of VELS being planned for, taught, assessed and reported upon. There is a greater accountability of teachers across the school with regard to the curriculum taught, the assessments given, the marking and in reporting. The more consistent approach to curriculum design, has better prepared students for later school programs such as VCE and VCAL, as students have more non-discipline skills to bring to their studies, in the later years of school and post school.

Results at the VCE level have improved, for a number of reasons, one of which is the improved quality of the curriculum throughout the school. Other reasons include study and enrichment programs implemented at the senior level, clearer goals, supportive counselling programs, improved use of student data, the changing nature of the school population, improved PD for staff etc. There has also been improved on-track data, with the school performing very well in tracking and supporting students, into post school studies or work.

Why did it work?
The improved curriculum planning processes impacted at the school for a number of reasons. The support of the principal as a leader of the changes, one who had been directly involved in their construction and who was committed to
them, was very important. The time that was set aside to implement the changes, despite it never being enough, the commitment of the time was critical. The PD program as implemented, with a range of strategies as discussed earlier. The use of LSF funds to trial and improve the processes, to bring in new staff and release staff to help develop the first examples of new curriculum, was also important, as it showcased what could be done, provided valuable examples and supported the development of models of both processes and products.

The appointment of an external staff member as a leading teacher with new ideas and a commitment to the changes, and also towards our developing vision, was a catalyst for change. This teacher, providing support, encouragement and acting as a model, was a critical factor.

The formal requirement to complete the goal of curriculum documentation within the school AIP and staff IDPs, along with the department heads being required to have an action plan that included completing the documentation process, all aligned to support the implementation of the new curriculum design processes and requirements that helped to embed the innovations of the transgression.

The formal requirements of the department with regard to the teaching, assessing and reporting of VELS, also helped to make the changes successful, as there was an on-going accountability process driving the change.

The accepted quality of the process as developed at the school. When shown externally to other principals, schools in the local network, at department workshops, or at international conferences, the feedback from outside the school on the processes and designs was very positive. Other practitioners or teachers viewed the curriculum design processes and frameworks, as being very valuable. The curriculum developed through the new processes, and documented using our various planners, was also aligned with the values and statements found within the school vision.

Many factors have been involved in improving school performance. Identifying the improvements that are only due only to the improved quality of the curriculum and its curriculum design process is difficult. Other factors which have helped the school improve its performance over time would include the quality of the leadership in the school, the quality of the teaching staff, improved teacher pedagogy, changes in the student cohort, an increase in the number of
international students, changes in other local schools, other programs within the school, tutoring outside the school, improved and quality counselling processes, the introduction of VCAL, mentoring and coaching of teachers, improved use of student data etc. Isolating the effect of improving the curriculum design and implementation processes is very difficult.

**Embedding the new complexities**
The new complexities have been embedded through the use of our accepted frameworks for curriculum planning. This has been important with regard to sustaining innovations and change. Documentation has occurred, throughout the school, after extensive discussions of the models we used. Models, templates and processes were trialled and then modified based on the experiences. Models such as the lattice were designed to be adapted across the school from years 7-12 and across all subjects. Support was given for the process of documentation. A handbook containing guidelines and resources for curriculum documentation was produced and shared. Time was set aside each term, for the process to occur.

The learning lattice has been the model for curriculum design at the school, and consequently used for planning, teaching and developing assessments. It has also been an important element of the evaluation process. As a flexible framework and model it could absorb change and innovations, and has expanded over time, to incorporate change. It has not remained static. It developed from a 9 celled framework to one with up to 13 separate cells, reflecting increased formal demands and greater complexity. It supported the sustainability of changes occurring during the transgression, including additional outcomes which have been required by internal or external factors. These additional requirements have been clearly identified, and then incorporated into the breakdown planner and later lesson plans. Interactions have occurred between the many elements of the lattice, during both planned sessions, and when unplanned teaching opportunities arose.

Big ideas and essential questions from disciplines were retained at the heart of the lattice, as many teachers in my secondary school environment still saw themselves as essentially teachers of a subject, each with their own methods or disciplines. Disciplines are still required, for teaching and assessing, by most
state governments in Australia and also within the proposed National Curriculum. Hence they have been retained at the core of our curriculum planning. The non-discipline requirements have been incorporated through integrated planning and teaching of these domains in an holistic approach.

During the evaluation stage of curriculum planning, which occurred once a unit had been taught, the lattice could be used to highlight coverage of outcomes. In this way accountability and rigour were being incorporated into curriculum planning. The lattice helped to ensure that innovations, such as habits of mind, were embedded into planning, teaching and assessment across each unit taught across the school. The lattice and other planning processes ensured a more holistic 21st century approach to curriculum design.

An understanding of the process was developed through sharing of the experiences of the LSF team. Presentations were made to the whole staff, the curriculum committee and within individual departments, as required. Earlier presentations and discussions of the nature of VELs occurred, with staff given the opportunity to deconstruct and then reconstruct VELS, and develop an understanding of its structure, components and nature. These understandings were further refined through individual department meetings. Specific sessions were held on the non discipline domains to develop staff understandings of them. Planning sessions occurred later, to allow staff the opportunity to explore ways to incorporate the non discipline domains into their subject areas.

Curriculum committee finalised the reporting responsibilities for the various non discipline domains after a collaborative and consultative process. All departments 7-10 were expected to plan, teach and assess across the breadth of the VELS however, not all departments were expected to report on each domain. Not reporting took pressure off teachers and was important however, the expectation of planning to teach across all domains remained, and was embedded through the use of the integrating lattice and breakdown planner.

The breakdown planner required teachers to look at the range of planned activities within each topic or unit and identify which standards were being addressed within each sequenced activity. This allowed a later curriculum audit to map the total coverage of VELS domains and dimensions across the school. The lattice and the breakdown planner clearly identified the VELS complexities involved in each topic or unit. They further documented and required staff to
identify essential questions or big ideas, underpinning concepts, a range of assessment tasks, specific habits of mind that were being taught, a range of multiple intelligences that were being covered and tasks that challenged students at a variety of thinking levels. These requirements, supported by a list of key ingredients, ensured that curriculum planning and thinking responded to the complexities of the new paradigm.

The flow chart for curriculum design, that summarised the process we introduced, has embedded within it the key milestones we developed for the LSF program. These milestones reflected our commitment to the three forms of assessment, the development of the habits of mind, the use of multiple intelligences in our classrooms, the use of ICT, differentiation etc. These milestones were related directly to our vision of learning and a vision for the school. Our planning processes, as designed, embedded the work we undertook through the LSF program, and supported the sustainability of our work.

Figure 56 (page 216) summarised the unit development process, with both annotations on the role played by the teacher support group and also the identification of where and when the milestones of the LSF program fitted into the process. The school needed the milestones to become sustainable components of this new and more complex curriculum design process. The role of the teacher support group was to support the implementation of these milestones. By working with staff, teachers were up-skilled so that they could independently construct the more complex form of curriculum required. 21st century curriculum design, with its great complexity, was being embedded into a formal carefully structured approach, in order for the process to be rigorously documented and sustainable in practice. The teacher support group only lasted for the 3 years while LSF funding was available, however, the processes that were put in place aimed to be sustainable into the future, as imagined within our vision.

Embedding innovation in the 21st century is a difficult task, as with increased networking and the rapid spread of new ideas through various media, new ideas are constantly emerging. Some innovations have been more successfully embedded than others in my school setting. Even across our milestones there
has been variation. With milestone 6 for example (the habits of mind developed by Costa and Bennick), some teachers have adopted this more than others, despite the embedding of the milestone within the curriculum planning process. General acceptance of their value has occurred, but specific teaching relies upon lessons developed within the units being taught as planned, and a highly coordinated approach to their implementation. There are 16 habits and pairs of each were provisionally attached to individual units across the years 7 and 8 curriculum. This highly structured approach to their teaching relies upon commitment, resources and rigorous curriculum planning, for their successful implementation. A similar situation exists with other milestones, however greater up-take has occurred due to the consistent approach adopted, and additional school-based PD that has occurred.

**Why have I believed in the changes**

As a leader in curriculum development within my school for many years, I have been extensively involved in discussions with principals, leadership teams, curriculum committees and department teams. Preparation for each meeting has required readings and an informed position. My interest and responsibilities in the school have led to wider reading than was the norm within the school. I regularly attended professional development sessions and with the arrival of the internet spent considerable time researching aspects of curriculum. Over time, I also became active in a number of networks such as those based around the habits of mind and iNet. Suggestions from school leaders with regard to both reading and professional development were important. Visits to other schools and state and federal government policies also provided inputs to my reading. As my readings and discussions occurred, I further refined my vision of curriculum and teaching and learning at the school. Each of the changes at the school needed to align with my vision, or the vision itself needed to be up-dated. Practical implications influenced my adoption and modification of various ideas. Alignment with my values was important and in particular an alignment with my position on social justice. I have needed to believe that the changes would lead to improvements in the outcomes for students and staff at the school. A shared collaborative approach would lead to improvements for staff. Changes in
curriculum documentation would lead to a more rigorous curriculum available for all students.

Critical Events
There have been a number of critical points in my narrative that have particularly informed my thinking. They have included

- The curriculum day with Lane Clark and her ecology of learning
- The development of the lattice
- The arrival of VELS and POLT
- Reading McNiff and Whitehead on Living Theory
- The curriculum days when I discussed building a vision for the future
- The development and implementation of relevant PD modules
- The WIDE PD and differentiation work of Tomlinson
- The availability of LSF funds with their use for time release, employment of a leading teacher with responsibilities for assessment and teaching and learning, as well as the coaching program.
- The development and use of the LSF milestones
- Feedback from staff on the pedagogy and the curriculum design processes
- The reading of Morrison and Jorg on complexity theory
- The introduction of regular curriculum team meetings
- The curriculum design and development handbook
- The use of IDPs to support the AIP goal on curriculum documentation.

Each of these events impacted significantly upon the outcomes of this study and my own personal living curriculum theory. Earlier events tended to contribute to the development of ideas and later events in the list to the effectiveness of implementation of change within my context.

The value of the Vision
The vision developed and refined throughout the narrative has been critical to this story. Once a vision had been identified then the school had values, a mission statement and over time, a more detailed view of where we were heading. I was extensively involved in these discussions. The visuals that I
created contributed towards the evolving vision. As we interacted with the many changing elements of the transgression, elements of these were incorporated into the vision. Discussions with the principal class and the other members of the leadership team were critical. Documenting and discussing the vision, enabled us to explore innovations that could contribute to reaching the dynamic vision of learning and the school that we imagined. Some possible innovations were discounted, as they ran counter to our emerging vision, others became firmly embedded. The LSF processes, resourcing and the milestones we developed, were clearly aligned with the emerging vision, and supported growth of skills and understandings towards that vision. Embedding these ideas was important as a strategy for sustaining the changes we had made. The complexity of ideas within the vision was illustrated through the various graphics developed and included within this study. Professional development for staff was supported by the visuals and the many professional development modules that we ran. The big picture was shared on various occasions, notably curriculum days and sessions at the beginning of the year. The leadership teams also took care to align 3 and 5 year strategic plans, along with annual implementation plans, against this vision. We kept on track with the vision through these processes of informal alignment. Consideration of the plans was against this background. Indeed what we were doing was a form of backward planning. By identifying where we were headed, we could then plan steps towards it. Identifying and knowing the vision was critical for all the innovations we were considering and implementing.

We went along with the changes not only because they were part of a shared vision but also because they were based upon research such as that of Marzano, Tomlinson, Hargreaves, Smith, McTighe and Costa. These were influential voices from overseas that were being listened to, both by us at the school and across Australia. Effectiveness of innovations was being considered, and whether or not they could be absorbed into our vision. Over time our vision became more complex and was translated into action through formal professional development and clear accountability processes. Translating the complexity of the vision required a very structured approach. Formal processes were clear and stepped hence the use of flow charts to show staff what was
required. Implementing the new complex and holistic paradigm required very formal processes to support effective implementation. Hence, despite working in a complex, post modern paradigm, the school implemented models and processes that were more scientific, positivistic and structured. This led to a more rigorous, inclusive environment within which expectations were clear. Innovations such as those developed through the LSF program became embedded, and hopefully in time sustainable. Without this formal process, there would have been greater inconsistency between teachers, more chaos, a greater range of innovations being trialled but then lost, and a greater range of visions across the teaching group. We were aiming for a whole school response, and commitment to the vision from as many staff as possible.

**Working within a narrative framework**

**Goal 3:** A documentation, analysis and interpretation of the process involved in completing this narrative.

In this final section of the discussion chapter I explore, discuss and analyse various issues associated with this form of narrative inquiry, and in particular the value of using multiple voices and the diagrams, in what I have eventually come to term a form of visual narrative. I start this section by briefly discussing the narrative that exists for the methodology used in this study.

As shown in figure 67, the understanding of the best methodology for this study has not remained static, but has evolved into a narrative inquiry. With the long time span involved in this study, I have been influenced by various authors and readings, and my understanding of methodology and potential methods evolved. I started this study with action research as the proposed methodology. Over time, as I investigated this methodology, I resolved to use participant and then insider, practitioner forms of action research. Alongside this I was exploring writing as a form of research and in time the idea of self study. Finally I ended up conducting my research under a narrative framework due to its length and time frame. The narrative inquiry itself, started with case writing, and then became a case study consisting of an extended chronological narrative.
covering 6 years. Throughout this time I have used action learning cycles hence the close relationship with action research and its literature has been retained.

Alongside this evolving understanding of methodology there has also been the emergence of my living curriculum theory within the narrative. Indeed, as I have been analysing my classroom practice and curriculum development, so has emerged my understanding and personal theory. These three threads of practice, analysis and theory have irregularly intertwinied, somewhat like the strands of DNA or the three strands of the VELS here in Victoria (see figure 68).

Analysis has not occurred in a single chapter of this thesis, but has occurred across the thesis, using the 3 research voices and their different lenses. Analysis occurred within the narrative itself, with the pedagogy and curriculum changing upon reflection, after each learning cycle or formal unit, as was seen through the lenses of the practitioner or in the commentary supplied by the narrator voice. There has also been analysis performed by the metacognitive voice and its lens, as the living educational theory emerged. Analysis has continued into this chapter, as I have discussed the data and developed my conclusions.
The theory has grown out of the narrative delivered through the three voices I have used in this study. The complex interweaving of the voices also reflects the three threads of practice, analysis and theory generation. This interweaving is illustrated in the next figure. Key (critical) events can trigger a new understanding and the generation of new theory which can lead to new practice. Critical events have impacted significantly upon the construction of ideas, theory development, practice and analysis. Alternatively, new practice can also lead to new theory, emerging from reflections upon that practice. There is a complex interweaving reflected in the three voices, as the analysis occurs and the living theory emerges. This is not a regular pattern, as breakthroughs in practice, new ideas or other critical events can occur either separately or together. The visual figures included in the study frequently communicate the analysis performed by all three voices.

The critical events that impact on the three threads include such things as an important reading, a professional development, a local discussion, a change of leadership, new resources purchased and/or a new government policy or initiative.

Figure 68 The Three Thread Diagram
Value of practitioner research

My study has been about allowing my voice(s) to be present and heard loudly and clearly. “The notion of voice has been central to the development of research on teachers’ knowledge and thinking” (Elbaz, 1991, p.10). My voices have been present, and have also presented to various audiences, to provide a detailed insight into the work of an insider curriculum designer. This narrative has supported the value of teacher practitioner knowledge. The use of a narrative has added complexity, specificity, detailed grounding and subjectivity.

Instead of an exclusive focus on the prescribed practices and principles based on experimental educational research, teacher knowledge scholars argue for a parallel tradition of research that documents the wisdom emerging from teachers’ practice, wisdom that could be best expressed in narrative form. Narratives, it is argued, capture teacher voices and teacher knowledge better. (Atkinson and Rosiek, 2009, p. 177)

Understandings, emerging from teacher research, have a practical value that is useful within the specific context, but at the same time can provide insights into teaching within the broader context. They may indeed, be valuable in other schools in the same region, state or country and lead to change and improvement in these contexts. “Stories function to alter the ways we view mundane everyday events. Stories can indeed accomplish change.” (Riessman 2008, p.63). This wisdom may best be expressed in detailed narratives, such as this, where teacher practice and a clearly written voice, can lead to a living theory valuable in the wider context, to a range of audiences with “research as provoking, not representing, knowledge” (Britzman and Pitt, 2003).

Asking questions throughout the narrative has been an important element of the research process.

...as researchers, we must listen for, listen to, and ask questions not just in response to an answer, but to ask questions of a withheld response, a nonresponse, or a masked response. (Mazzei 2009, p. 54)
Through our presence, and by listening and questioning in particular ways, we critically shape the stories participants, choose to tell. (Riessman 2008, p.50)

The questions act as triggers to my thinking. They stimulate me to explore ideas more fully. The questions encouraged me to write, and through my writing my ideas were extended. I have used questions regularly within my journal and case study, to identify alternatives, consider options, strengths and weaknesses but mostly to extend my understanding.

This is my story but at the same time has been part of an even larger narrative. To keep to the formal length requirements extensive editing has occurred. I have had to be selective and restricted in my perspective. Amplifying the particular threads relating to my living curriculum theory, as Riessman (2008) notes “Like all stories, it is selective and perspectival, reflecting the power of memory to remember, forget, neglect and amplify moments in the stream of experience”. (Riessman 2008, p.29).

**Voices:**

In this section I discuss my use of the three different research voices, some issues with this process and its value.

It is rather my desire to be faithful to the competing voices that are present toward a more complete, more nuanced, more complicated hearing of an impossibly full voice. (Mazzei 2009, p.46)

> Every text, he argues, includes many voices-hidden internal politics, historical discourses, and ambiguities-beyond the author’s voice. Narratives (especially those that appropriate theatrical conventions) are polyphonic-multivoiced; the author (speaker) does not have the only word, that is, the authority over meaning is disbursed and embedded. Riessman on Bakhtin (Riessman 2008 p.107)

In this study I set out to use a number of distinct voices, each with a distinctive lens. I have written as the practitioner within my case study, describing my work as a teacher and curriculum leader within the school. I have developed the 3
voices to show meaning. “As researchers, we then seek that voice which can elucidate, clarify, confirm, and pronounce meaning” (Mazzei 2009, p.46-47). My narrative voices have aimed to be authentic, and show truth as I have understood it, at that time. “By the promise of voice I mean the promise of a voice that can provide truth, fixity, knowledge and authenticity” (Mazzei, 2009, p.47). I have supplied commentary upon the practitioner work using the narrator lens of the second voice. The third voice I have used has been that of the philosopher/theoretician or what I have termed my metacognitive voice. This voice has operated as I have articulated my developing living theories. Each of these voices has been represented by a different font within the text. “We want the lived experience to be present to us through voice and then represented to others in how we write about those voices.” (Jackson 2009, p.168)

The narrative also contained a number of different writing styles and focused on different dimensions of my work. As Atkinson and Rosiek (2009) write

A polyvocal conception of teacher voice(s), we argue, recommends a variety of narrative genres, styles, and topics as means to offer more nuanced representations of teachers’ work. This view of teacher voice(s) and teacher knowledge also indicates a need for more deliberate efforts to prepare teachers as critical readers and thinkers in communities of inquiry in both preservice and in-service teacher education. (Atkinson and Rosiek, 2009, p. 180)

I have at times used scenarios to envision the future in my school or classroom. These scenarios represent a distinct style. In other parts of the text the voices have described and analysed in different ways. The metacognitive voice is more philosophical or reflective as it describes and develops new theory. At times I asked myself questions and engaged in a dialogue with myself. I did not always answer the questions immediately but pondered on them. Often more thought was required. Sometimes the metacognitive voice (the Philosopher) was required to discuss an answer at a much later date. Sometimes the practitioner in the workplace answered these questions. Sometimes the answer was immediate, other times much later, potentially years later, during the thesis writing. One of the values of the lists of questions I ask myself, is that is provides a window into my thinking at that particular moment in time. It allows me to locate my thinking very particularly.
If the intent is to understand teacher voice in its fullness of context, and richness of dimension, its constraints, its possibilities, then representations of teacher voice(s) must be indeterminate, messy, polyvocal, conflicting, ambiguous, and fragmented, allowing for an aesthetic stance on the part of the reader. (Atkinson and Rosiek, 2009, p. 192).

In my writing I have been constructing data, presenting and analysing it. Constructing my view of the world at Green Gully and presenting an individual perspective. It has been indeterminate, fragmented, messy and polyvocal. This realisation is important, in the process of validating my work, both in its writing and in its presentation.

The evolution of my voices
The researcher voices heard during the study have also evolved, as they have become more knowledgeable. The earliest writings seem to be dominated by the practitioner voice, describing what was occurring, making plans and beginning to articulate a vision. As the study went on the metacognitive voice began to emerge, asking questions, representing new thinking and giving voice to the emerging living curriculum theory. The narrator is found throughout providing the commentary, providing some rationale and analysis, and putting into context the thoughts of the practitioner and the metacognitive, more philosophical voice. The text outside the narrative has been written by this voice. The voices in my narrative are one way in which some limited form of braiding or intertwining occurs. Although there is a tendency for one voice to predominantly write each posting, within the case study and over time, different voices tended to dominate. The roles I carried out at any one time are however, braided within my narrative. Any one posting or extract could have me discussing, from within my role as classroom teacher, curriculum team member, LSF team member or leading teacher. These roles, and my responsibilities within these roles, tended to be very closely linked.

Silences
..Voice is always happening as we consider those questions to ask and those we consider too sensitive to ask, as we listen to what participants are saying and at the same time pay attention to what might be silently voiced, when we focus on what is said and what is
not said, as we construct follow-up questions and simultaneously begin the process of analysing what is readily present and what is absently present in an attempt to listen at the limit of voice. (Mazzei 2009, p. 52)

What silences have been noted during this study? One significant one is that of the students. I have at times incorporated a general student voice, representing student input into my writing and thinking, but in general I have not referred to their contributions in detail. Lack of space has been a factor here. I did bring their perspective into the curriculum design process (see figure 46, page 180) and discussed when and how they could have an input. In practice I would often survey students at the end of a unit, to get some immediate feedback and to assist in preparation for the following year. Students also had some input into topics studied and assessment strategies at various times. I have not discussed my and the school use of student feedback surveys. Aiming to personalise the curriculum meant that I recognised the importance of responding to student voice, and is in recognition of individual student differences.

Are there any voices in the crack? “A more productive practice, however, would be to seek the voice that escapes our easy classification and that does not make easy sense—the voice in the crack” (Mazzei 2009, p.48). The scope of this study has acted as a limiting factor with regard to this input. The length of the study, and the type of self-study and narrative used, has limited this voice. Some of the voices of my colleagues have also been generalised because of the nature of the study and limitations of space. “Practitioners’ interpretive frameworks are the products of their own culturally contingent socialization.” (Atkinson and Rosiek, 2009, p. 193). What I noticed varied depending upon my interests and readings. I was most likely to notice and acknowledge when recent readings made me more aware and perceptive about an issue. As my own living curriculum theory developed it became more all encompassing. Having started from the perspective of a more holistic model, and then developed a growing understanding of both complexity theory and the complex nature of education, this was not surprising.

**Dialogues**

Different dialogues have occurred over the course of this narrative. I have often worked in teams developing curriculum, and within these teams there has been
much dialogue. I have also used 2 critical friends and the dialogue with them has been important for the resolution of certain ideas and positions. Much dialogue has also occurred, at the university, in the course of developing this thesis. The study itself, both in understanding of method and content has evolved as a result of this dialogue. Dialogue has also occurred across networks and in the course of conferences, where ideas have been shared. There has also been an internal dialogue as I have developed my living theory, and identified what I was to share, with the different audiences for my work.

A critical perspective

I gained a more critical perspective when I changed voice and tried to sit outside my insider practitioner self. Now that I have left the school, I also bring a more critical voice, as I reflect upon my time there and analyse it within a bigger context. I also endeavoured to develop this more critical perspective through sharing my work with a critical friend, who had not worked at the school, but was an academic at Victoria University. Discussions of my work on an international level, within a number of different networks such as during iNet conferences, also added to this perspective.

Audience:

“The reading process always involves viewing the text through a perspective that is continually on the move” (Iser 1978, p.285 in Riessman 2008, p.115). Different readers with varied backgrounds and contexts will see different meanings. Each will be asking different questions as they have their own different perspectives and interests. “Who is speaking to whom turns out to be as important for meaning and truth as what is said: in fact what is said turns out to change according to who is speaking and who is listening.” (Alcoff 2009, p. 121). The complexity of the story increases the range of different perspectives that the reader will see. Interpretations and value may vary significantly.

In the next section I discuss the very important relationship between the writer and their audience. This study, and the thinking articulated within it, have a variety of audiences to consider. Much of the work has been presented to staff at my school and used practically by teachers within that specific context. Indeed ideas have grown, and my theory developed, during the course of these interactions.
Looking merely at the content of a set of claims without looking at their effects cannot produce an adequate or even meaningful evaluation of it, and this is partly because the notion of content separate from effects does not hold up. The content of the claim, or its meaning, emerges in interaction between words and hearers within a very specific historical situation. (Alcoff 2009, p. 130)

I have also presented at conferences, to a wider audience, which has included both Victorian, inter-state and international colleagues. Some of my ideas have been taken up and then shared across the borders. I am also sharing my living curriculum theories now, with a wider audience at the tertiary level, as I am involved in teaching pre-service teachers (PSTs) within the Bachelor of Education program at Victoria University. All of this dialogue has been valuable with regard to extending curriculum ideas and refining processes. My thinking upon narrative methodologies is being shared within this thesis, and hopefully in the future will be published and accessible to a wider academic audience, interested in conducting narrative research.

This shows us why it is so important to reconceptualise discourse as Foucault recommends, as an event, which includes speaker, words, hearers, location, language, and so on. (Alcoff 2009, p. 130)

Writing the narrative, became more difficult as I read about the nature of a narrative and its relationship to its different audiences. “The research report becomes “a story” with readers the audience, shaping meaning by their interpretations”. (Riessman 2008, p.137). The different voices that I was using were responding to the nature of the different audiences, their requirements and expectations. This certainly impacted upon the flow of the work, the selection of the words that appeared on the page. The meaning can appear to change upon each reading as we re-construct what are in reality virtual texts. “The important point is to enable a critical conversation between the writers of teacher narratives and the teachers that read them as a form of shared inquiry.” (Atkinson and Rosiek, 2009, p.193).The writing and the accompanying story (visual narrative), portrayed through my graphics, enabled this critical conversation to occur. Dialogues with colleagues, fellow practitioners and academics led to the refinement of ideas and an eventual living curriculum theory.
“Iser emphasised the individual reader’s experience with the text as contributing to the construction of its meaning” (in Atkinson and Rosiek, 2009, p. 180). The meaning of the text may change depending upon audience, time, new influences, readings, background of the reader and the context.

The received text - which is not a faithful duplicate of the written text on the page – is at the same time mediated through the reader’s own referential background and interpretive strategies in the interface between reader and text to reconstruct the virtual text. That reconstruction, that virtual text, argues Iser, constitutes something new each time it is read; (Atkinson and Rosiek, 2009, p. 182)

The different audiences frame both my thinking and my content. I presented different materials, processes and ideas to each audience. The writing and the interpretations may change depending upon audience. Each audience has different interests and perspectives, and what I emphasise varies with each audience.

When teachers read teacher narratives of practice, their own knowledge produced in practice shape how the narratives are received and appropriated by the teachers. When teachers talk about these narratives, what they say is mediated through personal and professional experiences and discursive influences. The voice(s) produced in the reading and responding to the narratives are both emergent from and revelatory of knowledge that is multi-dimensional, socially mediated and historically contingent. (Atkinson and Rosiek, 2009, p. 179)

How the reader is affected by my story will be determined to some extent by their own background. Fellow practitioners will focus on the practical strategies, the discussions of pedagogy, curriculum design and its implementation. Narrative practitioners reading this work will focus on the methodological issues I have discussed, my use of differing voices and the diagrams. Administrators may find value in my writing because of the specific context – a successful school operating in the western suburbs of Melbourne. Each reader will find different aspects of the narrative to focus upon, relate to and to value. Each will find a resonance as they read the story.
How will my audiences show understanding?

The rituals of speaking which involve the location of speaker and listeners affect whether a claim is taken as true, well-reasoned, a compelling argument, or a significant idea. Thus, how what is said gets heard depends upon who says it, and who says it will affect the style and language in which it is stated. (Alcoff 2009, p. 122)

My local context school audiences have shown understanding through their use of the theory, in the development of the school curriculum, and the establishment of the processes and models I have developed or foreshadowed. Other audiences have shown understanding during presentations, discussions, lectures and seminars.

“Teacher narratives elicit unintended meanings from the teachers who read and talk about them.” (Atkinson and Rosiek, 2009, p. 179). Some meanings may be clear and anticipated by the author of the narrative, but there may also be these additional interpretations and meanings. There may be an unexpected resonance or trigger for a teacher, that may lead to a reflection on a past experience, a new idea and hopefully a further improvement in practice or theory. Listeners and readers are active co-participants, through their cooperative understanding of the theory, and their pragmatic and practical use in the school setting. Models that have been adopted and used, outside of the school, reflect an understanding of the processes and models, and their validity and usefulness in new settings. Listeners during discussions of the narrative issues construct meaning and understanding through shared readings and discussion.

After receiving and reconstructing the text to make sense of it, the reader holds the reconstruction of the text up to her lived experience, constituted by personal experience and interpretive resources shaped within professional, social, and cultural discourse communities. She makes interpretive decisions about how that reconstruction should be appropriated into her repertoire of practical knowledge and past experience: (Atkinson and Rosiek, 2009, p. 182)

In many ways this is how I and others at my school respond to text, images and verbal communications, particularly with professional development. All writings
and lectures are considered against our practical experiences, discussed in our immediate communities and then either absorbed, trialled or discarded.

We can enter a text and respond, adding perspectives. Readers actually see representations of the different voices on a page and can interrogate them, questioning (perhaps) the meaning and timing of a conversational exchange, or decisions made.” (Riessman 2008, p.137).

My narrative has grown from the social activity of collaborative work. It is the story of my teams, their challenges and successes. The reading of my narrative is also a social activity as each audience member relates to the descriptions and ideas, interpreting them according to their own backgrounds.

**Narrative and the emergence of theory**

Prior theory presented a starting point for my own theory to emerge. It was the theory that I received at training many years ago. It is also the theory that I identified in my earliest reading at the start of the thesis. Over time my personal theory has evolved and I have developed my own living theories. The living theory has emerged slowly from the reflections, research and writing that I have conducted within my specific context. This theory is intertwined with the descriptions and analysis of practice. Figure 69 shows the relationship between context, research and theory in a graphic manner. It illustrates how context exists across a range of scales, each of which can impact upon the theory that emerges.

There is also no single type of relationship between events and theory emergence. Sometimes theory has been developed and brought to an event such as a presentation, curriculum or team meeting. At other times theory emerges after events. Specific ‘critical events’ have been highlighted during the narrative. My ‘living curriculum theory’ has emerged from the sum of events and the thinking that has followed them. Turning Points or points of departure/divergence are important in the text. This is when we diverge from the expected narrative event. They often relate to particular uncertainties and can lead to new thinking and perspectives.
Analysis choice

“Narrative analysis (one component of the broader field of narrative inquiry) refers to a diverse set of methods, a “family” of interpretive approaches to spoken, written and visual texts.” (Riessman 2008, p.183)

I have chosen to analyse my curriculum work from both within and outside the classroom, over this study. I have analysed the curriculum I have developed, the process of design and the implementation of that curriculum. I have looked at what we/I have been doing and envisioned where we/I need to go. I have also analysed my personal narrative processes. My analysis has been strongly interpretive, as is the actual choice of writing style, and the process of writing. Writing has provided me with data, been the mode for the analysis process, and provided a means to present my thinking to others.

Thematic analysis has been important in this story. It has allowed me to explore the themes I have identified. I have analysed these for inputs into my thinking and examined where the ideas are taking me, in my visions. In interrogating my practice, I have developed my living educational theory, and reflected upon why particular decisions and paths were taken.
Figure 70 Voices, narratives and audiences

Figure 70 represents an important summary of my thoughts on voices, narrative and audiences. “Attention is shifting to how and why the images were produced, and are read by different audiences.” (Riessman 2008, p.142). It summarises my view about what happens from the occurrence of an event onwards. The event is experienced in the school setting, by the practitioner, and hence the description of the event is in the practitioner voice initially. This is recorded after the event, using this insider practitioner voice, within a journal/case study. Sometimes reflections are occurring and initial new theory being developed at this point, hence the metacognitive voice may be actively involved here. A journal/case study or the ideas generated within it may be shared with fellow practitioners, critical friends or supervisors at a later time. Later in the study, the journal/case study is re-examined for the purpose of narrative analysis. This occurs through any of the 3 research voices including the narrator, the practitioner or the metacognitive voice. The audience for this narrative analysis is much wider than the local community and includes the school, other schools...
and the academic community. Finally, the emerging theory is highlighted at the conclusion of the study, with again the wider audiences being interested. The role of the visuals (narrative) changes throughout this process as shown in the diagram. Graphics may be a starting point for the event, when a graphic is prepared for presentation at the event. A graphic may also emerge from the event, as a result of the thinking occurring during and after the event. This may often be presented to the local community for feedback. A graphic may also emerge during the process of journal writing, and be shared with the local community, other practitioners, critical friends or supervisors. “Visual representations of experience – in photographs, performance art, and other media – can enable others to see as a participant sees, and to feel.” (Riessman 2008, p.142). This can again lead to the refinement of ideas. These ideas become an input into the narrative analysis that is conducted later. The graphics emerging from the narrative analysis will also be presented to the wider audience, academic and school audiences. These latest graphics often represent the practical work of the metacognitive voice, and in turn provide ideas for extending the living theory of this voice.

Figure 71 represents what I have discovered about the range of potential relationships that can exist between visual and written narratives. Sometimes the writing and the visual interact upon each other (1). They are interactive because they are being worked upon during the same period and essentially simultaneously. At other times the development of both are separate (2). Parallel ideas and thinking is developed. On other occasions the writing precedes the visual (3A) or alternatively the visual precedes the writing (3B). One is completed before the other is started. Frequently however, there is either a convergence (4A) or a divergence (4B) of thinking and interaction. Writing and visuals are constructed, and then more thinking emerges, or alternatively I did some thinking and then a separate visual emerges alongside a separate written account.
Complexity in my story
Complexity is seen and discussed throughout this narrative. In particular, I have explored complexity within my classroom pedagogy and in the curriculum design process, with the key elements that make up my living curriculum educational theory. I have also identified complexity within the voices contained in this narrative and in particular the range of research voices I have used. Using a “messy text” approach has led to a more complex form of narrative structure and format. The narrative that has been written over the years, has demonstrated the complexity of curriculum design and classroom pedagogy. The use of the polyphony of voices, to show the complicated work of a narrative writer engaged in this type of research, has supported the complexity emergence. The use of many complex and detailed graphics, has both identified the complexities involved in the narrative, and presented them in such a way, as to make them even more apparent.

Re-telling, re-reading and elasticity
“Narrative is always already a re-telling, and as such functions as a meaning-making activity in itself. Because of that quality, narrative is dynamic and
changeable”. (Atkinson and Rosiek, 2009, p. 178). Greater understanding of my story, theory, context and its validity, have emerged over time with editing, re-readings, re-telling and indeed the passage of time. “Life stories are not static; memories and meanings if experiences change as time passes.” (Riessman 2008, p.198). I have further refined my educational theories and documentation over time. New requirements continue to impact and influence my thinking. Sharing of ideas with a new audience of pre-service teachers has effectively clarified key elements of my living theory and practices.

For me there is sometimes a change between the event and the recording of the event. Reflection and analysis may change my understanding of what I have written. There may be a difference between what is written that day or a week later. As I write commentary later again there may be another different interpretation of the event. Other factors can determine what is written such as the audience. “If speech is the direct line to one’s thinking, then writing interrupts that purity” (Jackson 2009, p.167). The core of my story remains the same. As I introduce myself to new students, or discuss aspects of my work in seminars, the key elements remain the same. Reflections and discussions of events may revise views of what occurred, but essentially this narrative remains consistent, although understanding of the complexity of processes and events may increase. Each of my voices finds interpretations within this study. Each uses a different lens as they reflect and act. Each acts and writes at times in a different environment, as this polyphony contributes to and writes my story.

**The value of my narrative process**

This narrative and the issues I have discussed in the context of this study, provide an insight into the way narrative methodology has value for understanding the complexity of ideas, and in particular how ideas develop and grow over time. I have given my response, on a number of the questions that interest narrative inquirers, with regard to how they play out for me. In particular my study is of value with regard to the interplay between the polyphony of voices that an individual may use, how the voices change, and how different ones dominate at different times, particularly with regard to audience. I have also demonstrated the value of a “visual narrative” and discussed how visuals are used in the development of theory and with regard to a written narrative.
Validity and significance: The Validity Crystal

Like a copper sulphate crystal, growing irregularly on a string, my story has slowly crystallised. It has grown from a “short case study” of my work with a year 7 group, to a multi-voiced narrative covering the work of one teacher over 6 years. It has seen the development of a living curriculum educational theory of practice from the idea of an holistic learning lattice.

Earlier in the methodology chapter I discussed validity in some detail. Indeed over the course of this study my thoughts have further crystallised as I have considered the value and trustworthiness of this study. There are many facets to validity that need to be mentioned. I now consider the crystal of validity to have the 24 sides of a tetrahexahedron. The 24 facets to validity that I see include trustworthiness, plausibility, substantive contribution, coherence, outcome validity, pragmatic use, transparency, trail of evidence and documentation, aesthetic merit, presentation, process validity, methodical path, democratic validity, real life, catalytic validity, meaningful dialogue, persuasion, the fostering of social justice, impact, critical self awareness, emerging living theory, the reflexivity, dialogic validity and the detailed narrative that closes in on the everyday. (See Herr and Anderson, 2005, Richardson 2005 and Riessman 2008). My study, can be examined against each of these facets of validity, to measure the value of the narrative and the emergent theory and my thinking on curriculum and methodology. In the following table (figure 72) I reflect on each of these facets. I recognise that I am not the first to have used the ideas of crystals when discussing validity, as both Richardson (2005) and Riessman (2008), have explored images of crystals and crystallisation.

<table>
<thead>
<tr>
<th>Validity Facet</th>
<th>Reflection on Validity Facet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trustworthiness</td>
<td>Data has been collected ethically with attention to detail</td>
</tr>
<tr>
<td>Plausibility</td>
<td>Outcomes were predictable, feasible and over time implemented</td>
</tr>
<tr>
<td>Substantive contribution</td>
<td>Contributions have been made in a range of contexts and scales from the local to international.</td>
</tr>
<tr>
<td>Coherence</td>
<td>The narrative is chronological, detailed and comprehensible. It tells the story of my work to develop and implement</td>
</tr>
<tr>
<td>Outcome validity</td>
<td>Outcomes have been achieved at the school level with regard to detailed curriculum documentation, changed pedagogy and improved practice. Theory is being shared at the tertiary level.</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pragmatic use</td>
<td>The living curriculum theory documented here has been expressed in practices used at the school and also in other secondary and tertiary settings.</td>
</tr>
<tr>
<td>Transparency</td>
<td>Access to all original data is available through the appendices and original case study for this study.</td>
</tr>
<tr>
<td>Trail of evidence / documentation</td>
<td>Ideas, models and practices have been clearly documented in the case study and the supporting journals.</td>
</tr>
<tr>
<td>Aesthetic merit</td>
<td>This narrative has used a form of “messy text” to illustrate the various voices of the author and this has added aesthetically to this study. A visual narrative further enhances the aesthetic merit of the study. Gardening and geologic metaphors add another dimension to the writing.</td>
</tr>
<tr>
<td>Presentation</td>
<td>Material presented has used a visual narrative alongside the written “messy text” to communicate ideas, add interest and appeal to the different learning styles of readers and the varied audiences for this work.</td>
</tr>
<tr>
<td>Process validity</td>
<td>An action learning cycle incorporated within a detailed narrative using a wide range of validity facets has been used. Alongside this 2 critical friends have added another dimension.</td>
</tr>
<tr>
<td>Methodical path</td>
<td>The study has been conducted chronologically and methodically. The evolving methodology has been described as it emerged.</td>
</tr>
<tr>
<td>Democratic validity</td>
<td>Outcomes for students have been positive with a more rigorous, documented, differentiated curriculum supporting student learning, and an emphasis on access and success for all students being reflected in the underpinning values of the school and the writer.</td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Real life</td>
<td>This insider practitioner study has been conducted within a school and includes my work as a classroom teacher, curriculum innovator, leading teacher and researcher across many years.</td>
</tr>
<tr>
<td>Catalytic validity</td>
<td>This study and the emergent living curriculum theory led to changes in practices across the whole school with regard to curriculum design, documentation and implementation. It clearly brought about change in the local context. The theories have now been taken into other contexts and are being applied currently as part of teacher training programs at Victoria University.</td>
</tr>
<tr>
<td>Meaningful dialogue</td>
<td>The narrative and the emerging living curriculum theory led to much dialogue at the school level, as practices and policies were changed. Dialogue occurred also at conferences when papers and presentations occurred. Dialogue also occurred with critical friends outside the school setting. Dialogue is on-going in a Tertiary setting.</td>
</tr>
<tr>
<td>Persuasion</td>
<td>The narrative aims to persuade the reader of the value of the living curriculum theory through a detailed description of the context from which it emerged and a description of its emergence. The reflections on narrative add to the growing discussion on the value of using narrative in qualitative research.</td>
</tr>
<tr>
<td>The fostering of social justice</td>
<td>Working in an under-resourced and significantly disadvantaged setting, this study has assisted in improving outcomes for students through the development of a more rigorous and challenging curriculum, that increases student access to success.</td>
</tr>
<tr>
<td>Impact</td>
<td>The study has had a significant impact at the local level in the improved curriculum design and pedagogical practices. It has also influenced discussions in neighbouring schools. “A good narrative analysis prompts the reader to think beyond the surface of a text, and there is a move toward a</td>
</tr>
</tbody>
</table>
Critical self awareness

The narrative has given me a clearer understanding of my own living curriculum theory. It has led to me developing a better understanding of myself as a teacher and curriculum designer. I have become a much more reflexive teacher during this study.

Emerging living theory

This is study has led to the emergence of my own living curriculum theory which was constructed and shared within my particular school context. This theory is now being shared more widely through my work as an educator at the tertiary level and in other educational settings. The publication of this thesis will see it being shared ever more widely.

The reflexivity

Reflections and reading throughout this study along with the use of an action learning cycle have led to me becoming a more reflexive teacher and researcher. Actions rather than mere thoughts have occurred with the presentations and publications that follow from this work. Change from cycle to cycle has been an important part of my growth and the emergence of more valuable and significant thoughts and practices.

Dialogic validity

Dialogue with others has led to increased understandings and changes in thinking. The emergent theory has more value and continues to grow through on-going discussions.

The detailed narrative that closes in on the everyday.

This study has provided a detailed narrative following my work in my various roles. In writing of the everyday work in these areas I have provided an insight into life as a teacher and curriculum leader working in the first decade of the 21st century.

Figure 72 Validity Crystal facets and reflections

If we arrive too late to tell the truth(s) about ourselves – or arrive too late to capture a holistic, authentic narrative that tells it all – then
there are other things happening in the moment of truth-telling. (Jackson 2009, p.173)

Hopefully I have not arrived too late – I have told a detailed and authentic tale about the work that I, as a researcher and teacher, have completed. It is holistic in its character, covering aspects of my life in and out of the classroom, constructing and implementing curriculum in a specific context.

To support theoretical claims, students must demonstrate how they developed and/or used methods appropriate to their research questions, epistemologies, and situated perspectives. Students need to document their sources, and bring the reader along with them as they uncover a trail of evidence, and critically evaluate each piece in relation to others. From the cumulative evidence, the student can then construct an interpretive account of his or her findings, storying the stories collected. (McCormack 2004, in Riessman 2008, p.188)

It has been based on many years of records and visuals that have told my story and that have given rise to my own living educational theory. “The telling itself produces truth” (Jackson 2009, p.169)

**Some thoughts on writing reflections**

The narrative as written allows me to explore “the three-dimensional narrative inquiry space and the “directions” this framework allows our inquiries to travel-inward, outward, backward, forward, and situated within place. (Clandinin and Connelly, 2000, p.49)

My reflective writing is at the heart of my developing personal theory. As I am reflecting upon my readings, discussions and practical experiences I am developing my own living educational theory. I particularly like the framework that was proposed by Clandinin and Connelly (2000) in which they identify a number of directions that reflections can take, inward, outward, backwards and forwards. They also identify the importance of context influencing your thinking, and this can of course change your thinking, as the context changes.

In looking inward, I am exploring my own values, questioning them, identifying and evaluating them. I also identify and ponder my position on an issue, a question or a theory, and evaluate and alter my position over time with more
information and understanding. In looking outward, I am examining an issue in a broader context, looking at it in its social context. Moving from the local to the general and looking at the wider implications. I may be looking at state, national or international trends and reflecting upon their impact at the local level, or alternatively looking from the local level for wider implications. In looking backwards, I may be re-examining past experiences, reviewing them and bringing new interpretations and understandings. I can discuss a change of position on an issue or theory. The rationale behind this may be reviewed and how my position has changed.

In looking forward, I may be re-imagining or envisioning a change in my current view, or a change in my current practices. I may be developing a concrete view of what my own classroom or school should be like, the characteristics of the learners I want to develop in my classroom, and the programs I want to incorporate. I may be envisioning the processes of learning, the strategies I want to use for teaching, or the types of assessments I want to see. It may involve a change from what I am doing currently, to what I want to be doing in the future, based on an evaluation of current positions and practices. These changes reflect my developing living educational theory.

In writing this thesis the different voices have to some extent been reflecting differently. Figure 73 identifies possible directions for each voice. The practitioner is shown predominantly looking back on work/practice, reflecting inwards and also planning and envisioning a future for the school. The practitioner may also look outwards for ideas to bring into their context. The narrator looks back and outward to identify areas of significance from within the study. On occasion this voice also looks into the future in terms of this study, linking what has occurred, to where it is going. The metacognitive voice has reflected in the 4 different directions. The time arrow represents time passing, and portrays different voices operating predominantly at different times, across the study.
Reflexivity and my narrative
This study is reflexive in its nature. As I have collected data through my action learning cycles, planning, acting, reflecting and evaluating, I have gone on to change implementation for the following year. I have not merely reflected, but changed policies and practices, as a result of my reflections, analysis and evaluation. The narrative has been an integral part of this reflexive process. Pedagogy and curriculum have been redesigned, throughout the narrative, as I have documented thinking and action. The process of writing the theory has impacted the practice, and conversely the process of writing up the pedagogy, has influenced the narrative form and content.

I have been reflexive in my writing, data analysis and the writing up. As I have developed new understandings these have been incorporated into my writing. As I have written the case study I have developed these understandings and incorporated them into new theory. As I have analysed my work I have changed it, to try to continuously improve what I do and how I do it. I have shared ideas with colleagues, and incorporated feedback from them and my critical friends, to improve thinking. As I have written up my work, at that time I have tried to develop and improve understanding. As I have edited, I have tried to synthesise my ideas and improve understanding. My final write-up brings together the thinking from 8 years, the analyses and conversations, to present a detailed picture of this complex story, within the confines of this thesis.
Narrative construction
I have constructed this narrative using my case study, journals, graphics and other documents. The final version in this thesis has been edited mostly from my own earlier writings. Indeed, the process of editing down my journals, and keeping my original words, has been a difficult and time-consuming task. Many stories were told in the complete case study, that have by necessity, had to be removed, as I have tried to tell the story of curriculum construction and implementation, in detail.

Chronology, coherence, depth and living theory
Depth increases understanding through the insider detail that has been included. Rich data collected through the 6 years of the case study provides a valuable insight into my curriculum work at a variety of scales. The depth of writing and thinking provides an input into my models and living curriculum theory, how they have developed, and what they include. The story has been generated chronologically and then edited at a later date. Elements of the theory have been described, as they have been identified. Other elements have evolved and changed with experience and through the action learning cycles. An on-going process of improvement has been followed. Indeed a praxis-like process has been followed with practice described, practice explained, practice theorised and finally practice has been re-imagined and changed. (Cacciattolo et al. 2006)

This narrative has been kept intact chronologically. Despite much editing, an effort has been made to keep the story as accurate as possible, by use of my own voice. This provides detail and tracks the emergence of ideas. The intertextuality can be accessed through my records of thinking and the timing of my ideas. My thinking can be tracked over the time of this project. Ideas have been identified and often portrayed through the visuals, as well as in the written narrative.

Narrative analysis thoughts
Editing this narrative has been difficult. It has been hard to exclude some descriptions and writing whilst keeping the detail and story intact. I have selected the main themes and concentrated upon them. Other themes have been edited out. This is my story. My analysis is a subjective one as I look back
upon my writing. My original writing represents my best understanding, observations and thinking at that time. As I have edited this original text at a later date, this editing and analysis represents my interpretation, at that later time. This interpretation and analysis comes with hindsight of what has occurred, and is influenced by new voices from my more recent reading (a new intertextuality). Much of this analysis remains intuitive and contextual, as I reflect upon what occurred and why. Narrative has appealed as a natural form of research; it has evolved out of my original insider practitioner action research. It is one that provided possibilities for my polyphony of individual voices.

My insider, practitioner narrative has been shaped in the one context of time and place. It is my case study written during the first decade of the new millennium. It has been edited to retain the story, highlight the development of theory and the emergence of my voices. “Narrative scholars keep a story intact” by theorising from the case rather than from component themes (categories) across cases.” (Riessman 2008, p.53). Within this study I am theorising across the 6 years of my case study, at the one school. This narrative has detailed the school world as I have known it. It is a construction of mine. It is the world seen through my eyes. “Narrative truths are always partial-committed and incomplete.” (Clifford 1986, p.7 in Riessman 2008, p.186). It has been a subjective view of the processes of curriculum design, classroom pedagogy and school-based education. The narrative reflects my identity as I have known it, as I have explored it and as I have grown it. My emergent voices have evolved and grown with understanding as I have read, listened, observed and written.
Chapter 6 Conclusions

This study has been investigating the question - how does a participant agent encounter, develop and process theory and ideas to develop curriculum in their role as teacher and curriculum leader, during an educational transgression? This question has led to three specific research goals, which have been explored during the course of the narrative: In this chapter I present my conclusions with regard to the research question and the 3 goals. I summarise what I have learnt and share ideas that may have wider applications.


- A significant educational transgression has been occurring over the first decade of this century, as one paradigm has been replaced with another. Characteristics of this transgression will vary across schools, but key elements including changes in pedagogy, assessment and curriculum are occurring across all schools. In my setting, here in Victoria, there have been dramatic changes in the type of pedagogies used, the forms of assessment and the model of curriculum.
- Teachers are facing ever increasing formal and informal demands. Past models of curriculum and processes of curriculum design are no longer adequate to meet all these demands. In Victoria there have been calls for changes in the use of ICT, pedagogy, assessment, curriculum and reporting. A new model of curriculum has been developed, based around the learning lattice developed by the author, to meet these demands.
- There is an increasing understanding of the art and science of teaching and its complexity (pedagogy). Greater use of research data is being made in schools. Teachers have had to respond to the increased availability of this information and consequently modify their pedagogy. In my school, we have tried to keep the best of the older and successful pedagogies, and meld them with new strategies and increased use of ICT, to support them.
• There is a need for the development of new processes of curriculum
design that cater for the greatly increased demands of 21st century
pedagogy, assessment and reporting. Embedding new understandings
and meeting increased demands, has led to the development of
increasingly sophisticated and complex models of curriculum and
curriculum design, in my setting.
• Curriculum design characteristics have changed, and 21st century
characteristics were summarised in the last chapter (see page 248). At
my school new characteristics such as a more holistic, integrated,
flexible, systemic and adaptive approach was incorporated into our
processes.

Goal 2: An insiders’ examination of the complex processes and
practices involved in designing and implementing 21st century
curriculum within an educational transgression.

• Curriculum design and implementation are complex processes that
require a new and more holistic approach. As a result of this
understanding, curriculum design and implementation, require a more
rigorous and systematic approach, to support a sustainable model of
curriculum implementation, and integrate many of the innovations that we
consider important elements of our curriculum. The approach to
curriculum design also needs to meet the increased expectations of
governments with regard to teaching, assessing and reporting.
• Teachers today are designers of curriculum rather than mere
implementers of other people’s curriculum. The curriculum itself, with the
ever increasing amount of knowledge available to us, for example
through the growth of ICT, and increasing demands to include other
areas and domains, has also grown. Individual teachers consequently,
make decisions about what to focus strongly upon, what to include and
what to leave out. These decisions are made after discussions with
colleagues and referral to external and internal curriculum
documentation, but are finally made by the individual teacher. They are based upon government, school, faculty and individual priorities.

- There is a need for, and I have described, a living curriculum educational theory that incorporates 21st century curriculum design characteristics. The learning lattice, that has been developed, is both a model of curriculum and a framework for curriculum design, that incorporates these characteristics.

- Clear processes for curriculum design have been proposed and summarised through text and graphics. These processes are detailed and reflect my Victorian context. The underlying structures and processes could easily be adapted for other contexts.

- Sustainability of innovation requires the careful and systematic embedding of innovations into the curriculum and curriculum design process. This should be supported by planned professional development and aligned with a clear and living school vision. Understanding and responding to identified blockers and drivers is a key to successful implementation. Examples of the embedding of milestones, selection of appropriate professional development strategies, a clear vision, using important drivers and planning for potential blockers, has occurred across this narrative.

- Personalising and differentiating the curriculum requires a carefully planned, complex, rigorous and documented curriculum to achieve positive outcomes for all students. It does not occur overnight, but with the use of ICT and carefully designed professional development, teams of teachers working collaboratively and with appropriate resourcing, it can be achieved in a secondary setting such as that discussed.

- Visions of the classroom, classroom practice and schooling have a critical role to play in curriculum design and implementation. Taking the time to develop and share a vision of classroom teaching, the curriculum and the school itself, is an important element in constructing and planning for quality curriculum.
Goal 3: A documentation, analysis and interpretation of the process involved in completing this narrative.

- Practitioners can develop valuable theory and document this, through the use of a narrative such as this. The living curriculum theory (a theory of practice) generated through this narrative, has contributed to learning in both a school setting, and with a wider audience. Practitioners and other researchers, have the opportunity to see what has worked in one setting, and consider it for their own different settings.
- The thesis has provided a model for other researchers to adopt with its innovative approach to data presentation. This has included the use of the 3 research voices and a form of ‘messy text’.
- The diagrams, that have been included within this research, can to some extent be regarded as a form of visual narrative. As such this visual narrative can be valuable for constructing and presenting both theory and practice. The visual narrative, included alongside the written narrative in this study, has shown how ideas have developed, how they may be communicated and just how complex the world of teaching has become.
- Reflexive practice can make a valuable contribution to educational research. In this study practice has been imagined, described, reflected upon, evaluated, theorised, changed and re-imagined. This reflexive or praxis approach has been at the centre of this study, and the data produced, the discussion and commentary, as well as the final outcomes identified above reflect its value.

My rationale for writing
During this study, I have written extensively in my journals and my case study, and simultaneously developed ideas through my visuals. I have observed, reflected and acted, to create improved learning environments and ideas for future learning. I have not written systematically at the end of each day, but instead have written regularly as ideas, materials and processes developed, articulating how these came about, and the rationale for them.
I have written for understanding. My first audience was the case writing group. After this my main audience has been myself. As I have developed ideas, I have then shared them more widely, initially with colleagues, my curriculum teams, critical friends and then with a wider audience. I have written to convince audiences of the value of my ideas, to share the ideas and improve practice. The writing has often reflected a praxis approach, with initially a description of practice, followed by some explanations, then some theorising and lastly a change in practice, as I attempt to improve upon past experience.

My writing has been both data for the study and the developing understanding. My living theory has emerged in the writing and in the construction of my visuals. The writing has provided me with much data, the 6 year case study and writing since, has seen my understanding grow. The intertwining of the theory, practice and analysis, as described in the writing, has been at the heart of my study.

Limitations of my study
There is no general theory for curriculum design being claimed from this study. The models developed within my living theory have been applied successfully in a context, and may have applicability in others, depending upon their circumstances. Interest has been expressed at conferences. The discussion of narrative issues has also grown from my specific context.

Endings and Beginnings
We often don’t know the outcome of a narrative event. My formal and systematic data collection was completed at the end of 2008 at a time when I had sufficient data and my period as a leading teacher at the school ended. I continued to reflect upon my data, analyse it and refine my theory after this time. As a chronological study an end point had to be drawn. Indeed at the end of 2009 I left the school and moved into a tertiary setting and have started to apply my ideas in this new context. This has certainly been a new beginning and provided a new audience for my living curriculum theory.
Post –script - What has happened to the transgression?

At school in 2009

2009 turned out to be my final year at Green Gully. After 31 years I made the difficult decision to retire from the school, and move on to a position at a local university, to teach young teachers. 2009 saw me teaching year 7 Integrated Studies and VCE geography for the last time. I was also the curriculum team assistant working closely with the curriculum and teaching and learning co-ordinators. Our roles related to the strategic and annual implementation plans (which had replaced the school charter of 10 years earlier), and specifically focused on curriculum documentation, classroom pedagogy and assessment. The year saw achievements in each of these areas, with more time spent in teams completing curriculum documentation, exploring moderation practices, the development of a Green Gully Learning Cycle (see figure 76, page 315), the opening of Nindethana our year 9 Flexible Learning space and greater use of the 3 forms of assessment (for, as and of). I was actively involved in discussions in each of these areas.

I spent time during the year reflecting back upon the changes that had occurred, supporting the curriculum documentation process and also looking forward, envisioning where we were going. In particular I focused on the implications of the forthcoming National Curriculum (see lattice in figure 75), and the possibilities of scope and sequence charts for skill and concept development within disciplines (see geography example in appendix J, page 346). The
Thinking skills refers to a range of kinds of applied intellectual activities that are involved in using information to achieve outcomes. They include elements such as solving problems, making decisions, thinking critically, developing an argument and using evidence in support of that argument. Thinking skills constitute the core of most intellectual activity.

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<thead>
<tr>
<th>Bloom/Anderson Levels</th>
<th>Multiple Intelligences</th>
<th>Habits of Mind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating</td>
<td>Visual/picture</td>
<td>Striving for accuracy, Thinking about thinking</td>
</tr>
<tr>
<td>Evaluating</td>
<td>Linguistic/word</td>
<td>Gather data using all senses, Questioning and posing problems, Respond with wonder and awe, Persistence, Taking responsible risks</td>
</tr>
<tr>
<td>Analyzing</td>
<td>Interpersonal/people</td>
<td>Communicating with clarity and precision Thinking and working interdependentlyThinking flexibly, Finding humour, Managing impulsivity, Listening with understanding and empathy, Applying past knowledge to new situations, Remain open to continuous learning</td>
</tr>
<tr>
<td>Applying</td>
<td>Logical/number</td>
<td>Create, imagine, innovate</td>
</tr>
<tr>
<td>Understanding</td>
<td>Intrapersonal/myself</td>
<td></td>
</tr>
<tr>
<td>Remembering</td>
<td>Naturalistic/music</td>
<td></td>
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<tr>
<td></td>
<td>Kinaesthetic/body</td>
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</table>

Teamwork enables a student to work effectively and productively with others. It includes working in harmony with others, contributing towards common purposes, defining and accepting individual and group roles and responsibilities, respecting individual and group differences, identifying the strengths of team members, and building social relationships.

<table>
<thead>
<tr>
<th>UNIT TOPIC</th>
<th>GOALS/ESSENTIAL QUESTIONS</th>
<th>Key Concepts</th>
<th>Key Skills</th>
<th>Assessment for Learning</th>
<th>Assessment of Learning</th>
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<tbody>
<tr>
<td>LINK TOPIC</td>
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Numeracy knowledge, skills and understanding need to be used and developed in all learning areas. Initial and major continuing development will be in English but the national curriculum will ensure that this competency is used and developed in all learning areas.

| ICT skills and understanding are required for all learning areas. Some aspects of ICT competence are as much about information management as about the use of technology, so an important aspect of the competence is the ability to evaluate the source, reliability, accuracy and validity of information that abounds in cyberspace. New digital technologies are used in creative and artistic pursuits, and in civic and political activities. These opportunities for private and public expression, unimagined half a generation ago, will make up important elements of the national curriculum. |

Creativity enables the development of new ideas and their application in specific contexts. It includes generating an idea which is new to the individual, seeing existing situations in a new way, identifying alternative explanations, seeing links, and finding new ways to apply ideas to generate a positive outcome. Creativity is closely linked to innovation and enterprise, and requires characteristics such as intellectual flexibility, open-mindedness, adaptability and a readiness to try new ways of doing things.

<table>
<thead>
<tr>
<th>Discipline : content, concepts and skills</th>
<th>Ethical behaviour</th>
<th>Social competence</th>
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<tbody>
<tr>
<td></td>
<td>involves students understanding and acting in accordance with moral and ethical principles. Ethical behaviour includes the willingness, determination and capacity to think, make judgments and behave independently. It includes identifying right and wrong and having the willingness, determination and capacity to argue the case for change; understanding the place of ethics and values in human life; acting with moral and ethical integrity; acting with regard for others; and having a desire and capacity to work for the common good.</td>
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<td></td>
<td>Cross-curriculum perspectives</td>
<td>will enable students to interact effectively with others by assessing and successfully operating within a range of changing, often ambiguous human situations. It includes initiating and managing personal relationships; being self-aware and able to interpret one’s own and others’ emotional states, needs and perspectives; the ability to manage or resolve conflicts and to foster inclusive and respectful interactions; and participating successfully in a range of social and communal activities.</td>
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<table>
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<tr>
<th>UNIT TOPIC</th>
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<td>LINK TOPIC</td>
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Habits of Mind

- Striving for accuracy, Thinking about thinking
- Gather data using all senses, Questioning and posing problems, Respond with wonder and awe, Persistence, Taking responsible risks
- Communicating with clarity and precision
- Thinking and working interdependently
- Thinking flexibly, Finding humour, Managing impulsivity, Listening with understanding and empathy, Applying past knowledge to new situations, Remain open to continuous learning
- Create, imagine, innovate
The “Green Gully” SC Learning Cycle

This learning cycle is researched based, and reflects how students learn effectively. It forms the basis for delivering an effective lesson. An excellent practitioner will be able to think flexibly about how to best apply the stages of the learning cycle to their lesson. While all of the stages are important, for an effective lesson Stage 1 and 5 are essential. This is due to the way our brain remembers information at the beginning and end of an activity. Additional resources for each stage are attached, giving suggested times, indicators of excellence and assessment ideas.

1. **SET THE SCENE**
   - Link to prior knowledge
   - Provide the big picture
   - Share the learning objectives
   - Trigger the brain

2. **TEACH NEW INFORMATION**
   - Provide students with new information
   - Visual, audio, kinaesthetic
   - Explicit instruction

3. **PROCESS THE INFORMATION**
   - Making sense of information
   - Classroom instructional strategies
   - Search for meaning

4. **DEMONSTRATE AND ASSESS**
   - Show understanding in a number of ways
   - Assess understanding

5. **REVIEW FOR RECALL AND RETENTION**
   - Memory techniques
   - Revisit learning outcomes
   - Reflecting on how it has been learned
   - Feedback

Figure 76 The "Green Gully" Learning Cycle
introduction of an Australian National Curriculum will be a major change for schools, and at the same time has implications for education courses at university, where I was planning to move. Hence, I saw the value in making myself aware of the directions this curriculum is taking. The transgression continued during this year and is not yet finished...............  

**University 2010-2012**

2010, a new setting, and after so long at the one school truly a new beginning. It was the chance to work with a new audience, in a very different context. There has been the opportunity to share my living curriculum theory with a new community of learners and commence a new dialogue. I have enjoyed developing lattices for Tertiary education units, adapting the lattice I developed for the National Curriculum in 2009 into a format suitable for curriculum design at this level and using this as a model to share with PSTs. (See appendix G). Sharing my living curriculum theory and curriculum design principles with PSTs who are beginning their journeys as teachers has been very rewarding.
**Future directions for research**

I have listed below some potential directions/questions for follow-up research.

**Narrative Research**

- The use of electronic blogs for teacher narrative and insider practitioner research. There has been an increase in the number of teachers writing their own blogs in recent years. There is great potential for the use of these blogs in narrative and insider practitioner research, on many aspects of pedagogy and curriculum design.
- The value of visuals in teacher research. With changing curriculum requirements, specifically including the use of visuals for communicating ideas, many teachers are developing skills in their development and use. Much professional development uses them extensively.
- Diagrams as thinking tools (e.g. The use of concept maps, mind maps and other graphic organisers). Further exploration of the actual process of constructing visuals could be very valuable.

**Curriculum Planning and Implementation**

- 21st century curriculum planning characteristics and their wider implementation. How do we implement them successfully?
- The Learning lattice has been shown to be a very valuable planning tool for one school. How successful could it be in other contexts?
- The lattice as a tool for pre-service teacher education and a platform for 21st century curriculum design. An examination of the various models for curriculum planning that PSTs use would be an interesting project.
- Habits of mind and curriculum design. Just how valuable are the habits of mind in the curriculum planning process? What type of curriculum is generated when the habits are being used by teachers, both in the process of design and as criteria to evaluate the curriculum produced?
- The importance of a school vision for curriculum planning. Is it necessary to start with a curriculum vision that one can back plan towards? How are visions of schooling changing?
Consolidating and sustaining curriculum innovation remains a significant issue for schools. One strategy has been developed here. What other strategies can be effective for sustaining and embedding curriculum innovations?

It has been argued in this study that demands on teachers are rapidly increasing. How can we improve support for teachers to manage the increasing demands and complexity of education today?

Classroom learning environments in the 21st century classroom are changing rapidly particularly with the increasing use of ICT. How are the changing environments changing pedagogy? How can we support teachers through these changes?
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Appendices
## Appendix A: Curriculum Action Plan

<table>
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<tbody>
<tr>
<td>1.1 Numeracy Across the Curriculum</td>
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<td>4</td>
<td>4</td>
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<tr>
<td>1.2 Literacy across the Curriculum</td>
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<tr>
<td>1.3 Technology across the Curriculum</td>
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### 2. DoE Initiatives:

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<th>Term 2</th>
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<tr>
<td>2.1 Sport Education (Yr. 9 - 10) - Refer to 8.1</td>
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<tr>
<td>2.2 Evaluation &amp; Progress of Years 9 &amp; 10 Drug Education</td>
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<tr>
<td>2.3 Evaluation of timetabling of LOTE &amp; LOTE pathways years 7 - 10</td>
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<tr>
<td>2.4 Civics &amp; Citizenship Education</td>
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### 3. Assessment & Reporting:

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<th>Term 2</th>
<th>Term 3</th>
<th>Term 4</th>
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<td>3.1 Review of years 9 &amp; 10 Assessment Policy (in line with new VCE Assessment Practices &amp; CSF II)</td>
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<tr>
<td>3.2 Review of years 7 &amp; 8 Assessment Policy (in line with CSF II &amp; years 9 &amp; 10)</td>
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<tr>
<td>3.3 Review of Report Formats</td>
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<tr>
<td>3.4 Central Record keeping (CSF assessment recorded in all KLAS?)</td>
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<tr>
<td>3.5 Report Writing Software (Markbook, Reporter)</td>
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### 4. CSF II Implementation

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<th>Term 4</th>
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</thead>
<tbody>
<tr>
<td>4.1 CSF review of the Year 7 – 10 Curriculum (Fine tuning)</td>
<td></td>
<td>4</td>
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</tr>
<tr>
<td>4.2 Documentation of the curriculum in terms of CSF2 (in Department Handbooks)</td>
<td></td>
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<tr>
<td>4.3 Consistency in CSF assessment – ”Making Consistent Judgements in the CSF”</td>
<td></td>
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### 5. Enrichment & Acceleration

<table>
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<tbody>
<tr>
<td>5.1 Acceleration at Yr.10/11</td>
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<tr>
<td>5.2 Enhancement Studies – evaluation of the Yr. 7 Pilot Program</td>
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<tr>
<td>5.3 Evaluation of Year 9 Victorian Youth Development Program</td>
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<td>5.4 New Initiatives</td>
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### 6. VCE and VET

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<tbody>
<tr>
<td>6.1 Key Competencies</td>
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<tr>
<td>6.2 Bridging Programs</td>
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<tr>
<td>6.3 Apprenticeships &amp; Training</td>
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### 7. Yr.5-8 Transition:

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<th>Term 4</th>
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<tbody>
<tr>
<td>7.1 LOTE offerings</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>7.2 Numeracy &amp; Literacy Transition</td>
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</table>

### 8. 2001 Curriculum planning

<table>
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<th>Initiative</th>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
<th>Term 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Structure of the 7 – 9 Curriculum</td>
<td></td>
<td>4</td>
<td>4</td>
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<tr>
<td>8.2 New subject submissions</td>
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</tbody>
</table>
**Appendix B: TFU Ancient Civilisations Unit**

**Unit Topic**: Comparing Life today with that of a selected Ancient Society

Use strategies to select resources, locate, interpret and synthesise key information and ideas from a range of texts. Describe key aspects of the daily life of people and key social features in ancient societies and analyse the ways in which ancient societies were governed. Compare the ancient civilization with life today. To improve their use of ICT, habits of mind, questioning skills and managing their own learning.

Key ideas: the concept of Change over time and the skill of compare and contrast

---

### Description of Key Understanding Performance

Select one or more from the following:

- An oral presentation on the topic
- A play with 2 scenes, one set in an ancient time and the other today
- A powerpoint presentation contrasting life in ancient times with life today
- A set of posters comparing life in ancient times with life today
- A set of brochures outlining a trip to an ancient civilization and a trip to Austalia in 2005
- A research report comparing and contrasting the 2 civilisations
- 2 diaries completed in the present and the past recording events/descriptions experienced by an individual over a year.

Using one of the formats suggested above students should compare life in an ancient civilization that they have not previously studied with life today. They might include discussions of families, homes, occupations, buildings, entertainment, schools, daily events, festivals, an important historic event, government, religions and religious ceremonies.

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### Assessment

Each of these performances should be assessed using a rubric. The rubric should be developed in Consultation with the teacher. We will start the process of rubric generation using past rubrics for posters, powerpoints and research projects. The rubrics will incorporate the use of habits of mind such as using past knowledge to develop new, working interdependently and thinking and communicate with clarity and precision. They will need to keep a record of their activities as they progress through the unit.
Appendix C: Marissa – A scenario
- up-dated 6/4/06

"Marissa logged onto the school web site at 9.00am from home as it was one of the days when she did not need to be at the school campus until later in the day. There was an email from John letting her know that he had submitted his multimedia project on Tsunamis on time. John was one of a group of 14 students that had Marissa as their mentor or learning manager. Each of the 500 students at Green Gully had a learning manager who was responsible for their Individual Learning Plan. The school was much smaller than it had been back in the days when Marissa’s father had worked at the school! Indeed all schools were smaller as this was seen to be more effective for developing the learning community ethos. In fact the school only had 600 students from year 7 to 9 with students leaving this campus for the senior campus to commence their later years VCE or VCAL programs.

Marissa accessed the project of John and at the same time opened up the link to the rubric that John had constructed and attached to the project. Most of the criteria were the standard ones that were available on the school web site but John had added some specific question criteria looking at higher order questions evaluating the quality of the responses to tsunamis before and after the tragic event of 2004. His key questions covered descriptions of the causes of tsunamis, their effects at a range of scales and the varied responses of governments and non-government agencies and authorities. He had attached selected film clips of the effects and responses and provided a powerful sound track using an old song of Eric Clapton “Tears in Heaven”. The project was of a very high standard with the exception of the bibliography which had been rushed and only used two types of sources instead of the expected 4. Details of each type were complete and Marissa made a note of this on the rubric. Marissa knew that John would be anxiously awaiting feedback so she was careful to complete her assessment then so that John could read her comments at lunchtime once his morning tutorial was over. Generally speaking she had agreed with much of his self assessment and the peer assessment provided by Tan. She was careful to give him feed forward to improve his learning on the next task.

At 11.50 Marissa had the tutorial with her 14 students and today she was planning a session on using mind maps as a tool in summarizing chapters in books. She smiled as she planned this session thinking back to the books of mind maps she had once seen her father putting together as he planned his research! She had since found them to be a very useful tool and had used them in particular for revision as she had completed her own formal education. This reminded her about the on-line session on up-dating and refining search tools for the internet, that she needed to complete this week, as part of her latest PD module. Although she only had 12 periods of formal student contact time each week there was a requirement of all staff that they complete a minimum of 4 hours of formal PD each week in aspects of their curriculum specialities, pedagogy or use of ICT. The emphasis at the school was very much on the processes of learning as the school regarded itself as a learning community.

As she was planning her tutorial Marissa re-accessed John’s ILP and suggested that he add the Tsunami project to the gallery within his learning journey as an example of his high quality work. This meant that he copied the project from his general work folder across into the display portfolio (gallery) that contained the best of his work across all subjects over the last 3 years. At the end of his 6 years schooling he would have an excellent portfolio to take away that traced his learning journey. John would also be discussing this project at the forthcoming 3 way student-parent-teacher interview that was coming up next week. Marissa always looked forward to meeting the parents of her 14 students as the presentations and discussions were so interesting and

This is an example of writing in a different style. Here I have envisioned a scenario set in the future…..
rewarding. She remembered only too well those boring sessions at her old high school when she would rather chat or watch TV than attend a Teacher-Parent interview.

When Marissa arrived at the school she parked next to the soccer field that had recently been named ‘The 2 Roberts’ Field after the success of Mr. X and Mr. Y at the National Futsal championships where they had won a combined 12 national and state titles in the last 15 years. Passing the Principal Mr. De Ros who was heading into his administration building that was looking a little dilapidated and in need of its latest up-grade she went to her desk. She opened up her notebook and immediately accessed the network, it was great that there were no cables cluttering up the space and her latest battery lasted 24 hours so she could recharge tonight. She had unfortunately picked up an extra at 1.30 but all the work instructions were there as Mark had emailed all information needed last night. Students were to access their ILP, go to the accounting link and continue where they were up to. He also wanted them reminded to check their calendars as their practice on-line accounting exam was planned for Wednesday. Revision hints, past papers and marking criteria were available under the assessment menu.

Later that day after her extra, Marissa opened her emails and found a request from Thanh for a reference. She opened up Thanh’s ILP and found information on her interests in the student profile. She then checked out her learning skills and in particular her self and teacher assessments of the Habits of Mind that the school had been using over about the last 15 years. These sections gave her lots of ideas about what she could include in the reference and then she highlighted some of her achievements after checking Thanh’s display portfolio. The portfolio included a video clip that showed the great performance she had put in during the 40th Anniversary Mac performance last year when she had sung with the staff band featuring Teacher 5 (out of retirement again and not looking a day older!) and several other past and present teachers. There were also pictures of the art she had completed and the dress she had designed and constructed. With all this information at her finger tips it was a pleasurable and easy task to write an excellent reference.

Her last formal teaching of the day was up in the three storey building in the recently renovated theatrette. Here she was presenting to a senior class a session on analyzing the themes in a novel. She had always enjoyed discussions of novels and although somewhat intimidated at first at the idea of presenting to almost 100 students she now enjoyed these sessions and in particular the questions and discussion that could follow. The data projector allowed her to make good use of film clips, quotes and images to enrich her presentation. There was also the electronic discussion that would occur over the next few days on the network and that allowed other staff and students to contribute.

When she returned to her desk after the lecture she checked the electronic bulletin board for information on PD, student or staff notices. She also checked the curriculum section to see if feedback on any issues was required. She noticed a new paper on the welfare issues of our latest refugees from Korea had been posted by Wendy and made a note to read this tomorrow.

On her way home Marissa decided that she should include part of the video of her presentation in her own professional portfolio. It was handy the way that the presentations were recorded for students to access for revision or if they were unable to attend. One of her students with learning difficulties often missed these sessions but always took advantage of the recordings so that he would be prepared for the exam at the end of the year.

Tonight Marissa was working on her lesson sequencing and assignments on the final Harry Potter book. Even though the book had been published more than 10 years ago and everyone knew what happened to Harry, her younger students still really enjoyed it. She would put the work on the LAN later this week ready for students to begin working on over the next 2 weeks. The work and companying assessment sheets were scaffolded to allow
success for all her students and also for them to work in a variety of ways. She enjoyed trying to be creative and allow students to present through different media taking advantage of their different learning styles and multiple intelligences. The focus of most of her work was on creating interesting lessons for students to work on from home or at school. Access to their ILPs/learning journeys from home at any time as well as from anywhere in the school on their cheap notebooks or the school computers made learning a different proposition to what it had been back when her father had taught at the school. Access to the school network also meant that Marissa could see what other creative staff such as Rose or Rosemary had developed for their English work. Sharing of the workload had been a very important contribution to curriculum development within the school. The school LAN and internet gave access to a huge range of curriculum choices at the full range of levels that made it much easier to engage students in more relevant or authentic tasks.

Tomorrow 4 of her 14 students were heading up to Strathbogie for their month at the campus. The students always looked forward to their time here as the latest camp coordinator always planned an interesting range of activities. The latest community based projects included working with a landcare group that had resulted in more than 5000 trees being planted to reduce salinity and a breeding program to support the re-introduction of endangered trout cod into the local creek. Students were up-dating their contributions on the camp web site and then transferring work into their learning journey galleries. They were keeping in contact with family and friends back in Green Gully through the internet.

As she left the school Marissa passed a group of final year students arriving for their scheduled maths class in the cool of the evening. Lucas their maths teacher would not be required until 1.30 tomorrow. The school remained open for classes until 8.00pm much like her university had done. There was also a group of Korean parents arriving to use the computer laboratory for language or computer classes. The school had truly become a learning community over the last decade!” (Case writing 2006)
## Appendix D: Year 8 Antarctic Extended Written Response Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The essential questions and key concepts</strong></td>
<td>I have discussed each of the essential questions. I have correctly used at least 6 of the key concepts listed above.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
</tr>
<tr>
<td><strong>The sustainable future of Antarctica</strong></td>
<td>I have listed at least 3 threats to the Antarctic environment. I have described the possible impact and effects of each of these threats on the environment. I have suggested ways in which each of these threats can be reduced, stopped or avoided altogether. I have written at least 2 paragraphs discussing each threat. I have made a suggestion about the future of Antarctica.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
</tr>
<tr>
<td><strong>Writing: Communicating with clarity and precision</strong></td>
<td>My writing has correct spelling, grammar and punctuation. My sentences make sense. My writing is written in the correct text type.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
</tr>
<tr>
<td><strong>Presentation</strong></td>
<td>I have a title page with my name, the teacher’s name, due date and name of the assessment task. I have a correctly laid out contents page.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td>I have 3 or more visual organisers used to show my data and planning. I have a timeline. I have 6 or more questions to research. I have conferenced with a peer at least twice and the teacher at least twice. I have detailed evidence of these conferences. I have drafted my work and I have made changes to improve work. I have used a variety of thinking tools, such as the Habs and Habits of Mind to help my planning.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
</tr>
<tr>
<td><strong>Bibliography</strong></td>
<td>I have 5 or more sources of information including both print and electronic types. Each reference has full details of the source.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
</tr>
<tr>
<td><strong>Self assessment: Thinking about your thinking, metacognition</strong></td>
<td>I have written a reflection talking about how I have used the Habits of Mind and I gave examples. I have completed a self assessment against the rubric as well as asked a peer to assess my work against the rubric.</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
<td>Self</td>
<td>Peer</td>
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</table>
# Appendix E: Unit Development Process and Questions

<table>
<thead>
<tr>
<th>Step in process</th>
<th>VELS Discipline strand</th>
<th>VELS Non-discipline strands</th>
<th>Habits of mind</th>
<th>Personalising Learning (including differentiating the curriculum, use of MIs, A4L and L2L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary stage</td>
<td>What gaps are we addressing? What current curriculum is being modified/replaced or updated? What is the VELS focus? What opportunities exist for integration? How will we use the POLT?</td>
<td>What domains will we target? What domains/dimensions are we expected to target? Will we target most domains or focus on a couple?</td>
<td>Are there any particular school expectations with regard to habits of mind to target at this year level or term?</td>
<td>What is the school context for this unit? Year level? How long will it last? How many lessons? What is the background of the students? What ICT access do the students and teachers have?</td>
</tr>
<tr>
<td>Decide topic/theme</td>
<td>Does the topic have potential to develop the non-discipline domains?</td>
<td>Does the topic have potential to develop the habits of mind?</td>
<td>Does the topic have potential to be personalised?</td>
<td></td>
</tr>
<tr>
<td>Brainstorm/mind map</td>
<td>What are our overarching understandings? What are our domain goals, skills and concepts? What are essential questions? Are the questions fertile? What concepts are we addressing? How are we addressing POLT? What are the VELS standards we are addressing? What values are we focusing on during this topic?</td>
<td>What are the VELS standards we are addressing? What domains will we target? What levels of thinking will we target? What communication standard will we address? How will we develop the interpersonal standards? What aspects of personal learning can we address? What ICT can we use in this unit? How can we incorporate D.C and T into this unit?</td>
<td>What specific and relevant habits of mind are we targeting to teach in this unit? What habits of mind are also relevant? What habits of mind will we assess? What habits of mind will students monitor their use of?</td>
<td>What MIs will we target? What existing discipline knowledge do the students have? What existing knowledge of habits of mind do the students have? What is their ability range? What interests do some of the students have that we can link into? What are the preferred learning styles of the group? What L2L strategies will be a focus? What skills do the students already possess? What are some possible assessments?</td>
</tr>
<tr>
<td>Finalise questions Document on lattice</td>
<td>Finalise goals, skills, concepts and EQs</td>
<td>Finalise goals, skills, concepts</td>
<td>Document habits of mind</td>
<td>Consider answers to above when documenting the unit</td>
</tr>
<tr>
<td>Assessment Document on lattice</td>
<td>What form(s) of summative assessment will we use? (AoS/L)</td>
<td>Will the summative assessment products developed cover these domains?</td>
<td>Will the summative assessment products developed, cover the habits of mind?</td>
<td>How will we differentiate assessment products or performances to cater for individual strengths and preferences?</td>
</tr>
<tr>
<td>Rubric development</td>
<td>What criteria will we use for the discipline? Do these criteria link to the standard and progression points?</td>
<td>What criteria will we use for these domains? Do these criteria link to the standard and</td>
<td>What habits of mind are we assessing? How are we assessing these</td>
<td>What feedback are we giving students during the tasks? What form of self and peer assessments are we</td>
</tr>
<tr>
<td>Activity development</td>
<td>What differentiated activities will we use to develop understandings? What will the “standard” program include? Are you focusing on the key questions and developing understanding for transfer?</td>
<td>How will we ensure development of understanding and skills in these non-discipline domains? How will we take advantage of student’s understandings of their own learning styles? How will students manage their own learning? What ICT activities will you use for visualising, creating or presenting? Do students have the opportunity to work in teams?</td>
<td>What activities will we use to develop skills in using the habits of mind? How will students document their use of the habits of mind during the unit?</td>
<td>What entry points will we use? Will we use an MI/Blooms grid? What will we do for students who already know 70% of the targeted content, goals or skills? How will we modify the curriculum? What flexible groups are you using?</td>
</tr>
<tr>
<td>Lesson development</td>
<td>Do you have a general lesson structure? Do you identify clear lesson objectives? Do you emphasise context? Do you relate to their world? Do you review at the end of lessons?</td>
<td>Does each lesson also have non-discipline objectives?</td>
<td>Do you take opportunities to use the habits of mind language in each lesson?</td>
<td>Does each lesson have a range of activities/resources using different learning and teaching styles? Do you refer to the rubrics regularly for instruction as well as assessment?</td>
</tr>
<tr>
<td>Implementation and documentation on breakdown planner</td>
<td>Have you documented in this area?</td>
<td>Have you documented in this area?</td>
<td>Have you documented in this area?</td>
<td>Have you documented in this area?</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Were all activities planned covered during the unit? What was the quality of the work?</td>
<td>Were all activities planned covered during the unit? What was the quality of the work?</td>
<td>Were all activities planned covered during the unit? Did students choose to use habits of mind appropriately? Did they develop their skills in using habits of mind?</td>
<td>How well was the unit differentiated in terms of entry points, the range of activities, the learning styles, readiness, ability and interest of students and assessment products? Was a range of MIs used during the unit? What AaSL, and A4L strategies were employed?</td>
</tr>
<tr>
<td>Up-date</td>
<td>Up-date the lattice and the breakdown planner</td>
<td>Up-date the lattice and the breakdown planner</td>
<td>Up-date the lattice and the breakdown planner</td>
<td>4/11/07</td>
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Appendix F: List of Questions considered for school visits

- Do teachers essentially still teach the one group at a time?
- How does student group size vary?
- Do you make use of teacher experts and construct larger groups at any times?
- Does any team teaching of groups occur?
- If team teaching does occur does it operate with 2, 3 or 4 teachers?
- Do all students study the same topic/unit/theme simultaneously?
- How do you manage resource location?
- Do any home groups have their own space within the flexible space?
- How is ICT used within the space?
- How do classes book/reserve areas?
- How much planning time (if any) do they need?
- How much planning time do teachers of the space get to plan what they are doing?
- Is this time scheduled formally or happens informally?
- What common protocols/expectations do you use with students (if any) with regard to:
  - Noise levels, Co-operative learning, ICT use, Movement, Behaviour/Discipline?
- Do you use flexible groups within classes?
- Do you use flexible groups across classes?
- How are these groups set up?
- Are they on the basis of Readiness, Interest, Ability, Multiple intelligences, Learning styles, ICT skill levels?
- What use is made of the Interactive Whiteboard?
- How/do the teacher team members upskill each other?
- Is any use made of student experts?
- Do the students have portfolios/ILPs? If so, how do these operate? When do students get the chance to work on them?
- Is there much teacher centred learning taking place?
- Is the focus on student-centred learning with students working at their own pace?
### Appendix G: Learning lattice for Tertiary B. Ed. Unit

<table>
<thead>
<tr>
<th>Thinking skills</th>
<th>Graduate Teacher Professional Standards</th>
<th>Habits of Mind</th>
<th>Teamwork</th>
<th>Literacy</th>
<th>Numeracy</th>
<th>Creativity</th>
<th>Intercultural understanding</th>
<th>Social competence</th>
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</thead>
</table>
| A range of kinds of applied intellectual activities that are involved in using information to achieve outcomes. They include elements such as reflection, solving problems, making decisions, thinking critically, developing an argument and using evidence in support of that argument. Use of the range of multiple intelligences for presentation, process and product. Use of all Bloom/Anderson levels including Remembering, Understanding, Applying, Analysing, Evaluating and Creating. | 1. Know how students learn and how to teach them effectively 2. Know the content they teach. 3. Know their students. 4. Plan and assess for effective learning. 5. Create and maintain safe and challenging learning environments. 6. Use a range of teaching practices and resources to engage students in effective learning. 7. Reflect on, evaluate and improve their professional knowledge and practice. 8. Are active members of their profession. | Sifting for accuracy, Thinking about thinking, Gathering data using all senses, Questioning and posing problems, Respond with wonder and awe, Persistence, Taking responsible risks, Communicating with clarity and precision, Thinking and working interdependently, Thinking flexibly, Finding humour, Managing impulsivity, Listening with understanding and empathy, Applying past knowledge to new situations, Remain open to continuous learning, Create, imagine, innovate. | Enables a student to work effectively and productively with others. It includes working in harmony with others, contributing towards common purposes, defining and accepting individual and group roles and responsibilities, respecting individual and group differences, identifying the strengths of team members, and building social relationships. Working together and communicating clearly the results of group work. | Knowledge, skills and understanding need to be used and developed in all learning areas. | Knowledge, skills and understanding need to be used and developed in all learning areas. | Enables the development of new ideas and their application in specific contexts. It includes generating an idea which is new to the individual, seeing existing situations in a new way, identifying alternative explanations, seeing links, and finding new ways to apply ideas to generate a positive outcome. Creativity is closely linked to innovation and enterprise, and requires characteristics such as intellectual flexibility, open-mindedness, adaptability and a readiness to try new ways of doing things. | Enables a student to respect and appreciate their own and others' cultures, and to work and communicate with those from different cultures and backgrounds. It includes appreciation of the special place of Aboriginal and Torres Strait Islander cultures; respect for Australia's multicultural composition; communicating and working in harmony with others within and across cultures, especially in relation to cultures and countries of the Asia-Pacific; and appreciation of difference and diversity. | Social competence will enable students to interact effectively with others by assessing and successfully operating within a range of changing, often ambiguous human situations. It includes initiating and managing personal relationships; being self-aware and able to interpret one's own and others' emotional states, needs and perspectives; the ability to manage or resolve conflicts and to foster inclusive and respectful interactions; and participating successfully in a range of social and communal activities. The ability to listen and communicate clearly to others in a range of situations.

### Literature Knowledge, Skills and Understanding

- **Appendix G**
  - **GOALS/ESSENTIAL QUESTIONS/OUTCOMES**
    - In AEB252 Science, Environment and Society, Preservice teachers will:
      - apply their understanding of how children learn in diverse ways to the fields of science, the environment and society and in their Project Partnership setting
      - develop an understanding of the inquiry in science, the environment and society and its application in curriculum, teaching and learning in primary schools
      - design, trial and evaluate curriculum and learning activities (eg curriculum units) which integrate science, the environment and society, and which apply Information and Communication Technologies
      - become aware of, and sensitive to, the ‘special needs’ of each student in a primary setting, and how participation in science inquiry, the environment and society can help them in learning.
  - **Assessment**
    - Task 1: Developing a planning journal (40%)
    - Task 2: Developing a Planning Portfolio (40%)
    - Task 3: Microteaching (20%)
  - **UNIT TOPIC**
    - Designing curriculum units which integrate science, the environment and society and its application in curriculum, teaching and learning; monitoring, reflecting on and improving their professional knowledge and practice.
    - Self-management enables a student to take responsibility for their own work and learning. It includes managing one's learning; monitoring, reflecting on and evaluating one's learning; identifying personal characteristics which contribute to or limit effectiveness; planning and undertaking work independently; taking responsibility for one's behaviour and performance; and learning from successes and failures.
    - ICT skills and understanding are required for all learning areas. Development of ICT competence for information management and the use of ICT skills for creating, visualising thinking, communicating, presenting and sharing information.

### Thinking Skills

- **Habits of Mind**
  - **Thinking about thinking**
  - **Thinking critically**
  - **Thinking flexibly**
  - **Thinking interdependently**
  - **Thinking systematically**

### Cross-curriculum perspectives

- **Indigenous perspectives** to ensure that all young Australians have the opportunity to learn about, acknowledge and respect the culture of Aboriginal people and Torres Strait Islanders
  - a commitment to sustainable patterns of living
  - skills, knowledge and understandings related to Asia and Australia’s engagement with Asia.

### Inter-cultural perspectives

- **Skills, knowledge and understandings related to** Asia and Australia’s engagement with Asia.
- **Skills, knowledge and understandings related to** Indigenous cultures and perspectives.
- **Skills, knowledge and understandings related to** Torres Strait Islander cultures.
- **Skills, knowledge and understandings related to** the environment and society.
- **Skills, knowledge and understandings related to** partnerships with other countries and regions.

### Social competence

- **Skills, knowledge and understandings related to** building social relationships. Working together and communicating clearly the results of group work.
- **Skills, knowledge and understandings related to** working in harmony with others, contributing towards common purposes, defining and accepting individual and group roles and responsibilities, respecting individual and group differences, identifying the strengths of team members, and building social relationships. Working together and communicating clearly the results of group work.

### Thinking about teaching

- **Skills, knowledge and understandings related to** thinking skills, knowledge and understandings related to literacy and numeracy.
- **Skills, knowledge and understandings related to** ICT.

### Disciplinary perspectives

- **Skills, knowledge and understandings related to** science, the environment and society.
- **Skills, knowledge and understandings related to** the environment and society.
## Appendix H: VELS Lattice

<table>
<thead>
<tr>
<th>Bloom/Anderson</th>
<th>Thinking Domain</th>
<th>Habits of Mind</th>
<th>Multiple Intelligences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels of thinking</td>
<td>Students use a range of question types. They locate and select relevant information from varied sources when undertaking investigations. They use a range of appropriate strategies of reasoning and analysis to evaluate evidence and consider their own and others’ points of view. They apply creative thinking strategies to explore possibilities and generate multiple options. Students explain the purpose of a range of thinking tools. They modify and evaluate their thinking strategies. They describe and explain why their ideas and beliefs change over time.</td>
<td>Striving for accuracy in thinking about thinking. Gather data using all senses, questioning and posing problems.</td>
<td>Visual/Spatial, Word, Naturalistic, Body, Logical, Interpersonal, Personal</td>
</tr>
<tr>
<td>All levels</td>
<td>Describe Explain Analyze Predict Compare/contrast Evaluate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Communication Standards
- They identify and gather geographical information from fieldwork, electronic and print media and organisational process and communicate it using a range of written, oral, visual and graphic forms.
- Students produce, in print and electronic forms, texts for a variety of purposes, including: generating, hypothesising, persuading and reflecting. They write arguments that state and justify a personal viewpoint, reports incorporating challenging themes and issues, personal reflections on, or evaluations of, texts presenting challenging themes and issues.

### Activities
- A debate on an animal welfare issue
- Letter to the editor
- Writing in their learning log
- Construction of a fieldwork report

### Discourse Domain Standards

#### Geography
- Students demonstrate knowledge and understanding of the regions of Australia, Asia, and the Pacific. They explain how the interaction of physical processes and human activities create variations within the regions.
- Students describe differences in living conditions and outlook. They demonstrate understanding of environmental issues based on inquiry and propose ways of ensuring sustainability. They understand how these regions change over time and how these changes can be managed. They construct maps and overlays using BOLTSS.

#### Economics
- Students explain the nature of the economic problem and how economic choices involve trade-offs having immediate and future consequences.

#### English
- Students read and interpret informative and persuasive texts that explore ideas and information related to challenging themes and issues. They provide supporting evidence to justify their interpretations. They produce personal responses. They infer meanings and messages in texts, analyse how social values or attitudes are conveyed, compare the presentation of information and ideas in different texts, and identify cause and effect in informative texts. They edit their writing for clarity, coherence and consistency of style, and proofread correct spelling, punctuation and grammatical errors. They identify key ideas in a topic and provide supporting detail and evidence for opinions. They critically evaluate the spoken language of others and select, prepare and present spoken texts for specific audiences and purposes. When listening, students ask clarifying questions and build on the ideas of others.

#### History
- Students analyse change and continuity over time and compare key aspects of past and present societies; for example, aspects of daily life, social and political ideas and structures, and cultural values and beliefs. They use a range of primary and secondary sources including visual sources that record features of the societies in their investigations.

### UNIT TOPIC

#### Changing Environments

##### Goals
- For students to: Find out how environments vary across the region. Discover how and why environments change. Identify the effects of change on environments.
- Identify ways to manage changing environments sustainably.

##### Concepts
- For students to demonstrate an understanding of the key concepts of change (across space and time), regions, scale, diversity, community, environment, habitats, sustainability, endanger, conservation.

##### Skills
- For students to develop skills in: Understanding topographic maps. Constructing maps and overlays. Researching topics on the internet. Collecting and presenting data through fieldwork. Identifying, presenting, and evaluating different viewpoints on issues.

### Assessment Task(s)
- A fieldwork report
- A selection of folio pieces (ISE)

### Personal Learning Standards
- Students complete short, extended, and group tasks within set timeframes, prioritising their available time, utilising appropriate resources. They initiate and undertake some tasks independently, within negotiated timeframes.
- They review the effectiveness of the management of tasks, identifying successes and suggestions for strategies that would improve outcomes. They develop and use systems to evaluate their work, and use these criteria to make appropriate refinements.

### ICT Standards
- Students select and apply ICT tools (Word and Inspiration). Students use a range of data types, including sound and still moving images, to record the decisions made and actions taken when developing new understanding and problem solving. Students select the most appropriate search engines.
- They use complex search strategies to refine their searches. They judge the quality of the located information.

### Activities
- Learning journey development and use. Use of digital cameras during classwork and fieldwork.
- Research on internet for case studies, animal welfare issue and the fieldwork report.
- Assessment of web sites and search engines for usefulness.

### Resources
- See Resource file and LAN for detailed listings.

Student atlas, atlas workbook, SOGE narrative approach, internet web sites.
## Appendix I: VCE Lattice

<table>
<thead>
<tr>
<th>THINKING LEVELS</th>
<th>HABITS OF MIND</th>
<th>MULTIPLE INTELLIGENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloom / Anderson</td>
<td>----------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Evaluation – judge, compare, rank</td>
<td>Persistence</td>
<td>Self</td>
</tr>
<tr>
<td>Analysis – organize, explain, discuss</td>
<td>Manage impulsivity</td>
<td>Body</td>
</tr>
<tr>
<td>Application- apply, suggest</td>
<td>Strive for accuracy</td>
<td>Nature</td>
</tr>
<tr>
<td>Comprehension-understand, describe</td>
<td>Flexibility</td>
<td>Spatial</td>
</tr>
<tr>
<td>Knowledge – explore, define, list</td>
<td>Take responsible risks</td>
<td>People</td>
</tr>
<tr>
<td></td>
<td>Work interdependently</td>
<td>Word</td>
</tr>
<tr>
<td></td>
<td>Thinking about thinking</td>
<td>Presentation</td>
</tr>
<tr>
<td></td>
<td>Build on past knowledge and skills</td>
<td>Math</td>
</tr>
<tr>
<td></td>
<td>Posing Questions</td>
<td>Process</td>
</tr>
</tbody>
</table>

### VCE OUTCOMES

On completion of this unit the student should be able to:

1. describe the geographic characteristics of at least 2 natural environments and explain how they are developed by natural processes, including extreme natural events.
2. analyse and explain the changes in natural environments due to natural processes and human activities,
   - to use and understand the spatial concepts of: Scale, Location, Region, Distribution, Movement, Spatial Change, Spatial Association, Spatial Interaction, Distance

### E-LEARNING SKILLS

- Word processing
- Inserting tables and images
- Research on web
- Referencing web addresses
- Powerpoint presentation
- Using an ILP
- Blog contribution

### LEARNING SKILLS

Identify strengths and weaknesses
Identify learning styles and MIs
Monitor development of the habits of mind
Monitor learning
Reflection on learning
Development of research skills
Evaluation of progress
Self and peer assessment
Planning of tasks and for deadlines
Develop critical thinking
Problem identification and solution
Development of study skills
Revision skills development
Data analysis skills
Time management on exams and for study
Use of graphic outlines, Mind maps and Concept map
Mapping and diagram interpretation and construction
Interpreting of criteria
Development of Fieldwork skills
Writing a fieldwork report

### PRESENTATION/ ENGLISH SKILLS

- Appropriate organisation
- Appropriate Layout and BOLTSS
- Spelling/Expression language/jargon acquisition
- Providing supportive evidence

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Powerpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster</td>
<td>Field study Report</td>
</tr>
<tr>
<td>Graphs</td>
<td>Maps</td>
</tr>
<tr>
<td>Research report</td>
<td>Analysis of data</td>
</tr>
<tr>
<td>Exam</td>
<td>Exam reflection</td>
</tr>
</tbody>
</table>

### Presentation/Product Types

- Exam reflection
- Field study Report
- Maps
- Analysis of data
- Exam reflection

### Learning Activities

1. Geography ILP introduction
2. Introductory Geographic characteristics and spatial concepts assignment
3. Introduction to environments
4. Coasts assignment
5. Aireys Inlet Excursion
6. SAC 1
7. Volcanic environments assignment
8. SAC 2
9. Examination
10. Ongoing Geography blog

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**B. Mundy 27/9/07**
<table>
<thead>
<tr>
<th>Year</th>
<th>YEAR 7 L.S. core</th>
<th>YEAR 8 L.S. core</th>
<th>YEAR 9 core</th>
<th>YEAR 10 elective</th>
<th>YEAR 11 Elective Units 1 and 2</th>
<th>YEAR 12 Elective Units 3 and 4</th>
<th>Topic</th>
<th>Essential Questions And/or Outcomes</th>
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<tbody>
<tr>
<td></td>
<td>Identity</td>
<td>Discovery</td>
<td>Water</td>
<td>Our Changing</td>
<td>Natural Environments</td>
<td>Regional Resources Global Perspectives</td>
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<tr>
<td></td>
<td>Changing</td>
<td>Antarctica</td>
<td>City</td>
<td>World</td>
<td>Human Environments</td>
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<td>Environments</td>
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<td>Experience</td>
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<td>YEAR 12</td>
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</tbody>
</table>

**Topic:**
- Where is the community that I live within? How do environments vary across the region? How and why do environments change? What are the effects of change on environments? How can we manage changing environments sustainably?
- Where is Antarctica? Why is it important? How do we use Antarctica? What are the threats to this environment? How does the Antarctic ecosystem function? How can we manage Antarctica sustainably? What is the future of Antarctica?
- Where is water? Why is water important? How do we use water? How do we manage water sustainably? How do human activities interact with the environment? What is the future of water?
- Why aren’t all countries the same? Describe global patterns of development and identify and describe the factors that determine these patterns. Analyse development issues and formulate and evaluate policies for sustainable use and management of resources and to alter development patterns at a range of scales.
- Describe the geographic characteristics of at least 2 natural environments and explain how they are developed by natural processes, including extreme natural events. Analyse and explain the changes in natural environments due to natural processes and human activities. Describe and explain the geographic characteristics of different types of rural and urban environments. Analyse and explain changes due to human activities in rural and urban environments.
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- Analyse the use and management of water within the Murray-Darling Basin region and evaluate its sustainability. Describe characteristics of a local resource and justify a policy for its future use and management using data collected in the field. Evaluate the relative importance of factors that affect changes in human population and one other selected global phenomenon. Compare and evaluate the effectiveness of responses and policies to manage a global phenomenon from a global perspective.
<table>
<thead>
<tr>
<th>Assessment</th>
<th>Antarctica conference</th>
<th>River Fieldwork Report</th>
<th>Exams - short and extended answers</th>
<th>Coasts Fieldwork Report</th>
<th>MDB analysis of Data - short and extended answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mt Macedon Fieldwork Report</td>
<td>Antarctica extended written response</td>
<td>City Fieldwork Report Research report</td>
<td>Volcanoes extended Response Task</td>
<td>Daylesford and St Albans Comparison AVD Melbourne Practical Activity Exam 2 Short and extended answers</td>
<td>Boho Fieldwork Management Plan Comparison tasks Exam - short and extended answers</td>
</tr>
</tbody>
</table>

| Key Spatial Concepts | Use of spatial concepts: location, distribution, region, distance, scale | Use of spatial concepts: location, distribution, region, distance, scale, Introduction to: movement, spatial association, spatial interaction, spatial change over time | Understanding and more developed use of spatial concepts: location, distribution, region, distance, scale, movement, spatial association, spatial interaction, spatial change over time | Understanding and more frequent and sophisticated use of spatial concepts: location, distribution, region, distance, scale, movement, spatial association, spatial interaction, spatial change over time | Detailed description of geographic characteristics Fauna, flora, soils, topography, geology, climate, land use, hydrology |

| Geography Skills | Describing geographic characteristics animals, topography, climate, landform, land use, geology | Describing geographic characteristics Fauna, flora, soils, topography, landform, geology, climate, land use, hydrology | Describing geographic characteristics for human and natural environments Fauna, flora, soils, topography, geology, climate, land use, hydrology | Describing geographic characteristics Fauna, flora, soils, topography, geology, climate, land use, hydrology | Detailed analysis using PQEE Cross sections and Transects |

| Fieldwork Skills | No current Fieldwork | Fieldwork skills Collecting data Incorporating photos and sketches Analysing data Writing a report River valley Transect | Fieldwork skills Collecting data Incorporating photos and sketches Preparing Graphics: Tables, mind maps, graphs, maps, annotated cross sections Constructing an AVD Analysing data Writing a report Answering questions based on field data under test | Fieldwork skills Collecting data Incorporating photos and sketches Preparing Graphics: Table, minds maps, graphs, maps, annotated cross sections Constructing an AVD Analysing data Writing a report Answering questions based on field data under test | Fieldwork skills Collecting data Incorporating photos and sketches Preparing Graphics: Tables, mind maps, graphs, maps, annotated cross sections Constructing an AVD Analysing data Writing a report Answering questions based on field data under test |

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</tr>
<tr>
<td>Key Spatial Concepts</td>
<td>Use of spatial concepts: location, distribution, region, distance, scale</td>
<td>Use of spatial concepts: location, distribution, region, distance, scale, Introduction to: movement, spatial association, spatial interaction, spatial change over time</td>
<td>Understanding and more developed use of spatial concepts: location, distribution, region, distance, scale, movement, spatial association, spatial interaction, spatial change over time</td>
<td>Understanding and more frequent and sophisticated use of spatial concepts: location, distribution, region, distance, scale, movement, spatial association, spatial interaction, spatial change over time</td>
<td>Detailed description of geographic characteristics Fauna, flora, soils, topography, geology, climate, land use, hydrology</td>
</tr>
</tbody>
</table>

| Geography Skills | Describing geographic characteristics animals, topography, climate, landform, land use, geology | Describing geographic characteristics Fauna, flora, soils, topography, landform, geology, climate, land use, hydrology | Describing geographic characteristics for human and natural environments Fauna, flora, soils, topography, geology, climate, land use, hydrology | Describing geographic characteristics Fauna, flora, soils, topography, geology, climate, land use, hydrology | Detailed analysis using PQEE Cross sections and Transects |

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<table>
<thead>
<tr>
<th>Research skills for Mt Macedon task Using LAN and web resources</th>
<th>Research skills for Antarctica task Using LAN and web resources</th>
<th>Research skills for water task Using LAN and web resources</th>
<th>Research skills - 1) Evidence of Climate Change and Response to Climate Change on different Scales. 2) Mega Cities Using LAN and web resources</th>
<th>Research skills Collecting data from text and ICT resources Presenting data Analysing data Writing a report or preparing an AVD</th>
<th>Research skills Collecting data from text and ICT resources Presenting data Analysing data Writing a report</th>
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<tbody>
<tr>
<td>Data description and analysis skills</td>
<td>Atlas maps Topographic maps (grid references, directions, scale contours) Graphs construct and use SALTS Photos sketch and label</td>
<td>Data description PQEE and analysis skills Atlas maps Topographic maps Aerial photos - spatial change over time Photos sketch and label Graphs – construct and use SALTS</td>
<td>Data description PQEE and analysis skills Atlas maps Topographic maps grid references, directions, distance, scale, contour patterns) Aerial photos - spatial change over time Satellite imagery Photos sketch and label Diagrams sketch and label Graphs sketch and label PQEE, SALTS</td>
<td>Data description PQEE and analysis skills Atlas maps Topographic maps (grid references, directions, distance, scale, contour patterns, cross-sections, description and analysis) Aerial photos Satellite imagery Photos sketch and label Diagrams sketch and label Graphs sketch and label PQEE, SALTS</td>
<td>Data description PQEE and analysis skills Atlas maps describe and interpret Topographic maps (grid references, directions, scale, distance, contour patterns, cross-sections, description and analysis) Aerial photos - describe and interpret Satellite imagery – interpretation Photos sketch, label and interpret Diagrams sketch and label Graphs sketch and label PQEE, SALTS</td>
</tr>
<tr>
<td>Data construction and presentation skills</td>
<td>Maps BOLTSSNa Mind maps</td>
<td>Data construction and presentation skills Maps BOLTSSNa Tables Diagrams Photos Graphs Mind maps Integration of different forms of data into maps, tables BOLTSSNa as appropriate for all of above</td>
<td>Data construction and presentation skills Maps BOLTSSNa Overlays BOLTSSNa Tables Diagrams Photos Graphs -SALTS Mind maps Integration of different forms of data into maps, tables BOLTSSNa as appropriate for all of above</td>
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</tr>
<tr>
<td>Management strategies for Mt Macedon and sustainable environments</td>
<td>Management policy construction</td>
<td>Management policy construction and evaluation Policy, Goals, strategies</td>
<td>Management policy construction and evaluation Policy, Goals, strategies</td>
<td>Management policy construction and evaluation skills – Policy, Goals, strategies, evaluation criteria</td>
<td>Management policy construction and evaluation skills – Policy, Goals, strategies, evaluation criteria</td>
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<td>Factors affecting decision making on Easter island</td>
<td>Introduction to SHEEPPT factors with regard to decisions on the</td>
<td>Compare and evaluate factors affecting decision making: SHEEPPT</td>
<td>Compare and evaluate factors affecting decision making:</td>
<td>Compare and evaluate factors affecting decision making:</td>
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<table>
<thead>
<tr>
<th>Required Generic Learning Skills for VCE Geography</th>
<th>future of Antarctica</th>
<th>SHEEPP</th>
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<tr>
<td>Word processing Inserting tables and images Research on web addresses Powerpoint presentation</td>
<td>Word processing Inserting tables and images Research on web addresses Powerpoint presentation</td>
<td>Use of ICT Google Earth Word processing Inserting tables and images Research on web addresses Powerpoint presentation</td>
<td>Use of ICT Google Earth Word processing Inserting tables and images Research on web addresses Powerpoint presentation Powerpoint presentation Blog contribution Introduction to online discussions</td>
<td>Use of ICT Google Earth Word processing Inserting tables and images Research on web addresses Powerpoint presentation Blog contribution Online discussions</td>
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<td>To understand key instructional terms such as those used above in the thinking levels row</td>
<td>To understand key instructional terms such as those used above in the thinking levels row</td>
<td>To understand and use key instructional terms such as those used above in the thinking levels row</td>
<td>To understand and use key instructional terms such as those used above in the thinking levels row</td>
<td>To understand and use a wide range of key instructional terms such as those used above in the thinking levels row</td>
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<td>Introduction to writing a summary</td>
<td>Writing a summary Using a mind map</td>
<td>Issue summary</td>
<td>Issue summary and analysis Using a mind map</td>
<td>Issue summary and analysis Use of a variety of graphic outlines, mind maps, written summaries</td>
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<tr>
<td>Developing a geographic vocabulary – Antarctica</td>
<td>Developing a geographic vocabulary – Antarctica</td>
<td>Developing a geographic vocabulary – Water</td>
<td>Developing a geographic vocabulary – Cities, climate</td>
<td>Developing a geographic vocabulary – Natural and Water</td>
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<td>Environments, Mt Macedon</td>
<td>exploration</td>
<td>change, development</td>
<td>human systems-Coasts, Cities, Volcanoes, Vietnam, rural communities Use of geography scrapbook</td>
<td>Land degradation, Population, Climate change Use of geography scrapbook</td>
</tr>
<tr>
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</tr>
<tr>
<td>Habits of mind develop and use: in particular- Striving for accuracy, Thinking about thinking, Gather data using all senses, Questioning and posing problems, Respond with wonder and awe, Persistence, Taking responsible risks Communicating with clarity and precision, Thinking and working interdependently, Applying past knowledge to new situations, Remain open to continuous learning.</td>
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<td>Great geographical habits Develop and use all as required Striving for accuracy, Thinking about thinking, Gather data using all senses, Questioning and posing problems, Respond with wonder and awe, Persistence, Taking responsible risks Communicating with clarity and precision, Thinking and working interdependently, Thinking flexibly, Finding humour, Managing impulsivity, Listening with understanding and empathy, Applying past knowledge to new situations, Remain open to continuous learning, Create, imagine, innovate</td>
</tr>
</tbody>
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Habits Of Mind
Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:
Mundy, Brian Roy

Title:
The millennial school: a theoretical basis for curriculum design in a time of educational transgression

Date:
2012

Citation:

Publication Status:
Unpublished

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