Developing Self-Regulated Learning Skills in Young Students

by

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I certify that the thesis entitled

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submitted for the degree of Doctor of Philosophy

is the result of my own work and that where reference is made to the work of others, due acknowledgment is given.

I also certify that any material in the thesis which has been accepted for a degree or diploma by any university or institution is identified in the text.

Full Name...........................................................................................................

Signed ..............................................................................................................

Date..................................................................................................................
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Developing Self-Regulated Learning Skills in Young Students

Abstract

In 2007 the New Zealand Ministry of Education released a revised national curriculum statement which was underpinned by five key competency groups. One of the competency groups, Managing Self, encompasses key features of self-regulated learning. Setting and achieving goals, time management, planning, self-monitoring, self-evaluating and taking control of one’s learning are all self-regulatory processes regarded as essential for lifelong learning. My study aimed to explore how teachers introduce and develop particular self-regulating learning strategies and tools in primary classrooms to improve students’ skills in self-management of learning. Specifically it aimed to find out: how teachers integrated self-regulated learning strategies; how could self-regulated learning strategies be introduced during the learning cycle; and how different groups of students develop these learning strategies.

Although theories of self-regulated learning differ, they all broadly define self-regulated learning as a blend of cognitive, metacognitive, motivational, and social factors which effect how a learner approaches academic tasks. This research is situated within the social-cognitive perspective which views self-regulated learning as an open-ended process and a combination of self-observation, self-judgment, and self-reaction. Self-regulation theorists view learning as a cyclical activity that occurs in three major phases: forethought, performance or volitional control, and self-reflection. The model adopted, for trialing, based on Zimmerman’s Self-Regulated Learning Cycle, incorporated these phases and emphasized their dynamic interaction. The teachers trialed the use of specific self-regulated learning strategies and tools within the learning cycle, integrating them within an inquiry approach to learning.

Action research methodology was employed as it is a cyclic, participative, reflective, flexible and responsive approach which ensures its compatibility with
the study’s social cognitive perspective. Teacher interviews and video stimulated recall sessions were means to develop a complex and complete picture of how teachers worked with self-regulated learning processes, and the context in which these occurred. The data generated multiple voices and multiple perspectives on how to develop self-regulated learning skills in young students.

By participating in an action research study the teacher participants had the opportunity to develop content knowledge, and undertake an inquiry cycle trialing an intervention, testing solutions to problems and refining their practice – core features of high quality professional development. In effect, the teachers participated in a community of learners deriving meaning from their own classroom experience, critically reflecting and actively collaborating with their colleagues. The teachers’ practical ideas and advice offers other teachers a stimulus for critical reflection and collegial discussion regarding self-regulated learning across primary school year levels. For example, the teacher participants identified key elements of formative assessment as important classroom practice when developing self-regulated learners.

This folio consists of a dissertation and an informed discussion of my professional writing and practice. The study will provide schools with an effective professional development model built around action research that has a meaningful effect on teacher learning and fosters improvements in classroom practice.
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Section 1: Introduction to the Folio

1.1: Introduction

There are four pieces to the Folio: Introduction to the Folio, Dissertation, Professional Writing and Practice, and Folio Conclusion.

The PhD by Folio is an opportunity to link theoretical and empirical research to the practical context of the working environment. For me, as a teacher, teacher-educator, principal and professional development facilitator, this PhD by Folio was the chance to bring together a teaching philosophy that has evolved over 24 years working with primary age students, a deep and abiding interest to help my students to develop self-regulating learning skills (to set goals, maintain motivation, reflect on and share their achievements collectively), and a chance to more closely examine a range of learning strategies and tools that I used with them. My own need to seek deeper understanding and greater knowledge of how to help my students develop as self-managing learners then combined with a commitment to sharing my knowledge and skills through professional development programmes for colleagues who are teachers and principals. For these programmes, I drew on what I had learned from current literature, from current curriculum development initiatives, and from Participatory Action Research as an empowering methodology. Finally, the Folio also provided me with the opportunity to write about and reflect on the specific outcomes of working with teachers in the process of doing research.

None of the above elements that are significant to the journey that makes up this PhD folio occurred in a vacuum. In order to place this in context, I will begin by signposting some of the important ‘moments’ on my professional journey, and in doing so, to map the significant elements that inform this Folio. Here I aim to highlight how, along the way, these key components came into ‘being’. These include: my teaching philosophy, my own classroom experience of engaging with students in exploring self-regulated learning strategies, the range of strategies and tools I developed or used with my students to aid their sense of control, the ways
in which I have used my knowledge and experience to facilitate not only the action research study that is a substantial part of this thesis, but also the professional development programmes that informed the study.

I began teaching in 1983, and was appointed a principal after 10 years teaching experience. In 1998/99, I had the opportunity to work at the Otago University as a senior lecturer in the School of Education. I was involved in the development and the implementation of the Bachelor of Teaching Degree (Primary), writing course materials, lecturing, and organizing practicum experiences for teacher trainees. This enabled me to revisit and reflect on many of the educational theories and philosophies that had formed the core of the teacher training programme I had experienced at the Dunedin College of Education, many years previously. This teacher training programme, which I undertook from 1980-1982, was firmly rooted in the social constructivist theories of John Dewey, Jean Piaget, and Lev Vygotsky. Concepts such as child-centred, learning by doing, building on the learner’s prior knowledge and experiences, and the developmental process all helped to shape the teacher I became. I was not able to clearly articulate my teaching philosophy until many years later when I had the opportunity to work within a teacher education programme. Revisiting a mix of educational theories and reflecting on 20 years of teaching enabled me to connect the theory and practice. Chapter One of the Dissertation provides a detailed description of this experience.

Working within a teacher degree programme helped to confirm my professional commitment to the centrality of the learner in the educational process. I read and learned more about recent educational thinking and research such as Howard Gardner’s work on Multiple Intelligence Theory (Gardner, 1983). Approaching learning from many different theories, helps students become more well-rounded, makes school more engaging and motivating, and enables students to succeed. My philosophy of teaching was always firmly embedded in a constructivist, child-centred approach to teaching (like most New Zealand teachers).

As a classroom teacher, I aimed to motivate students, to provide problem-solving situations, to foster the acquisition and retrieval of knowledge, and to enable the
learner to think about how they learn. Central to the tenet of constructivism is that learning is an active process whereby students discuss their understandings about a real-life problem. I encouraged students to collaboratively construct new and situational specific understandings by undertaking a variety of co-operative activities together. I perceived that, the Multiple Intelligence (MI) approach, based on Gardner’s template, would enable the teacher to integrate content and skill development, and provide a range of ways for students to learn a concept or skill and to demonstrate their learning beyond traditional methods. This perception eventuated in a significant ‘turn’ in my journey. I had been offered a ‘path of confirmation’ as a lecturer at Otago University but decided to return to the field as a teaching principal. I was keen to investigate whether the MI approach to learning would benefit learners.

I returned to the primary teaching field as a teaching principal at Macandrew Bay School, Dunedin, in September 1999. This was a small city school of 125 pupils from Year one to Year six students. I gradually introduced the MI approach into my classroom, that is, I used an MI planning grid, as developed by Pohl (2000) to provide learning experiences in multiple modes, and quickly became aware of two responses. Firstly, I found that the students were excited, enthusiastic, motivated, and actively involved in learning. Secondly, I realized that I was adapting to a more facilitative teaching role, which I regarded as a positive move away from the more direct teaching role I was accustomed to. The students appeared to be on task and learning, which enabled me to move freely around the classroom, helping individual students or small groups for longer periods.

From a more negative stance, I began to question whether, within this conducive flexible learning environment, students were actually on task and learning. I was allowing students to control their own learning environment, and because of my own sense of loss of control over the students, I doubted their ability to stay on task in such an interactive learning environment. My role had changed from directing students’ learning and providing the knowledge to be learned, to helping students search for and formulate their own knowledge. A pedagogic rebirth! The students had the opportunity to direct their own learning and develop new knowledge in a social context. While I was excited by the way the students were
managing their own learning, I was quizzical about the process. Specifically, I was left with two questions. How could I ensure the students were all learning? How could I help them stay on task no matter the distractions? This questioning led me to the next significant element in my journey: the development of strategies and tools to help students learn and stay on task.

While trialing the MI approach to learning, I was reminded of the importance of utilising a number of key learning strategies such as: sharing the learning intentions with students, developing success criteria with students, encouraging students to self-assess against the success criteria and identify their next learning steps, and encouraging students to set and monitor goals. In 2000, Macandrew Bay School undertook a Ministry of Education Contract called Assess to Learn (AtoL). The major focus of the professional development programme was to assist teachers and students to improve teaching and learning through deepening their understanding of formative assessment. The contract stressed the importance of giving quality feedback and feed forward to students, co-constructing learning intentions and success criteria with students, and encouraging students to self- and peer-assess in order to help them manage themselves as learners. The New Zealand Ministry of Education (2005b) identified these strategies as key elements of formative assessment. I utilised these strategies while trialing the MI approach to learning. I developed a ‘We are learning to …’ chart so that the students were aware of what they were learning and why and together we developed the success criteria so that the students could visualize what they were aiming to achieve. I developed a number of self and peer-assessment formats for students to utilise encouraging them to develop this strategy. However, there still remained the puzzle of how the students could control their learning environment.

Through experience, reflection and study, I collected a set of tools that collectively could be used to help students stay on task. These were: STARS (Sayings That Allow Regulated Study, a term created by the students), the use of individual CD players with Baroque music, the use of an on task/off task check sheet, a timeout capsule, carrels, and learning logs. Together, the strategies and tools form an integral part of this study. They arose from my own teaching experience and teaching beliefs, and for this reason, I believe this study is unique. I describe the strategies and tools in more detail in the second chapter of the Dissertation.
Over a period of three years, as a classroom teacher, I gathered anecdotal evidence by interviewing the students and carrying out observational questionnaires to ascertain if the strategies, tools, and MI learning approach were affecting the students’ learning. I asked the students to rate their on task/off task behaviour, and to consider why they had or had not accomplished set goals. I also asked the students to rate their use of the strategies and tools, frequently, and I made observational notes tracking students’ progress and work output. The students had the opportunity to discuss the value of, and their likes/dislikes about the MI approach to learning.

On collating and considering the data, I made the following observations:

- Students were involved in multiple ways to learn a new skill or concept. The students appeared positive about the multiple modes of learning and how they believed these helped them to learn.
- Students appeared to be engaged for longer periods of time, and off task behaviours dropped significantly.
- Students who were not conventional pen-and-paper learners had the opportunity to learn in ways that might specifically suit them, e.g. students who were bodily/kinesthetic learners were no longer frustrated because they could use their bodies in active, positive ways to learn.
- Activities were multi-sensory and, therefore, had the potential to engage more learners.
- Students created a range of products that demonstrated their learning and provided rich assessment artifacts.
- The programme provided an environment where very able students could operate at a higher level, and appeared to be using a range of intelligences.
- MI enabled students to develop skills in areas they were not proficient in.
- Higher-order thinking as defined by Anderson and Krathwohl (2001) was emphasized. This helped to challenge all learners and enabled students to collaborate in order to solve realistic problems.

After a period of learning in the MI mode, senior students were able to design their own learning activities using the MI and Bloom’s planning framework, that
is, a framework including Bloom’s taxonomy and Gardner’s Multiple Intelligences (Pohl, 2000). This offered students the chance to co-construct the curriculum and have an element of choice, which helped to motivate them.

Out of these classroom experiences and observations grew my interest and strong belief in the value of developing self-regulated learners within this conducive, flexible learning environment. I first encountered the term self-regulated learning when I was preparing course materials at Otago University. I was carrying out a literature review for a course titled ‘Making Learning Happen’, and reading articles by Corno (1992), Winne (1995) and Zimmerman (1986). All of these researchers have informed my research study and in particular, the work of Zimmerman has shaped my theoretical framework considerably. I elaborate on this in the second chapter of my Dissertation. From these readings, I developed a basic understanding of the descriptors of a self-regulated learner. I was now connecting this theory with my present classroom practice.

My aim was to develop learners who were engaged in their own learning and performance, who could articulate their own learning goals, and evaluate their own achievement. I wanted them to be able to articulate the next step in their learning and take control of the learning environment, to stay focused and on task.

My passion for teaching and learning influenced the teachers in my school. As I trialed and modeled this new approach to learning the teachers also began to perceive its value, and, over a period of time, the whole school adopted this approach. Macandrew Bay School became a ‘model’ school hosting many other schools and displaying our unique curriculum delivery approach. At this time, I was keen for promotion and to experience a larger school, which lead to the next ‘turning point’ in my journey.

The next significant element in my journey was my appointment as principal of a School in Central Otago in 2005. This school was a participating school in an Information Communication Technology (ICT) professional development cluster contract set up by the Ministry of Education. It aimed to help teachers up skill in the use of and integration of ICT in their teaching and learning programmes.
Relevant to the context of the study discussed here, the professional development for the cluster was designed to extend the range of effective teaching and learning strategies teachers use in their classrooms, and to assist teachers to develop teaching programmes that focus on the skills of thinking and learning, rather than being content driven. In order to do this, an integrated inquiry learning approach was undertaken. This approach to learning, based on Vygotsky’s (1978) social constructivist theory, integrated Multiple Intelligence Theory and higher-order thinking strategies. For Vygotsky the classroom culture gives the student the cognitive tools needed for development and the teacher is actively involved. The integrated inquiry learning approach provides the student with a variety of cognitive strategies that encourage them to think deeply about a topic, supporting, guiding, and extending their thinking processes. The teacher models the strategies and facilitates the use of them, becoming actively involved in learning. As I undertook professional development in this approach, I realized this learning approach could provide a conducive learning environment within which to develop self-regulated learners. Students actively engage in meaningful inquiry and in the process, use specific strategies to take control of their own learning.

This point in my journey was pivotal – I was beginning to formulate questions for a possible research study. The research questions are contained in Chapter One of my Dissertation.
1.2: The Dissertation

In 2003 I decided to undertake a PhD. Based on my classroom and leadership experiences, described above, I became very interested to find out whether the tools and strategies I had used were helping the students to develop as self-regulated learners. I was also interested to find out if other teachers could integrate self-regulated learning strategies into their own classroom environments. These important questions led me to carry out this research study. I returned to the article I had accessed earlier by Zimmerman and began to explore the idea of using Zimmerman’s Cycle of Learning as a model for the integration of the self-regulated strategies and tools.

When considering an appropriate methodology for this study, I researched a number of approaches focusing mainly on case study and action research. As I reflected on my teaching career, I realized that I had followed the cyclical action research process constantly both from the micro perspective, that is, daily problem solving, to the macro-level seeking research, resources, collegial discussion in order to make sense of and grow my practice. Action research is a constructivist process whereby the participants construct meaning from their experiences and I firmly believe it is a powerful form of teacher professional development. I discuss action research as a methodology in Chapter Three of my Dissertation.

The exploration and development of my commitment to, and knowledge of, action research is central to this thesis. The purpose of action research is to improve one’s practice and to generate knowledge and understanding of one’s practice that can be shared with others. This has formed an integral part of my teaching career and is a main aim of this study. This study met that aim by providing a variety of teacher voices offering multiple ways of integrating self-regulated learning strategies and tools into their classroom programmes.

As stated above, I have undertaken many informal action research cycles throughout my teaching career, and, when combined with the various roles I have experienced during my career (teacher, principal, lecturer), has enabled me to link theory with practice and be at the ‘cutting edge’ of current teaching and learning.
practice. This ability to link theory and practice has resulted in another significant element of my journey – my role as a professional development facilitator and presenter.

1.3: Professional Writing and Practice

After completing my colloquium in 2006 and gaining ethics approval from Deakin University, I was awarded a 2006/07 sabbatical study leave by the Ministry of Education to carry out the data gathering for this study. This study’s research questions were deemed of high interest and correlated to Ministry initiatives in New Zealand at the time. As a result of my research study and in recognition of my knowledge of strategies to develop self-managing learners, over the past five years, I have been invited to present professional development workshops and presentations by the Ministry of Education and the New Zealand Principals Federation. Various other principal groups, as well as individual schools, have invited me to present workshops and seminars on self-regulated learning and other associated topics. Subsequently, I have developed a range of professional development materials associated to a variety of topics, some of which was used for the teacher participant professional development day at the beginning of the study.

In Section Two, Part A, I present and discuss a series of slides used in the professional development programme that was the first step in the data collection stage of my research. In essence, the slides present a number of relevant theories and definitions of self-regulated learning designed to engage the teachers in reflection and discussion. The characteristics of a self-regulated learner were presented so that once the teachers had connected the characteristics to a particular child, they were able to delve deeper into what strategies they might employ as learners. The teachers gained an understanding of the variety of strategies self-regulated learners use, and then they unpacked the specific strategies to be used in the study. This initiated a deeper discussion around why they were chosen and what value they may have for the learner.

Teachers brainstormed and defined what a learning cycle might consist of, and then Zimmerman’s Cycle of Learning was introduced. This enabled the teachers
to make links between their ideas and those of Zimmerman. Teachers took part in reflection, questioning, and sharing opportunities throughout the sessions in order to help them clarify their ideas and to critically reflect on their practice. Section Two, Part A, presents a metacognitive reflection of what I learnt, what I would change in relation to what I presented, and what might inform others embarking on facilitating professional development for teachers. The conclusions demonstrate a significant contribution towards understanding how to provide effective professional development for teachers.

As stated above, I have developed a range of professional development materials either focused on specific learning topics, such as self-regulated learning or inquiry learning, or broader aspects, such as curriculum delivery frameworks and school visioning.

My interest in and focus on developing self-regulated learners has impacted on my vision and philosophy as a principal and, consequently, the curriculum delivery framework of the schools I have been associated with. In turn, new initiatives and guidelines released by the Ministry of Education over the past five years have also impacted on the development of my philosophy and vision. When the New Zealand Ministry of Education revised the National Administration Guidelines in 2001, this resulted in new directions and greater freedom for growth and development in schools. In response, I developed a particular framework of curriculum delivery, based on my own personal philosophy and vision incorporating a self-regulated learning programme, which I introduced into a number of schools.

As stated above, I have been invited to share this framework at conferences and workshops for principals. The entire presentation consisted of 47 slides and discussion lasting one and a half hours in duration. However, of relevance to my folio and the discussion here, only 39 slides of this unique framework are presented in Section Two, Part B. The slides reveal the essential elements, based on research and practical application, and how they link to provide a unique learning environment for young students. Section Two, Part B, of my Folio is pivotal as it represents the culmination of my PhD journey. The slides show how a
vision grew from being just words on paper to a lived reality for the whole school community. The interrelated nature of the learning journeys of the principal (myself), the teachers, and the school, impacted and enhanced the development of the school’s charter and curriculum delivery plan ensuring it encapsulated the beliefs and vision of all the main stakeholders.

As part of my continual search for relevant and recent research connected to my thesis I contemplated the work of Bishop, Berryman, Tiakiwai and Richardson (2007, p. 192) and encountered the notion of ‘creating a culturally appropriate and responsive context for learning’. I utilised the Effective Teaching Profile as developed by Bishop et al. (2003, p. 193), as a classroom culture self-reflection tool for the teachers in my school (refer to Section 3, Part B (1) for a more detailed discussion). From their responses, and after considering the notion of school culture further, I interpreted the term as meaning: actions and altered behaviours that accompany respectful understanding of the school’s vision. Furthermore, achieving cultural competence must be honed through perpetual individual and institutional efforts in order to be effectively employed. In essence, everyone in the school community must have a shared understanding of the school’s vision, and be willing to work towards achieving it through specific interventions and practices. Section Three, Part B, describes my school’s journey towards attaining a lived vision. This involved articulating the main approaches to teaching and learning at our school.

My belief that self-regulated learning should be a key component of any school’s curriculum delivery design led to it becoming a vital key competency, which underpins learning and encourages students to manage their own learning, at schools where I have most recently been principal. I also believe a vital key competency that should underpin learning for teachers is the ability to carry out classroom action research. I also believe that research and inquiry are integral to a school’s redevelopment journey and, importantly, to its approach to teaching and learning.

A main aim of this study was to inform and offer new ideas to teachers and the wider educational community. The implementation of the revised national
curriculum statement in New Zealand, which takes effect from 2010, will involve professional development opportunities for teachers. This could be a critical time to introduce professional development through the vehicle of action research, encouraging inquiry as opposed to implementation only.

1.4: Conclusion

The teaching and leadership experiences that I have described, in combination with the theories and experiences related to carrying out this research study, have significantly influenced my teaching philosophy. The significant elements in my journey are clearly signposted in my philosophy:

I believe all students have the right to learn and succeed at school. All students have potential and it is the responsibility of the school, no matter what a child’s background, to provide child-centred teaching approaches and environment to help all students develop self-regulation and life long learning skills.

Giving students choice and a voice will allow them to engage in learning and to keep them focused. Co-constructed activities, multi-modal learning opportunities, and an integrated inquiry process to learning are pivotal to student engagement

A teacher must continually reflect on their pedagogy and programmes and be prepared to try new strategies or ideas in order to engage all students. Undertaking action research will enable a reflective teacher to continually improve their practice and develop a deeper understanding about how students learn.

I believe a school should be an action research (inquiry) learning community for all, not just students, but a place where learning is valued by all and pursued by all. A moving school is a learning school where programmes and learning are constantly reflected upon and
reviewed, in order to become dynamic, ever changing and most importantly ever improving.

This philosophy remains ‘in-progress’, ever-emerging. In line with this personal dynamic philosophy, the New Zealand Ministry of Education also presents an ever-emerging dynamic approach to designing curriculum.

Since beginning this study, the New Zealand Ministry of Education has released a draft revised curriculum statement, carried out consultation that led to revisions, and further released a revised curriculum statement for all New Zealand Schools. As stated above, the Revised New Zealand Curriculum will come into effect from 2010. In line with European countries (Eurydice, 2002), the New Zealand curriculum statement is underpinned by key competency groups. According to Hoskins and Fredriksson (2008, p. 11), competencies have come to the fore due to the demand of policymakers to know what individual learning outcomes are required for a citizen to contribute to a modern globalised society both economically and within civil society. The competencies usually comprise of a combination of knowledge, skills, attitudes, and values. In 1997, the Organisation for Economic Co-operation and Development (OECD) began a study with the aim of providing a sound conceptual framework to inform the identification of key competencies we need for an overall successful life and a well-functioning society. Through the Definition and Selection of Competencies (DeSeCo) Study, the OECD collaborated with a wide range of scholars and experts from many countries to produce an overarching frame of reference for key competencies. As Rychen (2002) states, three broad categories of competencies were constructed to help countries shape assessment practices, to inform lifelong learning and curriculum framework construction. The broad categories were: acting autonomously, using tools interactively, and functioning in socially heterogeneous groups.

The New Zealand Revised Curriculum framework is underpinned by five key competency groups, one of which is Managing Self. This group of competencies encompasses key features of self-regulated learning, that is, setting and achieving
goals, time management, planning, self-monitoring, self-evaluating and taking control of one’s learning. In combination, this Dissertation and Professional Writing and Practice contribute to understandings of the key competency group Managing Self and to international research in key competency development and self-regulated learning.

My Dissertation also highlights the value of action research as a professional development tool. Although it can be regarded as a quick solution to school reform, action research, according to Sagor (1997), is a viable tool used by teachers and principals to improve schools. As Saunders (2004) states, several countries that scored highly in the OECD (2001) Programme for International Student Assessment (PISA) Report, have invested in a model of teacher formation and ongoing development that is based on teachers undertaking research to inform their professional practice. Action research not only provides educators with new opportunities to explore and test new ideas, as in this study, but can also provide a vehicle for policy change that works from an evidence-based approach to practice. When teachers and principals act as researcher partners within a participatory action research model, a shared dialogue of practice can develop which could culminate in school change and improvement. This folio is timely and significant as it provides an example of both. The Dissertation presents the development of a shared dialogue of practice focused on developing self-regulated learners, and the Professional Writing and Practice provides an example of school change. This folio provides information and considerations that serve to inform discussions about school/curriculum change at a crucial time in New Zealand as the Revised New Zealand Curriculum is being introduced.

This introduction aimed to map the significant elements that inform this folio. The elements build on, inform, and define the structure of this research study. The following section details the research study, incorporating all of the above elements, beginning with Chapter One which contextualises the study within the wider New Zealand educational environment.
Section 2: Dissertation

CHAPTER 1: Introduction

1.1: Contextualising the Study

Pre 2003 schools in New Zealand were required to provide balanced curriculum coverage and to assess each student against a large number of very specific achievement objectives. This requirement led to the development of prescriptive curriculum delivery plans and a strong focus on the documentation of planning and assessment. The Education Review Office (ERO) (1999) reported that teachers attempts to meet the Ministry of Education (MOE) requirements related to assessment and reporting and resulted in the gathering of a great deal of information that was not useful to them nor used by them. The Report noted that when teachers’ records were made to meet what they perceived to be an external requirement, the records tended to be of little educational benefit. Hammonds (2004, p.1) calls this ‘compliance culture’, whereby the creativity of teachers and schools was increasingly being placed at risk. A school’s ability to design curricula to suit its own learning community was stifled, and a child-centred approach to teaching and learning was replaced with a more traditional approach focused on curriculum coverage. Hammonds suggested schools’ attempts to cover all the learning objectives resulted in the invention of systems, which themselves became barriers to learning, and took the focus away from teaching and learning.

In essence, this emphasis on outcomes defined long-term, broadly defined goals and objectives and held teachers accountable for achieving them. As Alderson and Martin (2007) suggest, this was commonly referred to as outcomes-based education (OBE) and was prevalent in countries such as Australia and the United States of America at this time. As a principal throughout this period, I developed curriculum delivery plans focused specifically on the coverage of achievement objectives, and produced large amounts of documentation around planning and reporting compliance. This focus placed an extra workload on teachers who spent many hours documenting their planning and assessment data. This resulted in
learning programmes which were defined by achievement objective coverage and the gathering of assessment data, as opposed to learning programmes that defined student interest and needs.

Since 2003, there has been a pedagogical shift from an outcomes-based approach back to a more child-centred approach to teaching and learning, in line with a shift in MOE policy. A revision of National Administration Guideline One (MOE, 2001a) offered schools more breadth and depth as opposed to curriculum coverage, and allowed schools to balance the essential learning areas and essential skills as they desired (Gerritsen, 2000). Schools were now empowered to design programmes which were relevant to the learning needs of their students and community. It became apparent to me, as a principal and professional development facilitator, that the traditional teacher controlled learning environment was now becoming a more child-centred and student-controlled learning environment. Hammonds (2004, p.1) wrote that for ‘creative schools’, this policy change was a welcome opportunity to develop innovative ways of delivering the curriculum. Many schools were now more focused on co-curriculum development, helping students become independent learners, sharing the learning intentions, and encouraging students to self-assess progress against specific criteria (MOE, 2006a). This shift in Ministry policy has enabled schools to incorporate different learning theories to teaching and learning such as:

- Gardner’s Theory of Multiple Intelligences (1983) - this theory is based on the premise that all human beings have multiple intelligences and the theory promotes diverse approaches to learning (Sim, 2005);
- Edward de Bono’s thinking approaches. de Bono is a world-renowned expert in creative thinking. Common approaches used in New Zealand primary schools are 6 Thinking Hats (de Bono, 1985) and CoRT (de Bono, 1986);
- Learning Styles – providing different ways of learning such as visual (viewing pictures or diagrams), auditory, tactile, kinesthetic, print oriented (i.e. students who learn easily by reading books), and group interactive (i.e. students who learn best when interacting with others) (Dryden and Vos, 1993);
• Inquiry Learning – a student-centred, active approach that emphasizes research, critical thinking, and multidisciplinary study to achieve learning outcomes (Bartlett, 2005).
• Emotional Intelligence (EI) – teaching the essential skills of EI such as self-awareness, mood management, self-motivation, empathy and managing relationships (Goleman, 1995).

As Chamberlain (2004) stated, the emphasis was now on revising the national curriculum so that it reflected the most effective teaching strategies and learning theories.

The latest overhaul of the curriculum in New Zealand has resulted in a revised national curriculum statement released in November 2007, and includes the following five key competency groups: (1) thinking – critically, creatively, and logically; (2) belonging, participating and contributing; (3) relating to others; (4) managing self; and (5) making meaning – multi-literacies and using language, movement symbols and technologies. According to the MOE document (MOE, 2007), the key competencies have been designed to provide an underpinning philosophy for day-to-day learning, and for the development of overarching school charters and culture (MOE, 2005a). Underpinning these reforms is the premise that students need to develop the skills to view themselves as competent learners and realize their success is to do with effort and strategy, not luck and ability.

The fourth named competency, the one that is central to my research is Managing Self, which includes the ability to: set and achieve goals, make plans, estimate time; persevere, be resourceful, get through hard patches; self-monitor, self-evaluate, and change course when necessary; identify and take action regarding one’s individual and collective rights, interests, responsibilities, limits and needs; take increasing responsibility for learning; and, act within the big picture/larger context (MOE, 2005a, p. 1). This key competency group is about managing oneself as an individual while remembering that one is always acting in a social context. This key competency group encompasses key features of self-regulated
learning, that is, setting and achieving goals, time management, planning, self-monitoring, self-evaluating, and taking control of one’s learning.

In the New Zealand curriculum, before 2003, essential skill development was seen not to be understood or addressed properly in practice (MOE, 2001b). Pre 2003, there was a perceived disconnection and mismatch between essential skills and essential learning areas. The skills emphasis of the national curriculum structure was seen to be subverted in practice by the compliance focus on achievement objectives (MOE, 2001b). In contrast, the new Ministry of Education policy stated that the key competency groups should be integrated into the curriculum areas and underlie all learning (MOE, 2005a). The key competency groups will have a greater potential to be connected and included in the present curriculum delivery plans of schools as the present focus is now on how students learn not what they must learn. For this reason, I believe the key competency group, Managing Self, including key aspects of self-regulated learning, will become an integral part of helping students learn and achieve academic success. This research investigated how teachers could help students develop selfregulated learning skills.

1.2: A New Zealand Primary School Classroom

Tell me and I’ll forget, show me and I may remember, involve me and I’ll understand. Chinese Proverb

Teachers that I have worked with in Otago primary schools strive to create a conducive learning environment in order to help all students learn. These teachers would concur that in a conducive learning environment, students are likely to be motivated, task-oriented, reflective, engaged in higher-order thinking and actively learning. Since I began teaching, I have been exposed to and trialed many new teaching approaches, such as open-plan teaching, thematic study, contracts, learning centers, integrated curriculum, multiple intelligences, and inquiry learning. As discussed earlier in this chapter, the teaching environment within New Zealand schools has again become more conducive to trialing new approaches.
Since 2006, as noted earlier, and as a result of policy initiatives, New Zealand primary schools have begun moving from a prescriptive curriculum delivery era with teacher-centred classrooms, to an integrated curriculum approach focused on how children learn best. Recently, Ministry of Education professional development contract opportunities for primary school teachers have focused on whole school development, over an extended period of time, and on improving the professional capability of teachers (MOE, 2006c). Professional development opportunities for teachers have changed from a focus on curriculum delivery and what children must learn to how students learn, and changing teacher beliefs and practices (Ministry of Education, 2006c). Teachers are becoming empowered to trial new methods of teaching and learning, and a goal is to provide learning opportunities for students based on more meaningful contexts. An integrated curriculum approach is popular and quality formative assessment is becoming a priority. The learner is viewed holistically with curriculum emphasis now on the well-being and development of the whole child rather than on the attainment of knowledge and skills only. One approach that has been embraced in schools throughout New Zealand is the integrated inquiry process, an approach that provides the conducive learning environment within which the research data was collected for this study. For example, the approach has been utilised at the following schools: Muritai School (2006), St Clair School (2006), Freyberg High School (2006).

Let us consider why I have referred to the integrated inquiry learning approach as a conducive learning environment. The integrated inquiry approach to learning and teaching is built upon the idea that students are actively involved in learning and continually reconstruct understandings in the light of experience. As discussed in the next section, this is a social constructivist approach, as it encourages students to work in groups to think about authentic topics and issues, as they are guided to problem solve and create new knowledge. It encourages students to participate in active investigation, and to integrate rather than separate knowledge as they move from acquisition of facts to the development of deep understanding. The planning process described as Integrated Inquiry by Kath Murdoch (1998) is a model in which a sequence of activities and experiences is developed to build on and challenge student perceptions:
This sequence is inquiry-based in that it begins with students’ prior knowledge and experience and moves through a deliberate process wherein that knowledge is extended, challenged and refined. (Murdoch, 1998, p. 5)

Using this teaching approach, teachers aim to help students develop problem-solving skills and encourage them to become lifelong learners. Developing the skills of inquiry could be viewed as enabling students to develop valuable lifelong learning skills. This stated aim is often included in New Zealand school charter vision statements (Whangaparaoa School, 2006; Otari School, 2006; Liberton Christian School, 2006).

Self-regulated learning is also described as a process of active knowledge construction whereby, according to Zimmerman (2002), an individual utilises cognitive, motivational, emotional, social and volitional resources. Self-regulation skills also support lifelong learning by making learners independent and self-managing. Therefore, I regarded the inquiry learning approach to teaching and learning as a conducive learning environment within which to develop self-regulated learners and I chose it as the context for this study.

This new era of educational change and innovation in New Zealand primary schools is clearly focused on providing conducive learning environments, helping students learn how to learn, and improving learning outcomes for students. This new focus reflected perfectly on my own personal learning journey and that of my school.

1.3: Research Questions

The focus of this study was to explore how teachers introduce and develop particular self-regulating learning strategies and tools in primary classrooms to improve students’ skills in self-management of learning.

The following questions formed the focus of this study:

- How do teachers integrate self-regulated learning strategies into their teaching in order to develop students’ self-regulating behaviours?
• How can self-regulated learning strategies be introduced to the learner at particular phases of Zimmerman’s learning cycle?
• How do different groups of children develop self-regulated learning strategies?

1.4: The Setting and the Participants

The study took place in two schools, located in Central Otago in New Zealand. School A (the school I was principal of) catered for 220 Year one to Year eight students and was situated in the hub of a small rural town with a population of 4404 people. The school had predominately Pakeha with 11% Maori students. School B catered for 93 Year one to Year eight students and was situated in a small rural community with a population of 1500 people. School B had predominately Pakeha with 13% Maori students.

The Board of Trustees of both schools agreed that their schools could be used as sites for this study, and letters were sent to all teachers in both schools inviting them to participate (refer appendix 3). Eight teachers responded favourably: six from one school (School A) and two from School B. Eight teachers, who work with primary-aged students (Years one to eight) were recruited. They were all experienced teachers (ranging from five years classroom teaching to over 30 years), one male and seven females, who employed the integrated inquiry approach to teaching and learning within their classrooms. The teachers taught a cross-section of ages ranging from New Entrants (five-year-olds) through to Year eight students (12-year-olds). All but one class were composite classes with two-year groups in each class (a Year zero (the equivalent of ‘Prep’ in Australia) and Year one class, a Year one and two class, two Year two and three classes, a Year four class; two Year five and six classes, and two Year seven and eight classes). All teachers approached me informally requiring further clarification about aspects of the study, and showing enthusiasm and interest in the study. I elaborate on the group of teachers and my relationships to in Chapter 3. All teachers employed the integrated inquiry approach to teaching and learning within their classrooms. This factor was central to the research study as the next section will detail.
1.5: Social Constructivist Learning Environments

In this section I discuss principles about learning that I believe underpin this study. The principles are based on social constructivist theory and when linked together describe the environmental elements within which self-regulated learners could be developed. Social constructivism is a type of cognitive constructivism that emphasizes the collaborative nature of much learning. It was developed by Soviet psychologist Lev Vygotsky. Unlike the cognitive theorists Piaget and Perry, Vygotsky argued that it was not possible to separate learning from its social context. He (1978) stated that learning is the process by which learners are integrated into a knowledge community, that all learning is a product of social interactions. He claimed knowledge is not simply constructed, it is co-constructed. When we link Vygotsky’s thinking to learning environments we see students working together in groups towards a common goal. Students are actively exchanging ideas which will promote critical thinking and enable them to learn from each other. Collaborative learning allows students to actively reconstruct their knowledge through peer-to-peer dialogue, discussing, sharing and reconceptualising.

Vygotsky (1978) distinguished between two developmental levels: the level of actual development, when the learner can independently solve problems, and the level of potential development, which is the level of development the learner is capable of reaching with the help of a teacher or in collaboration with peers. In the social constructivist classroom, the teacher works with a group and facilitates the learning process. Students are co-operating and negotiating. In an inquiry classroom, for example, students work collaboratively to articulate new understandings, analyse, challenge, and synthesise ideas, answer and refine questions, and reflect on their learning (Murdoch, 1998). Through discussion and activities the teacher and peers help the learner to reach their potential development level. Vygotsky termed this the zone of proximal development (Vygotsky, 1978).

Social constructivists see motivation to learn as both intrinsic and extrinsic, that is, students are motivated by successfully working with their peers (extrinsic), and
also by their internal drive to understand and promote the learning process. In
other words, learners are motivated to take control of their own learning. Butler
and Wynne (1995) claim that the most effective learners self-regulate their
thinking and learning. Zimmerman (1994) reiterates this stating that research
overwhelmingly suggests that learning is most effective when learners have some
control over what and how they learn. Self-regulated learners develop skills that
enable them to investigate topics in meaningful ways. Zimmerman’s definition of
self-regulated learning incorporates social cognitive constructs, describing
learners as active participants in the learning process. The inquiry classroom
allows students to become active learners by motivating them to engage in inquiry
and to develop strategies, goals, and meaning. Inquiry encourages students to
know, or be involved in the development of, the criteria for any learning
experiences that will be assessed. Students self-and peer-assess, monitor their own
progress, and become aware of their next learning steps. As Zimmerman was a
key theorist in shaping my initial thinking, I will elaborate on his theory and how I
used it in the next chapter.

In a social constructivist classroom, learning is centred on authentic tasks, guided
by teacher scaffolding, and engages students in meaningful exploration and
inquiry. Donovan et al. (1999) state that authentic learning allows students to
explore, discover, discuss, and meaningfully construct concepts and relationships
in contexts that involve real-world problems and studies that are relevant and
interesting to the learner. Activities are hands-on, minds-on, that is, students are
able to manipulate objects, formulate questions, and seek answers to real-life
issues in a collaborative manner, using a wide range of expert knowledge.
Programmes are attractive, interesting and challenging for the students. The
inquiry classroom engages the learner in activities in purposeful, real-life
contexts, stimulating students to form questions about a topic giving time to
explore answers. Wilson and Jan (2003) say that the process encourages learners
to examine the complexity of the world and to form concepts and generalizations
instead of being told simple answers to complex problems.

Vygotsky (1978) emphasized the role of language and culture in learning. He
claimed that language and culture play essential roles both in human intellectual
development and in how humans perceive the world. Humans' linguistic abilities enable them to overcome the natural limitations of their perceptual field by imposing culturally defined sense and meaning on the world. Language and culture are the frameworks through which humans experience, communicate, and understand reality. In the classroom, therefore, students must have the opportunity to read, write, discuss, or be engaged in solving problems. They must engage in higher-order thinking tasks such as analysis, synthesis, and evaluation. As Bonwell and Eison (1991) claim, students form new ideas by using what they already know and through making connections with new information. Salomon and Perkins (1989) describe this as an active conception of learning which leads to deeper understanding and the transference and application of knowledge to new situations. As Fink (1999) says, the active learner is involved in self-reflecting on a topic, discussing a topic with a small group, watching or listening to others relate to what they are learning about, and doing something (designing, building a model, arguing, investigating, writing, etc). An inquiry classroom incorporates all of these elements by purposefully offering students activities designed to actively engage their thinking and experience meaningful learning. The inquiry classroom incorporates all the above social constructivist principles, providing a rich, active learning environment within which self-regulated learners can be nurtured.

1.6: Describing a Self-Regulated Learner and How They Learn

Describing a self-regulated learner and how they learn is a complex task as most definitions simply describe the processes involved. Researchers such as Zimmerman (1989), Boekaerts (1999) and Corno (1992) emphasise the importance of cognitive, motivational/volitional and metacognitive processes. Students who naturally self-regulate know about themselves as learners and have knowledge about learning tasks and environments. They have an understanding about various learning strategies, and they know how, when, and why to use the strategies in a specific context. They monitor their own thinking and problem-solving, allocating their time and assessing their progress effectively. They actively find a way to succeed and are motivated to learn. They continually reflect, making changes in order to complete tasks and succeed. Heo (2000) claims that self-regulated learners take personal learning responsibility and expect success.
These characteristics together describe a learner teachers are continually striving to develop. A student who is motivated to learn and knows himself/herself as a learner, can utilise strategies and skills to reflect on their learning, and most importantly, is a learner who takes responsibility for their own learning. In order to develop this responsibility and learner autonomy, the learning environment should encourage active, authentic learning, collaboration, and problem-solving. As described above, the inquiry classroom utilises specific strategies and skills to enable the learner to become motivated and responsible for their own learning.

1.7: Self-Regulated Learning and Enhanced Learning

Zimmerman (1990) relates that Benjamin Franklin wrote extensively about techniques he used to improve his learning, erudition and self-control. Franklin detailed how he set learning goals for himself, and he consciously selected exemplary written models to improve his writing. As Zimmerman states, Franklin’s use of these procedures is an indication that self-regulation has been deemed important for a very long time.

Zimmerman was a key theorist in shaping my initial thinking. I have used Zimmerman’s theory as opposed to other self-regulated learning theorists, as it is grounded in social constructivist principles, encompasses a broader perspective of the learner and distinguishes three phases of learning which provided the classroom intervention framework for this study. I will return to elaborate on his theory and how I am using it in the next chapter.

Self-regulated learning is viewed as an important aspect of student academic performance and achievement in classroom settings. Zimmerman (1990) provides an overview of research related to the distinctive features of self-regulated learning for acquiring knowledge and skill. He argues that students’ use of self-regulated learning strategies makes a distinctive contribution to their academic achievement apart from their general ability; self-regulation training not only improves students’ learning, but it also improves their perceptions of efficacy, a widely studied measure of students’ motivation to self-regulate; students who display initiative, intrinsic motivation and personal responsibility achieve particular academic success. Zimmerman (1989) states those strategies that have
been shown to have a particular impact on achievement are self-observing, self-judging, and self-reacting (e.g. goal-setting, planning). More recently, Zimmerman (1998) has noted the strategies of self-evaluation and monitoring, goal-setting and strategic planning, strategy implementation and monitoring, and strategic outcome monitoring. This study aimed to explore how teachers can integrate the above strategies into classroom programmes of primary aged students. The next section aims to discuss why self-regulated learning strategies are important to the learner, to describe broadly what they are, and then specifically examine the key strategies and tools used in this study in relation to research in this area.

1.8: Self-Regulated Learning Strategies: Why Are They Important?

There is evidence to support the notion that training in certain self-regulation strategies enhance school achievement and performance. A research study carried out by Camahalan (2006), involved a specific Self-Regulated Learning Programme consisting of four main components, one of which was to explicitly instruct students in self-regulated learning strategies. They included 14 self-regulated learning strategies derived from Zimmerman’s Social Cognitive Theory (1989). The purpose of each strategy was to improve students’ self-regulation of their personal functioning, academic behavioural performance, and learning environment. Strategies included goal-setting and planning, self-evaluation and seeking information. Camahalan concluded that self-regulated learning strategy instruction engaged students’ involvement and interest and gave them the opportunity to monitor and evaluate progress of their work; set goals and plan for activities; as well as select or arrange the physical environment to make learning easier. Camahalan recommends more intervention research with students in actual learning settings facilitated by teachers, as in the case of my reported thesis study (Dissertation Section 2). I employed similar strategies which are outlined below.

Paris, Lipson, and Wixson (1983) state there are three important metacognitive aspects of strategies, often referred to as: declarative knowledge (what the strategy is): procedural knowledge (how the strategy operates): and conditional knowledge
(when and why a strategy should be applied). Paris and Winograd (1999) state that knowing these characteristics of strategies can help students to discriminate productive from counterproductive tactics and then to apply appropriate strategies. Teachers need to articulate clearly what each learning strategy is about, when it might be applied, and why it is important, in order to help their students to develop declarative, procedural, and conditional knowledge. The complexity of these steps will depend on the age of the students, with older students needing a greater degree of explanation and discussion. As Sturomski (1997) states, learning is fostered when the learner has opportunities to practice the new information, receive feedback from an expert, such as a teacher, and apply the knowledge or skill in familiar and unfamiliar situations, with less and less assistance from others. This ‘unpacking’ may need regular reflection time, therefore, in order to help students take ownership of the strategies and value their worth.

Another important aspect to consider is the age at which the self-regulation strategies are to be introduced. When introducing the self-regulated strategies to older students it may be necessary to carefully plan, and provide, many reflection and discussion opportunities in order to help them adopt the new approach. Older students may resist the new approach and strategies, or adopt them at the superficial level, responding only to the teacher’s perceived intentions. Equipping students with self-regulating learning strategies is not sufficient, helping students to take ownership of, and value the strategies is crucial.

Sturomski (1997) advises teachers to introduce the strategies and demonstrate how and when the strategies are used, and allow time for students to discuss, reflect upon, and practice the strategies with authentic tasks. Then as students begin to assume responsibility for strategic learning, teachers can gradually decrease the reminders and guidance.
1.9: What Are Self-Regulated Learning Strategies?

Zimmerman (1989) broadly distinguishes self-regulated learning strategies according to three phases of learning: the forethought phase, where the student utilises goal-setting and planning strategies; the performance phase, where the student deploys the previous phase strategies and utilises attention-focusing and specific task strategies; the self-reflection phase, where the student reflects on their progress and achievement attributing success or failure to specific strategies employed. Pajares (2002) states that teachers should make self-regulatory strategies a focus of professional practice and that students who develop strategies early persevere and self-perpetuate. Pajares states it is a challenge for educators to make their students’ self-regulatory strategies automatic and habitual as early as possible. My Dissertation investigated how this could be accomplished using specific self-regulated learning strategies and tools.

1.10: Specific Self-Regulated Learning Strategies and Tools Used in this Study

A detailed description and discussion of the strategies and tools is included in the following chapter, showing how they have emerged in theory and in practice. The strategies used were: sharing the learning intentions, developing success criteria, giving quality formative feedback, setting goals, monitoring progress against success criteria and exemplars, monitoring goals, sharing progress during performance/sharing time, self-assessing, peer-assessing, developing next learning steps, and writing learning log reflective statements. The following tools were used: on task/off task checklists, carrels, a timeout capsule, personal CD players and STARS.

As described in the Introduction to the Folio, the strategies and tools introduced to the students have developed from my own professional journey. Some strategies have evolved from research in the field (sharing the learning intentions, goal-setting, formative feedback), while others are more original (STARS, carrels, performance/sharing time). In the following chapter, I intend to make the argument that the strategies and tools that I have used, and that the teachers in the research study used, can contribute to classroom practices that enable students to
become more involved in their own learning and adept at reflecting and self-assessing, as part of self-regulating their learning. It is important to note however, that the strategies and tools are considered from the dominant paradigm rather than the cultural setting they are being used. As stated earlier, the strategies and tools were central in developing my thinking around self-regulated learning and defining the research questions.

1.11: Significance of the Study

As stated earlier, since I began this study, the New Zealand Ministry of Education has released a revised curriculum statement for all New Zealand Schools. The revised curriculum encompasses five key competency groups, one of which, Managing Self, includes key features of self-regulated learning. An intended outcome of this study was to explore self-regulated learning strategies and identify problems/challenges teachers may have when integrating the strategies into their classroom programmes.

A powerful means to facilitate change in schools is to become partners in collaboration with schools. I worked with a small number of teachers in two schools throughout the study, linking self-regulation into the integrated inquiry learning programmes that were already established. The teachers had the opportunity to trial methods of developing self-regulating learners before the new key competency groups were officially introduced into schools. On the basis of the data and analysis produced, this study offers valuable insight to other teachers concerning how key self-regulated learning strategies and skills could be integrated into their class programmes, and as well, ways to address issues that arise in the process.

In summary the significance of this study is:

- It provides new knowledge of how teachers in New Zealand can integrate key competency skills, specifically self-regulating skills, into their classroom programmes;
• It provides insight into best practices as well as problems encountered, through an exploration of teachers’ experiences of developing self-regulated learners and self-regulated learning strategies;
• It considers how different groups of children work with different self-regulated learning strategies.

1.12: Summary of the Chapters

In Chapter One I have contextualised this research study within the wider New Zealand educational perspective. I have then presented and explored principles about learning and the learning environment, which are fundamental to this study. Finally, I have briefly introduced the key strategies and tools used in this study.

Chapter Two examines the literature on the different theories of self-regulated learning, and in particular, the social cognitive theory within which this study was situated. This theoretical orientation is explored further and theories of learning are defined, in particular, Zimmerman’s Self-Regulated Cycle of Learning. This study employed this cycle of learning to situate the strategies and tools. The chapter will review the literature on self-regulated learning and conclude by examining the self-regulated learning strategies and tools used in this study.

Chapter Three briefly discusses quantitative and qualitative paradigms before discussing in detail the chosen methodology: action research. The chapter examines the challenges and advantages of using this qualitative methodology, and describes action research in practice. The research design is described and the range of methods that were used is presented. Finally, ethical issues are considered.

Chapters Four and Five provide the data presentation and analysis in association with the research questions of this study. Chapter Four presents the results in association to research question one: How do teachers integrate self-regulated learning strategies into their teaching in order to develop students’ self-regulating behaviours? and question two: How can self-regulated learning strategies be introduced to the learner at particular phases of Zimmerman’s learning cycle? Chapter Five presents the results in association with research
question 3: *How do different groups of children develop self-regulated learning strategies?*

Chapter Six presents the conclusions, discussing the relevance of the findings for teachers, for the New Zealand context, and implications for future research.
CHAPTER 2: Literature Review

2.1: Introduction

This chapter will begin by briefly outlining major educational theories in order to situate the theoretical perspectives that inform this study. The chapter will then explore the social cognitive perspective, explaining its compatibility with constructivism, and make links to the application of an integrated inquiry curriculum. This theory will then be explored in relation to self-regulated learning, with the aim of demonstrating the connections and inter-relations between the theories. Self-regulated learning will be critically reviewed from various theoretical perspectives, and different self-regulated learning models compared, in order to present and clarify the model adopted for this study. I begin by summarizing the major schools of educational theory relevant to this study: behaviourism, cognitivism, and constructivism.

2.2: Behaviourism and How It Applies to Learning

Learning, according to the behaviourist theories, is an observable change in behaviour. The primary theorists of behaviourism are Edward Thorndike, who established a connection between certain stimuli and voluntary behaviours, John Watson, who applied the concepts of classical conditioning to emotional reactions, Ivan Pavlov, who was known for classical conditioning, and BF Skinner, who worked in the area of operant conditioning. According to these behaviour theorists, learning can be defined as the relatively permanent change in behaviour brought about as a result of experience or practice. Huitt and Hummel (2006) state that the focus of the behavioural approach is on how the environment impacts overt behaviour. Buell (2005) says behaviourism is an approach to learning which focuses only on objectively observable behaviours and discounts mental activities. The most critical factor that influences learning is the environmental condition, meaning the arrangement of stimuli and consequences within the environment. The learner is viewed as passively adapting to their environment. The instruction focuses on conditioning the learner's behaviour. Learning occurs when there is a measurable change in the frequency of observable performance. The learner adapts his or her behaviour to contingencies of events.
and objectives. Buell (2005) suggests learning is a gradual strengthening of the learned relationship between cue and behaviour, driven by a pattern of consequences (reinforcement).

Strengths of behaviourism are that clearly stated objectives allow the learner to focus on one goal and cueing responses to behaviour allow the learner to react in a predictable way under certain conditions. In a stressful situation, like combat or flying a plane, cued responses can be a very valuable tool. (Buell, 2005, p. 3)

Buell (2005, p. 3) describes the four criticisms of behaviourism as: firstly, behaviourism is one dimensional and does not account for all kinds of learning, since it disregards the activities of the mind; secondly, the learner might find himself in a situation where he needs to respond, but the mental ‘cues’ he has learned to respond to might not exist; thirdly, behaviourism does not explain some learning such as the recognition of new language patterns by young children for which there is no reinforcement mechanism; and finally, research has shown that animals adapt their reinforced patterns to new information. For instance, a rat can shift its behaviour to respond to changes in the layout of a maze it had previously mastered through reinforcement.

In summary, behaviourists study individual’s behaviour whereas cognitivists, whom I will briefly discuss in the next section, study the mental processes underlying behaviours.

### 2.3: Cognitivism

As noted above, one of the criticisms of the behaviourist school is its one-dimensional view of learning and disregard for the activities of the mind. The cognitive approach and theory, on the contrary, focuses on mental processes as the primary object of study. Wilhelmsen et al (1998) state that in cognitive theories knowledge is viewed as symbolic, mental constructions in the minds of individuals, and learning becomes the process of memorising these symbolic representations where they may be processed. The cognitive approach and cognitive theories have emerged offering a new perspective, employing ‘information-processing ideas’, and emphasising the active mental processing on
the part of the learner. However, knowledge is still viewed as given and absolute as in the behaviouristic school.

To sum up the important differences (as noted by Wilhelmsen, Asmul and Meistad, 1998):

- **Behaviourism**: is based on behavioural changes; it focuses on a new behavioural pattern being repeated until it becomes automatic.
- **Cognitivism**: is based on the thought process behind the behaviour. Changes in behaviour are observed but only as an indicator to what is going on in the learner's head.
- **Constructivism**: is based on the premise that we all construct our own perspective of the world, based on individual experiences and schema. It focuses on preparing the learner to problem solve in ambiguous situations.

### 2.4: Constructivism and How it Applies to Learning

In the last chapter, I demonstrated how particular principles of inquiry learning, derived from the social constructivist theory of Vygotsky, are important considerations when establishing an environment that is conducive to developing self-regulated learners. Here, I turn to a closer examination of not only Vygotsky’s work but also that of Piaget and Dewey in order to clarify the links between classroom environments, teaching approaches, and self-regulatory practices. In order to do this, I consider a number of general principles of learning that are derived from constructivism as described by Epstein (2002).

Learning is viewed as an active process in which the learner uses sensory input and constructs meaning out of it. People learn to learn as they learn, that is, learning consists both of constructing meaning and constructing systems of meaning. Physical actions and hands-on experience may be necessary for learning, especially for children, but are not sufficient; teachers need to provide activities which engage the mind as well as the hand. Dewey (1933) called this **reflective activity**. Learning involves language and the language that we use influences our learning. Vygotsky (1978) argued that language and learning are inextricably intertwined. Learning is a social activity and our learning is
intimately associated with our connection with other human beings, our teacher, our peers, our family, as well as casual acquaintances. Dewey (1933) pointed out that most traditional learning is directed towards isolating the learner from social interaction, and seeing education as a one-on-one relationship between the learner and the objective material being learned. Learning is contextual, that is, we learn in relationship to what else we know, what we believe, our prejudices and our fears. We need knowledge to learn, it is not possible to absorb new knowledge without having some structure, developed from previous knowledge, to build on. The more we know, the more we learn. Learning is not instantaneous; it takes time to learn. For significant learning we need to revisit ideas, ponder them, try them out, play with them, and use them. The key component to learning is motivation (Epstein, 2002, p. 3). I will now link these general principles of constructivist learning to the key theorists.

Richardson (1997) says that psychological or Piagetian constructivists assume that students come to classrooms with ideas, beliefs, and opinions that can be altered or modified by a teacher who facilitates this alteration by devising tasks and questions that create dilemmas for students. Knowledge construction occurs as a result of working through these dilemmas. Characteristic instructional practices include ‘discovery learning’ and hands-on activities, such as using manipulatives; student tasks that challenge existing concepts and thinking processes; and questioning techniques that probe students' beliefs and encourage examination and testing of those beliefs.

Piaget (1983) discussed the role of maturation (simply growing up) in children's increasing capacity to understand their world. He believed they could not undertake certain tasks until they are psychologically mature enough to do so. He proposed that children's thinking does not develop entirely smoothly: instead, there are certain points at which it ‘takes off’ and moves into completely new areas and capabilities. He described the transitions as taking place at about 18 months, seven years, and 11 or 12 years. In effect, before these ages, children are not capable (no matter how bright) of understanding things in certain ways. Piaget’s ideas have been used as the basis for scheduling the school curriculum.
Vygotsky (1978) suggests that social constructivism emphasizes education for social transformation and reflects a theory of human development that situates the individual within a socio cultural context. What is taught (knowledge), and how it is taught and presented are influenced by the historical and cultural environment that generates them. In some theories of constructivism (e.g. Piaget), the teacher plays a more limited role compared to Vygotsky’s theory where the teacher plays a very important role in learning. Social constructivism argues that students can, with help from adults or children who are more advanced, grasp concepts and ideas that they cannot understand on their own. Rogoff (1998) states, this is a view whereby children make the most significant development when they participate in activities slightly beyond their competence with the aid of adults and other more skilled children Students are not left unguided and unaided to explore and discover knowledge. As Epstein (2002) explains, they are guided as they approach problems, encouraged to work in groups to think about issues and questions, and supported with encouragement and advice. It is through this guided participation by more skilled adults that children eventually internalize the culturally mediated signs of language and thought termed ‘scaffolding’ by Vygotsky (1978).

Schuman (1996) notes that the major weakness of constructivism is when the learner is in a situation where conformity is essential and divergent thinking and action may cause problems. Schuman states the strength of constructivism is when the learner is able to interpret multiple realities and is then better able to deal with real-life situations. If a learner can problem solve, they may be better able to apply their existing knowledge to a novel situation. Within an integrated inquiry approach to learning, as outlined in Chapter One and the context for this study, students have the opportunity to work co-operatively to solve real-world problems, and are stimulated to think divergently and to take social action. Throughout the learning process the teacher guides and supports the learner.

The basic features of constructivism, as described above, can be incorporated into a social constructivist and integrated inquiry curriculum framework, which this study examines. The theory of social constructivism underpinned my training and
experience as a teacher in New Zealand, just as the revised New Zealand Curriculum Framework embodies many constructivist features and advocates an integrative approach to learning.

2.5: Self-Regulated Learning – an Overview

Montalvo and Torres (2004) claim that self-regulated learning research has emerged since the mid-1980s within psychological literature, and become one of the essential axis of educational practice. McManus (1995) states that the construct of self-regulated learning is still ill-defined but is viewed broadly as an amalgam of numerous cognitive, metacognitive, motivational, and social factors which effect how a learner approaches learning. Zimmerman (1989), one of the leading researchers in this field, describes self-regulated students as those who are metacognitively, motivationally, and behaviourally active participants in their own learning process. Self-regulated students personally initiate and direct their own efforts to acquire knowledge and skill rather than relying on others, such as teachers, parents, or other agents of instruction.
From this broad description, self-regulated learning is viewed as a complex activity involving numerous processes and can be investigated from the perspective of several different theoretical approaches including behavioural, cognitive, social cognitive, and constructivist. In behavioural theory, regulation is through external reinforcement. In cognitive theory, self-regulation is equivalent to metacognition, that is, knowing about and regulating one’s thinking processes. Davidson (1995) argues that social cognition theory views self-regulation as combining self-observation, self-judgment, and self-reaction, while constructivist theory views individuals as action agents who construct and reconstruct their knowledge.

The above theories together informed and shaped this study. As this study was situated within the social cognition theory, its historical development and main tenets are examined in the next section.

2.6: Social Cognitive Theory

The basic tenets of this theory developed from Miller and Dollard’s (1941) theory of social learning and imitation, which rejected behaviouralist notions of associationism in favour of drive reduction principles. Miller and Dollard described personality as comprising habitual social behaviours acquired through learning (as cited in Bandura, Harackiewicz, and Kihlstrom, 1990, p. 86). Accordingly, Miller and Dollard sought to understand the social circumstances under which these habits were acquired, with an emphasis on imitation of others as a habit acquired through secondary (social) reinforcement, hence, the name of the theory (Bandura, Harackiewicz, and Kihlstrom, 1990, p. 86).

In 1963, Bandura and Walters broadened this theory with the principles of observational learning and vicarious reinforcement. Observational learning is where people can learn by observing the behaviours of others and the outcomes of those behaviours. Vicarious
reinforcement occurs when a modeled behaviour is reinforced for a response and then the observer shows an increase in that same response.

Pajares (2002) claims the social cognitive theory can be clearly contrasted to the theories of human functioning that emphasise the importance of environmental factors in human development. Social cognitive theory extends behaviourism and considers, in addition to behaviour and the environment, learners' beliefs and expectations. Eggen and Kauchak (2003) state that modeling lies at the core of social cognitive theory as in learning from models, observers go through the processes of attention (observation), retention in memory, reproduction of the observed behaviour, and motivation to produce the behaviour in the future. Pajares (2002) argues that while the social cognitive theory upholds the behaviourist notion that response consequences mediate behaviour, it contends that behaviour is largely regulated antecedently through cognitive processes.

Bandura (1977) identified the next key element of this learning theory: self-belief. From this new perspective, people are viewed as self-organising, proactive, self-reflecting and self-regulating rather than as reactionary shaped by environmental forces or inner impulses. Bandura renamed his theory ‘Social Cognitive Theory’ and presented a framework that emphasized the critical role cognition plays in people’s capability to construct reality, self-regulate, encode information, and perform behaviours. Bandura’s Social Cognitive Theory, particularly his interactive framework is relevant to my study because it emphasizes the links between classroom environments and self-regulatory practices, both aspects are central to this study.

Research conducted stemming from Bandura’s theories focused on self-regulatory processes, their determinants, and their interrelationships (Zimmerman, 1989). Research focused on self-reinforcement, standard setting, delay of gratification, goal-setting, self-efficacy perceptions, self-instructions, and self-evaluations. As Zimmerman points out, a number of researchers tried to integrate this research into general models of self-regulation. In 1989, Zimmerman presented his definition of self-regulated learners as students who are metacognitively, motivationally, and behaviourally active participants.
in their own learning process. Zimmerman’s definition incorporates the following social
cognitive assumptions: triadic reciprocity, that is, reciprocal causation among personal,
behavioural and environmental influences; self-efficacy, that is, how an individual
perceives their ability to carry out a task, is a key variable affecting self-regulated
learning; and self-regulated learning involves three classes of sub-processes (self-
notes three important advantages of approaching self-regulated learning from a social
cognitive view point: firstly, that it distinguishes the effects of personal (self-) regulatory
influences from overt behavioural ones and can explain the relative advantage of each;
secondly, it links students self-regulatory processes to specific social learning or
behaviourally enactive experiences and can explain their reciprocal impact; and thirdly, it
identifies two key processes through which self-regulated learning is achieved: self-
efficacy perceptions and strategy use, and can explain their relation to student motivation
and achievement in school. He also notes that it can render students’ self-regulated
learning processes observable and trainable through specific experiences which
encourage academic interventions. Before expanding on Zimmerman’s Self-Regulated
Learning Cycle in more detail, I briefly outline some of the other major self-regulated
learning theorists and compare their varying approaches.

2.7: Self-Regulated Learning Models: a Comparison

Over the past 10 years, the concept of self-regulated learning has been embraced and
heavily researched, with many educational psychologists proposing theoretical models
and setting up studies to test the theories and provide pragmatic information about self-
regulated learning. As an indicator of how many and varied the models of self-regulated
learning are, for example, in a special issue of Educational Psychologist on self-regulated
learning (1995, volume 30, number 4), a number of leading educational psychologists
(Alexander, Corno, Pressley, Schunk, Zimmerman) respond to Winne’s argument that
self-regulated learning is an inherently constructive and self-directed process. Winne
views self-regulated learning as a balance of deliberate, willed cognition, that is, talking
to and believing oneself, with inherent qualities of cognition, that is, knowledge and its
processing, grounded in deeply seated knowledge and beliefs about a domain, task, self,
and strategies for learning. In contrast, Zimmerman states this metacognitive processing perspective fails to include behavioural and social-environmental factors such as fatigue, stressors, or competing attractions (Zimmerman, 1995). By adopting Zimmerman’s theoretical perspective on self-regulated learning, this study has encompassed a broader perspective of the learner by including metacognitive, behavioural and socio-environmental factors. This, in turn, allowed multiple perspectives to develop.

Puustinen and Pulkkinen (2001) compared the latest self-regulated learning models of Boekaerts et al., Borkowski et al., Pintrich, Winne et al., Zimmerman against four criteria: background theories, definitions of self-regulated learning, components included in the models, and empirical work. They conclude that Zimmerman’s model reflects Bandura’s 1986 Social Cognitive Theory, underlining social foundations of thinking and behaviour. Pintrich’s model is also derived mainly from the social cognitive approach, whereas Boekaerts has been mostly influenced by Kuhl’s 1985 Action Control Theory and by Lazarus and Folkman’s 1984 Transactional Stress Theory. Winne’s approach has the most varied background with influences from Bandura and Zimmerman, Carver and Scheier, Kuhl and Paris and Byrnes.

Boekaerts, Pintrich and Zimmerman define self-regulated learning as a goal-oriented process, emphasizing the constructive or self-generated nature of self-regulated learning and agree that monitoring, regulating, and controlling one’s own learning includes cognitive but also motivational, emotional and social factors. Borkowski and Winne define self-regulated learning as a metacognitively governed process aimed at adapting the use of cognitive tactics and strategies to tasks. Importantly, though, Borkowski and Winne both assume self-regulated learners to be intrinsically motivated and goal-oriented and also assume self-regulated learning to include motivational, emotional, and social factors. Puustinen and Pulkkinen conclude that the differences in the definitions become blurred when examining the models in detail and suggest it is the relative weight given to the component parts, rather than the components themselves, that varies from one model to another.
The terminology also varies from one model to another, but all the authors assume self-regulated learning to proceed from some kind of preparatory or preliminary phase, through the actual performance or task completion phase, to an appraisal or adaptation phase. When comparing their empirical research, two major orientations emerge: a motivation orientation and a strategy orientation. Boekaerts and Pintrich are mainly motivation oriented whereas Borkowski’s and Winne’s research is principally strategy oriented. Zimmerman’s research has been both motivation and strategy oriented.

The comparisons show that the models were, globally, rather different from each other: only two of the models were similar. The authors conclude that their theoretical background was an important differential feature. Two authors (Pintrich and Zimmerman), drew on the same background theory, the social cognitive theory, and produced similar models. Boekaerts’ model also had many affinities with the social cognitive models as compared with the other models. Puustinen and Pulkkinen’s conclusions support the choice of Zimmerman’s model as a framework for this study.

Puustinen and Pulkkinen (2001) make a valid and pertinent point when they state that a major goal of any modern education should be the promotion of self-regulatory skills, and thus the creation of opportunities for life-long learning. Therefore, it is desirable that in the future we move towards a more integrated conception of self-regulated learning in order to contribute to the development of educational aims in this field. By situating itself within the more holistic social cognitive theory of self-regulated learning, this study offers further insight into, and understanding of, how to develop self-regulated learners from a young age.

2.8: Zimmerman’s Self-Regulated Cycle of Learning

As stated in the previous chapter, Zimmerman was a key theorist in shaping my initial thinking. His research on self-regulated learners is based on a social constructivist perspective which also underpins the inquiry learning context for this study. Zimmerman (1989) defines three major phases of the self-regulated learning cycle: forethought, performance or volitional control, and self-reflection. The forethought phase is what a
learner brings to the learning situation, that is, what they know or think they know and can do; it “refers to influential processes and beliefs that precede efforts to learn and set the stage for such learning” (Zimmerman, 1989, p. 2). The performance or volitional control phase is basically the ability to stay on task no matter the distractions or challenges; it “involves processes that occur during learning efforts and affect concentration and performance” (Zimmerman, 1989, p. 2). The self-reflection phase involves the learner in self-assessing and reflecting on their progress, adapting and formulating their next learning steps; it “involves processes that occur after learning efforts and influence a learner’s reactions to that experience” (Zimmerman, 1989, p. 2).

Table 1 below displays the processes occurring during each phase of Zimmerman’s Self-Regulated Learning Cycle (2002).

<table>
<thead>
<tr>
<th>Zimmerman’s Self-Regulated Learning Cycle phase processes (Zimmerman, 2002, pp. 67-68)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forethought phase processes</strong></td>
</tr>
<tr>
<td><strong>Task Analysis:</strong></td>
</tr>
<tr>
<td><em>Goal-setting:</em> deciding on specific outcomes of learning</td>
</tr>
<tr>
<td><em>Strategic planning:</em> selecting learning strategies or methods designed to attain the desired goals.</td>
</tr>
<tr>
<td><strong>Self-motivation beliefs:</strong></td>
</tr>
<tr>
<td><em>Influenced by:</em> self-efficacy, outcome expectations, intrinsic interest value, learning goal orientation.</td>
</tr>
<tr>
<td><strong>Performance phase processes</strong></td>
</tr>
<tr>
<td><strong>Self-control:</strong></td>
</tr>
<tr>
<td><em>Imagery:</em> forming mental pictures to enhance learning and recall.</td>
</tr>
<tr>
<td><em>Attention focusing:</em> focusing on the task, protecting the student’s intention to learn from distractions and from competing intentions.</td>
</tr>
</tbody>
</table>
**Self-instruction:** telling oneself how to proceed during a learning task.

**Task strategy:** choosing an appropriate strategy.

**Self-observation:**

- **Self-recording:** recording personal events about learning.
- **Self-experimentation:** simple inquiry about one’s own learning.
- **Self-monitoring (covertly):** cognitive tracking of personal functioning.

**Self-reflection phase processes**

**Self-judgment:**

- **Self-evaluation:** comparing self-monitored information with a standard or goal.

**Causal attribution:** attributing success or failure to results, identifying source of errors, identifying successful strategies.

**Self-reaction:**

- **Self-satisfaction/affect:** applying positive or negative self-reactions to strategy use.
- **Adaptive/defensive:** evaluating the whole process, adapting different strategies, refining the process.

<table>
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<tr>
<th>Table 1: Zimmerman’s Self-Regulated Learning Cycle (2002).</th>
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</table>

**2.9: Self-Regulated Learning Strategies**

An important aspect of self-regulated learning involves a student developing a repertoire of strategies: for learning, studying, controlling emotions, pursuing goals, and so forth. Paris and Winograd (1998) state, however, it is one thing to know what a strategy is and quite a different thing to be inclined to use and to modify it as task conditions change. As stated in Chapter One, there are three important metacognitive aspects of strategies, often referred to as declarative knowledge (what the strategy is); procedural knowledge (how the strategy operates); and conditional knowledge (when and why a strategy should be applied). Paris and Winograd (1998) state knowing these characteristics of strategies can help students to discriminate productive from counterproductive tactics and then to apply appropriate strategies.
Siegle (2005) maintains that the individual set of self-regulation strategies usually used by successful students fall into three categories: personal, these strategies usually involve how a student organizes and interprets information such as goal-setting, planning and monitoring; behavioural, these strategies involve actions that the student takes such as self-evaluating; and environmental, these strategies involve seeking assistance and structuring of the physical study environment, such as seeking information, environmental structuring, and seeking social assistance.

The strategies and tools used in this study included aspects of all the above categories as well as other sources. These will be described in the next section.

As noted earlier, Zimmerman broadly distinguishes self-regulated learning strategies according to three phases of learning: the forethought phase, the performance phase, and the self-reflection phase. Pajares (2002) notes that teachers should make self-regulatory strategies a focus of professional practice, as students who develop strategies early on persevere and self-perpetuate. Pajares claims that helping students to develop automatic and habitual self-regulating strategies, as early as possible, is a challenge for educators. This study investigated how this could be accomplished using specific self-regulated learning strategies and tools.

### 2.10: The Cycle of Learning and Self-Regulated Learning Strategies and Tools

This study aimed to investigate how teachers could introduce specific self-regulated learning strategies during each phase of the learning cycle to motivate the learner to enter the next phase and ultimately help the learner to progress and achieve success. The strategies and tools and their particular phase of integration are outlined in Table 2 below.

<table>
<thead>
<tr>
<th>Phase of Zimmerman’s Self-Regulated Learning Cycle (2002)</th>
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<tbody>
<tr>
<td><strong>Forethought Phase:</strong></td>
</tr>
<tr>
<td>Analyse the task; set goals; plan learning strategies.</td>
</tr>
<tr>
<td><strong>Proposed Strategy/Tool:</strong></td>
</tr>
</tbody>
</table>
Sharing the learning intentions, developing the success criteria, setting goals, referring to a model/exemplar, referring to using the tools.

**Performance Phase:**
Attention focusing; imaging; choosing strategies; implementing the plan; monitoring performance throughout; self-instruction; self-recording.

**Proposed Strategy/Tool:**
Goal monitoring, using the tools (carrels, CD players with baroque music, STARS, timeout capsule, on task/off task checks), referring to a model/exemplar, referring to the learning intentions and success criteria, performance/sharing time.

**Self-reflection Phase:**
Self-evaluation; attributing success or failure; evaluating the process; refining the process; applying positive or negative self-reactions.

**Proposed Strategy/Tool:**
Reflecting on goals, setting new goals, self-assessing against the learning intentions and success criteria, performance/sharing time, peer-assessment against learning intentions and success criteria, developing next learning steps.

<table>
<thead>
<tr>
<th>Table 2: Zimmerman’s Self-Regulated Learning Cycle (2002) and strategy/tool integration.</th>
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</table>

As stated earlier, self-regulation of learning involves the selective use of specific skills and processes to proactively achieve set goals. Cleary and Zimmerman (2004) report that there is a large body of research showing that students who have been trained in self-regulation skills during learning, such as goal-setting, self-monitoring, and self-reflection processes, display high levels of motivation and achievement. This study aimed to help teachers gain an understanding of self-regulated learning skills and strategies, and how to integrate them into classroom programmes, in order to increase students’ motivation and achievement in school. By applying Zimmerman’s Self-Regulated Learning Cycle (2002) and introducing specific strategies and tools at particular phases of the learning cycle, this study will extend research in this field.
2.11: A Detailed Description of the Self-Regulated Learning Strategies and Tools Used in the Study

The following section provides a detailed description of the strategies and tools used in this study. As stated in the previous chapter, the strategies and tools were developed from my own professional journey and from research in the field, while others were more original. It is important to discuss the strategies and tools in detail to show how they can contribute to classroom practices that enable students to become more involved in their own learning and to become adept at self-assessing, as part of self-managing their learning. As also noted earlier, the strategies and tools were central in developing my thinking around self-regulated learning and defining the research questions. The strategies and tools are now grouped under headings in order to show how they have emerged in theory and in practice.

2.11.1: Formative Assessment Strategies

- Sharing the learning intentions, developing success criteria, receiving quality formative feedback.

From an extensive literature review, Black and Wiliam (1998) reveal that high-quality formative assessment has a powerful effect on student learning. Black and Wiliam indicate that improving learning through assessment depends on five deceptively simple factors: Providing effective feedback to students; student’s active involvement in their own learning; adjusting teaching to take account of the results of assessment; recognising the profound influence of assessment on students’ motivation and self-esteem, both crucial influences on learning; and ensuring pupils reflect on their learning and understand how to improve.

Unfortunately, Black and Wiliam report that high-quality formative assessment is relatively rare in classrooms, and that most teachers do not know how to engage in this type of assessment. Formative feedback is a crucial ingredient to empower and motivate students during the learning cycle. It allows the student to self-assess their progress against set goals and understand how to improve their work. Brophy (1998) reiterates this
point stating that students need sufficient opportunities to practice and apply what they are learning and to receive improvement-oriented feedback.

The self-regulated learning strategies used in this study reflect quality formative assessment practices as reported in the literature. The strategies were embedded in a pedagogy of which they were an essential part (constructivist); they involved sharing learning goals with students; they involved students in self-assessment; they provided feedback; they provided information to be used as feedback to modify the teaching and learning activities in which they were engaged (Black and Wiliam, 1998; Harlen, 1998).

In my experience, formative assessment involves the identification, by teachers and learners, of learning goals, intentions or outcomes, and criteria for achieving these. It consists of rich conversations between teachers and students that continually build and go deeper. It entails the provision of effective, timely feedback to enable students to advance their learning. Students are actively involved in their own learning, and teachers respond to identified learning needs and strengths by modifying their teaching approach(es).

Research shows that by sharing the learning intentions with students at the beginning of a lesson, not only are students more motivated and task-oriented if they know the learning outcome of the task, but they are also able to make better decisions about how to go about the task (MOE, 2005c).

The learning outcome needs to be clear and unambiguous, and explained to students in a way that they can understand. Students’ understanding of the task and their achievement will be maximised if achievement criteria as well as the learning outcome(s) are shared with them prior to the lesson. These criteria need to be the main focus of the feedback given to students. Teachers need to separate the task instructions clearly from the learning outcomes and success criteria. Otherwise, the students may begin their work without knowing clearly the difference between what the teacher wants them to do and what the teacher wants them to learn. Developing the success criteria with the students involves them in their own learning by asking them to link the learning intention with the task instructions. They then have to decide how the two are synthesized to create success
criteria – a much more challenging learning experience than simply being given the information. In my experience, children as young as five years old, with help, can begin to learn this complex skill and begin to articulate in ‘kids speak’ (that is, age appropriate language) what they are trying to achieve and why.

Shirley Clarke, an assessment expert from the United Kingdom, claims developing success criteria with students means they have even more of a stake in the learning process, are more likely to be able to self-evaluate as they are working, and to ask questions about the task as it evolves (Clarke, 2005). She notes that when the learning intentions are shared with students, children are more focused and even demand the learning intention, if it is forgotten, as they soon realize how important it is to their understanding of the task. She reports that a learning culture develops in the school as children start to use the language of the learning intentions, rather than the language of the activities, and the quality of the work improves. She states that children persevere for longer at a task and have greater ownership of the lesson as responsibility for the learning is shifted from the teacher to the child. Finally she claims that by being exposed to the learning intentions children are put into an automatically self-evaluative position.

Schools in New Zealand have had the opportunity to undertake whole school professional development in assessment practices. In the early stages, the emphasis was largely focused on summative practices and reporting to Boards of Trustees. However, later, the emphasis shifted to a focus on the value of formative assessment: a shift from assessment of learning to assessment for learning. For this reason, formative feedback, sharing the learning intentions and developing success criteria with students, is becoming more common practice in New Zealand Primary Schools.

Clarke has undertaken a number of professional development workshops with teachers throughout New Zealand, and her publications are used as reference material in schools. In her earlier work, Clarke offered the following principles on formative feedback: feedback needs to be focused on the learning intention of the task and not on comparisons with other children; verbal and non-verbal language from the teacher gives powerful messages to the child about her or his ability; specific feedback from the teacher needs to
focus on success and improvement, rather than correction; children need opportunities to make improvements on their work (Clarke, 2003, p.54)

2.11.2: Planning and Monitoring Strategies

- Setting goals, monitoring progress against success criteria and exemplars, monitoring goals, sharing progress during performance/sharing time.

Goal-setting

The New Zealand Curriculum Framework (MOE, 1993), lists goal-setting and goal monitoring as essential skills for students to develop, and includes these in the Key Competency Group Managing Self which it describes as the ability to set and achieve goals, make plans, estimate time; and self-monitor, self-evaluate and change course when necessary (MOE, 2005a).

Self-regulated learning research also stresses the importance of these life-long skills and how integral they are to the self-regulated student (Locke and Latham, 2003; Schunk and Zimmerman, 1998; Stipek, 2002, Zimmerman 2002).

Grant (2005) succinctly outlines a number of major points to be considered when introducing goal-setting as a learning tool. She notes that learners’ goal orientations affect how a student approaches a task: that is, learners with mastery goals will be oriented towards developing new skills, understanding their work, improving their level of competency, and achieving a personal sense of mastery. Learners with performance goals tend to focus on ability and self-worth, trying to out perform others. Therefore, mastery goals should be encouraged as they promote deeper learning and self-improvement.

Church, Elliot and Gable (2001) report that an engaging class environment is a strong positive predictor of mastery goals, which in turn are positively related to achievement. Therefore, a powerful learning environment, as provided by the inquiry learning approach, should encourage mastery goal-setting and its resultant positive impact on
achievement. Grant argues that guiding students in setting their own goals rather than imposing goals on them, is one of the most effective ways to increase students’ goal commitment (Grant, 2005, p. 23). She also relates that students who are committed to their goals engage in strategic planning by selecting learning strategies or methods designed to attain the goal.

In order to achieve the goal, goal monitoring occurs, which, as Brophy (1998) states, involves the continual observation of progress towards the goal, and adjusting actions to ensure it is reached. Goal monitoring entails evaluation by self or by others which may result in resetting goals or adjusting goals. Locke and Latham (2003) explain that the effectiveness of goals can be increased if the goals are specific, immediate, and challenging.

Grant (2005) carried out a study involving a group of Year three to Year six students regarding the usefulness of goal-setting as a tool for enhancing their learning. She concluded that goal-setting has a vital role to play in today’s classrooms as it has positive links to motivation and self-regulation, two key components of effective thinking and learning. Grant’s study demonstrates that goal-setting may need to be explicitly taught but can be successfully taught to primary age children. She presents a number of recommendations to consider if introducing a goal-setting into a school programme. These recommendations were included in the professional development sessions of teachers participating in this study.

**Exemplars**

Recently in New Zealand, the Ministry of Education has developed exemplars of students’ work in the essential learning areas, at each level of learning, in order to aid teachers in highlighting features that they need to watch for, collect information about, and act on to promote learning. The Ministry states exemplars help teachers to answer the question: “What is quality work?” The Ministry defines an exemplar as an authentic example of student work annotated to illustrate learning, achievement, and quality. An
exemplar illustrates key features of learning, achievement, and quality at a particular stage of student development, helps students, teachers, and parents to identify levels of achievement and next learning steps, and guides teachers in their interpretation of curriculum levels when making professional judgments about students’ work (MOE, 2005d).

The Ministry states that the following elements are crucial to the success of the use of exemplars in classrooms: a classroom environment that encourages students to reflect, and to assess their own and others' work; a clear understanding of the exemplars and how to use them; a method for analysing the exemplars and other work samples; and direct involvement of the students, so that they understand how to become more accomplished, independent learners. Professional development focused on exemplars and their use has been offered and undertaken by teachers throughout New Zealand.

Kamo Intermediate School in New Zealand (MOE, 2005d), undertook such professional development with the purpose of using the English exemplars for improving student self- and peer-assessment practices in their school. Students were introduced to the exemplars, and discussed the terminology and analysed the exemplars by asking key questions about the particular piece of work (a poetic writing exemplar). They listed the skills required and matched them with progress indicators (or success criteria). The students carried out the same analysis on their own work, identified the descriptors, and made an overall judgment of the level of their work. The students remarked at the end of the study that they felt their work was valued and taken more seriously. They believed that without the exemplars teachers could ‘tell’ them some features, but with the exemplars, they could identify certain things they already do and areas for improvement (MOE, 2005d).

By using exemplars in the self-regulated learning performance phase, students have the opportunity to appraise their work and monitor their progress against specific features and requirements of the task. Using exemplars may also motivate students to attain a higher standard and provide expert scaffolding if a student is in need of help. Exemplars may help students to reflect on the following questions:
What should I be learning?
What will it look like when I show that I have learned it?
What does progress look like?
How am I doing?
How good is good enough?

Exemplars were an important self-regulating strategy used in this study.

Performance/sharing time
The final strategy included in this group is sharing progress during performance/sharing time. As mentioned in Section Two, Chapter One, while teaching using the Multiple Intelligence approach, I discovered that as students were working on a number of different activities at the same time, they were keen to share their work as they developed it rather than waiting until the end of the learning unit. This resulted in a particular part of the learning session being allocated for sharing their work; this would often include items from all the intelligences thereby resulting in performances around the same large concept (dance, music, drama, visual art). This appeared to prove beneficial for learners who needed a lot of repetition before a concept was understood. Students were also encouraged to give each other positive feedback about their work, related to the learning intentions. That allowed the learner to self-evaluate what they knew and could do, as they continually compared their work with others. Also, students enjoyed sharing their work with a real audience. If students are given the opportunity to share their learning, no matter what stage it is at, within a nurturing classroom environment, it will motivate and empower them to continue the process of learning. It could be an important element in the learning cycle, as it offers students the chance to make links and scaffold their learning and also critique their own work on an informal basis.

2.11.3: Reflecting Strategies:
- Self-assessing, peer-assessing, developing next learning steps, learning log reflective statements.
The literature on self-regulated learning and feedback suggests that learning improves when feedback reminds students of the need to monitor their learning and guides them in how to achieve learning objectives (Bangert-Drowns et al. 1991; Butler and Winne, 1995). Sharing the learning intentions and developing the success criteria with students ensures they are aware of what they are required to do and how to go about the required task(s). Paris and Paris (2001) reinforce this idea when they note that learning depends on assessment of both product and process, to know what is known, what requires additional effort, and what skills are effective. Paris and Paris (2001) state self-assessment includes all three domains of self-regulated learning: cognitive, motivational, and affective, and as students learn to monitor and interpret their actions, they become more accurate about their progress. Importantly, Zimmerman (2000) notes when students are able to interpret their own accomplishments with pride, their perceptions of ability and efficacy increase.

Black and Wiliam (1998) state that many successful innovations have developed self-and peer-assessment by pupils as ways of enhancing formative assessment, and such work has achieved some success with pupils from age 5 upward. They believe when self-evaluation is linked with the learning intentions of a task, children’s progress, persistence, and self-esteem improve. They conclude that pupils should be trained in self-assessment so that they can understand the main purposes of their learning and, thereby, grasp what they need to do to achieve. That conclusion is shared with, and embedded within, this study.

More recently, Black, Harrison, Lee, Marshall and Wiliam (2004), have concluded that self-assessment is essential to learning. Self-assessment assists students to think of their work in terms of a set of goals which they can manage for themselves, that is, they develop the capacity to work at a metacognitive level.

The Assessment Reform Group’s publication *Assessment for Learning: Beyond the Black Box* (1999), outlines the key issues in the following statement:

> Current thinking about learning acknowledges that learners must ultimately be responsible for their learning since no-one else can do it for them. Thus
assessment for learning must involve pupils, so as to provide them with information about how well they are doing and guide their subsequent efforts. Much of this information will come as feedback from the teacher, but some will be through their direct involvement in assessing their own work. The awareness of learning and ability of learners to direct it for themselves is of increasing importance in the context of encouraging lifelong learning. (Assessment Reform Group, 1999, p. 7)

As Black et al. (2004) note, peer-assessment is viewed as complimentary to self-assessment. They believe it is uniquely valuable because students may accept criticisms of their work from one another that they would not take seriously if the remarks were offered by a teacher. Peer-assessment is valuable as a formative assessment tool, as to be able to assess a classmate’s work, the student needs to be able to understand the learning intentions, its criteria for success, and the level required. In the process of peer-assessing the student has an opportunity to again reflect on their own work and their progress towards their goals. During shared performance/sharing times, as mentioned above, the students are the audience for each item presented and have the chance to positively critique, or offer advice, about a student’s work by referring to the specific learning intentions associated with that task. This ensures the peer-assessment given is of value to the other student(s) and is not just an inane comment.

Black et al. (2004) make a valid point when they comment that self-assessment will happen only if teachers help their students, particularly the low achievers, to develop the skill, which can take time and practice. I have experienced this while teaching a Year five and six class. I encouraged the students to self-assess their work against the task success criteria, and then provide an overall assessment of their developing self-regulating learning skills. At first, the students spent very little time making judgments about their work and wrote very short comments about their progress, as they still relied heavily on the teacher’s evaluation of their work. However, over time, they realized that they had the capacity to assess their own work, could make valid judgments against the success criteria and, more importantly, were able to set their next learning goals and steps. I
found as the teacher, that when I came to assess their work, they knew themselves as learners, what was expected, and what they had achieved, and I invariably agreed with their stated next learning steps.

McTighe and O’Connor (2006) note that teachers should model self-assessment and expect students to apply this habit regularly. Black et al. (2004) agree, stating that students should be encouraged to keep in mind the aims of their work and to assess their own progress towards meeting these aims as they proceed. This enables them to guide their own work and become independent learners. Independent learners have the ability to seek out and gain new skills, new knowledge, and new understandings. They are able to engage in self-reflection and to identify the next steps in learning. Teachers should equip learners with the desire and the capacity to take charge of their learning through developing the skills of self-assessment (Assessment Reform Group, 1999).

Learning logs are an excellent tool that help students develop the skill of reflecting on their learning. I first used learning logs as a goal-setting and monitoring tool when teaching Year five to eight students technology. The students were involved in a process of identifying a technological need, designing and making a suitable product to fulfill that need, and evaluating its impact on society and the environment. The students used the learning log daily to set goals, develop plans, review their progress and monitor their goals. They reflected more globally every few days, using sentence starters such as:

- Today I was successful/unsuccesful because…
- I need help with…
- I used my time well today because…
- I need to do a better job…because…
- I am puzzled about…

I read their entries and responded, offering ideas, encouragement and next learning steps. Over time, the students began to view the learning log as showing a progression of their learning, and their entries were more explicit and detailed. Within this study learning logs were used by some teachers for goal-setting and monitoring, devising plans of action, and
reflecting on the learning intentions. The teachers offered formative feedback on their entries to encourage and guide the students. The logs were designed to help students to organise their learning, identify what they had learned and accomplished, and the areas in which they needed to improve. In my experience developing the skill of reflection takes time and practice but helps students become more active, and aware learners.

Friesner and Hart (2005) view learning logs as a vehicle that is used to assess learning from experience. They believe learning logs are ideal for encouraging learners to reflect on learning and provide the teacher and learner with formative assessment data over time. Cottrell (2003) defines reflection as a type of thinking associated with deep thought, and aimed at better understanding The teachers participating in the this study used the learning logs to help students reflect on their learning and thereby gain a better understanding of themselves as a learner, what they were learning about, and the methods they were employing to achieve the set learning intentions.

Zimmerman (1998) points out that reflecting on one’s learning should not be an afterthought for students. His Self-Regulated Learning Cycle views reflection as a self-fulfilling phase of the cyclical process preceded by systematic forethought and performance or volitional control. He notes that self-reflection is seldom taught in most schools yet can be learned through a core set of instructional and personal practice experiences by diverse students, ranging in age from elementary school to college, and differing widely in ability. This study introduced the skill of self-reflection at the primary school level (five to 12-year-old students) in the hope that even naïve attempts to reflect would empower the learner to self-regulate and achieve.

Zimmerman sums up the intention of the reflection strategies included in this study:

*Ideally, self-reflective practice allows students to assess their learning progress and the effectiveness of strategies, alter their approach as needed, and make adjustments to environmental and social factors to establish a setting highly conducive to learning.* (Zimmerman, 1998, p. 230)
The On Task tools in the next section are designed to help students make adjustments to environmental factors while learning.

2.11.4: On Task Tools

- On task/off task checklists, use of a carrel, use of the timeout capsule, use of personal CD player, use of STARS.

I have used the on task tools throughout my teaching career as aids intended to help students learn. The tools have the primary purpose of helping students stay on task when faced with distractions and challenging situations. The on task/off task check sheet is designed for student use, although initiated by the teacher. It is a simple tally sheet whereby on a designated cue the student can monitor their on task/off task behaviour. See Table 3.

<table>
<thead>
<tr>
<th>Self-Regulating Checks</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Task Check</td>
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</table>

Table 3: Self-Regulating Check Sheet

The check sheet relies on student self-honesty; however, in my experience, as students realize that the check sheet is for their interest only, they begin to value its use. Over a period of a few days, the check sheet can be a valuable tool for the learner as they can monitor their on task time, gaining a picture of when and why they tend to be distracted or off task. They can then make adjustments about their behaviour and challenge themselves to stay on task for longer periods or during distractions.

I first thought of using carrels in the classroom when returning to work at the University of Otago. Most universities have individual areas in the library for students to work in. Carrels can be individual work stations, three-sided, designed to limit distractions by offering the learner a semi-enclosed area to work. It affords the student a private
individual workspace. According to Young (2003), carrels were the furniture of choice for the monks in medieval monasteries and were only recently rediscovered in the 1960s as demand for self-spaced, multi-media instruction became popular in education. For example, in 1969, Oklahoma Christian College built 1016 carrels, one for each student, to enhance their media-intensive instruction. These carrels were designed to keep audio noise in, as well as noise and distraction out.

This study used carrels in the classroom for similar reasons: to keep noise and distractions to a minimum so that the learner can concentrate on the task in hand (Young, 2003, p. 3). An inquiry learning environment is full of active learning and students learning in multiple modes which can create distractions for the learner. By providing carrels for students, the individual workspace will not only give them a sense of privacy but, more importantly, relate a message to other students: “do not disturb, I am working”.

A timeout capsule has a similar intention. It is a larger, three-sided, work area where the student can sit at a desk inside a space. It is a completely bland working area containing a desk, a chair, headphones (to block out noise), and blank walls. This is a student initiated strategy whereby a student, after self-monitoring against their set goals, removes themselves to this area in order to redirect their learning. They then have the opportunity to reset their goals, review their learning strategies, and complete a task without distractions. This strategy sends the same powerful message to other learners: “do not disturb, I am working”.

Personal CD players with baroque music are intended for students to use in order to enhance their learning. I was introduced to this idea while reading The Learning Revolution (1993) by Gordon Dryden and Dr Jeannette Vos. Dryden and Vos present a synthesis of learning strategies focused on accelerated learning. They state that music plays a three-part role in learning: it helps a person relax, it activates the right-brain to receive new information, and it helps move the information into long-term memory storage. The pace of many baroque compositions is similar to the ‘wavelength’ found in the brain when it is in the state of ‘relaxed alertness’. They assert that if information is
read to the learner in time to baroque music, it floats into the subconscious and a person can learn much faster (Dryden and Vos, 1993, p. 131).

Daley and Ward continue this theme when they write:

Research into brain function has provided some answers as to how music expands our abilities. When we relax and listen to one-beat-per-second music, our brains go into a type of resonance and emit a greater proportion of alpha and theta brainwaves. In this state we become amazingly receptive and learning can occur rapidly... It has been shown, in a wide range of situations, that string music from the baroque period is good for enhancing learning. (Daley and Ward, 1993, p.27)

The final strategy under this heading is a personal invention called STARS, which stands for ‘sayings that allow regulated study’. While considering strategies to help students stay on task, I read a paper by Lyn Corno (1992). This paper discusses how elementary school teachers might encourage students to take responsibility for their own learning and performance. Corno reviewed the research on self-regulated learning and noted that initial awareness of ways to regulate one’s learning environment, and deliberate practice in doing so, eventually results in automaticity of these actions when they are called on. For most students, the ‘dynamic moment of volition’ becomes apparent with the realization that “here is a task I have to work on now; there are several things I would rather do and other things I would rather pay attention to; therefore, a certain amount of effort is required for me to do this; and, if I try, I can probably get it done”, that is, ‘buckle down’ (Corno, 1992, p. 74). Whether the student does ‘buckle down’ or not, may depend on whether the student has any available mechanisms for ‘buckling down’.

This statement led to a discussion about ‘buckling down’ strategies with a group of Year five and six students I was teaching at Macandrew Bay School. They discussed strategies they used to ‘buckle down’ such as removing themselves from any distractions and trying to use self-control. Many were aware that they did not use any strategies, and, consequently were easily distracted, off task, and not achieving their set goals. Together
we designed the STARS tool to be used in the classroom for two reasons: 1. To self-verbalise a positive statement in order to remind themselves they needed to ‘buckle down’; and, 2. To let other students know they were ‘buckling down’ to work and didn’t want to be distracted. The sayings they created were:

- Please come back later as I am busy working!
- I need to get this done now!
- Please keep the noise down as I am trying to concentrate!
- Come on, buckle down, you can do it!

The sayings were laminated and placed on desks or tables when needed.

All of the above tools are aimed at helping students control the learning environment to stay on task, concentrate, and achieve set learning goals. In effect, the self-regulated strategies and tools developed from my own professional journey are contextualised within my own professional journey (refer Introduction to the Folio). They represent one particular approach to developing self-regulated learners, and while some strategies correlate with other research studies, the combination of strategies and tools in this study are unique.

2.12: Self-Regulated Learning and Research on Teaching

As I reviewed the self-regulated learning literature, two important aspects became apparent. Firstly, many explicit statements about, and examples of appropriate self-regulated learning teaching methods tend to be very structured, teacher directed, and focused on the development of domain-specific and situation-specific, self-regulated learning skills. There appears to be little research focused on the impact of the learning environment on developing self-regulated learning skills. Martin (2004), while discussing classroom implications and self-regulated learning, describes the contrasting research approaches. One approach is focused on helping learners develop self-regulated learning skills within a conducive learning environment, that is, in context, and empowering the learners to take charge of their own learning. The other is a direct
instructional approach focused purely on the acquisition of skills and strategies out of context. Martin highlights the contrast by saying:

... a classroom focused on encouraging students to examine their own self-regulatory activities as embedded and entwined with their ongoing, active engagement in curricular tasks, materials, and discussions stands in obvious contrast to the more pedantic forms of direct instruction in cognitive-behavioural skills and strategies favoured in some, more conventional social cognitive approaches to the promotion of agentic self-regulation in classrooms. (Martin, 2004, p. 143)

Boekaerts reiterates this line of thinking when she purports that “many researchers and educators do not realize there is a bidirectional relationship between learning environments and self-regulated learning” (Boekaerts, 1999, p. 453). She states it is generally acknowledged that powerful learning environments are facilitators for the acquisition of new self-regulatory skills and that there is abundant evidence that powerful learning environments do indeed promote the use of self-regulatory skills. More recently, Boekaerts and Corno (2005) stated that researchers have come to realize that the ultimate goal of comprehensive, insightful models of self-regulated learning depends upon study of self-regulation while it is being generated, as presented in this study.

Secondly, as Perry, Phillips, and Dowler (2004) relate, academic self-regulation studies have mostly involved students in the upper-elementary grades through to college. Perry et al. (2004) point out that some research has documented young children’s use of strategies to complete simple tasks. However, much of the research has suggested that children younger than age 10 years have difficulty co-ordinating the cognitive and metacognitive processes required to complete, complex, multifaceted tasks. Research also suggests that “young children are protected from defensive motivational patterns that undermine self-regulated learning because they tend to view ability as incremental, rate their ability highly, and expect to do well so long as they exert effort” (Perry, Phillips, and Dowler, 2004, p. 1855).
However, as Perry and VandeKamp (2000) state, research has provided evidence of young children regulating their behaviour during complex, multi-faceted tasks. The authors also documented negative effect and non-persistence in the face of failure, attributions linking outcomes to ability rather than effort, and low expectations for future success in children ages four to nine years. These findings reinforce the need to investigate ways of developing self-regulated learning skills in young children rather than waiting until students’ work habits and strategy use are entrenched.

2.13: Conclusion

In this chapter, I have considered some of the relevant research and attempted to construct a picture of the complexity of the field of self-regulated learning. In order to gain an insight into how the theory emerged, it was necessary to offer a historical perspective of learning theories, including self-regulated learning, as well as a comparison of the more current models of self-regulated learning.

Through my study, I have attempted to provide further insight into this field and believe the perspective I have chosen to situate this study, the social cognitive perspective, is best suited to the aims of this study. As mentioned earlier, the social cognitive models of self-regulated learning build on, or intersect with, social constructivist approaches to teaching and learning. Perry (1998) writes that teachers’ use of particular educational innovations does not guarantee a high self-regulated learning environment but highlights the value of characterizing learning contexts before characterising students’ engagements in them.

I have explored a relatively untapped perspective by investigating the topic within a classroom setting, an ‘authentic’ context, and focusing on younger students than the age group often found in the literature. Montalvo and Torres (2004) argue that intervention should be focused in ‘natural environments’, for example, classrooms rather than laboratories, using genuine, contextualised tasks, linked to the interests and needs of the students, since this will allow them to generalize what they have learned to situations from their personal, academic and social life.
The aim of this study, through the use of Zimmerman’s Self-Regulated Learning Cycle (1998, 2002) and the integration of very specific strategies and tools at each phase of learning, was to offer a fresh perspective on how to develop self-regulated learning skills in young students. Ultimately, the goal was to provide practical information for teachers on how to integrate the Key Competency Group, Managing Self, which includes many aspects of self-regulated learning, into their classroom programmes. The next chapter explains how I intended to carry this out.
CHAPTER 3: Research Methodology, Design and Ethical Considerations

3.1: Introduction

All qualitative researchers are philosophers in that universal sense in which all human beings ... are guided by highly abstract principles. (Denzin and Lincoln, 2000, p. 320)

As a novice researcher, articulating theory in my research appeared daunting at first. However, after referring to a number of texts (Handbook of Qualitative Research, Denzin and Lincoln, 2000; Qualitative Research and Evaluation Methods, Patton, 2002; and, The Landscape of Qualitative Research, Denzin and Lincoln, 1998), I became aware that I needed to articulate my own beliefs in order to establish a framework upon which my research could be situated and understood by the reader. This has encouraged me to reflect on my practice, my beliefs about the world, and how I see myself within it in order to situate my beliefs within a theoretical research framework. This process has enabled me to gain an understanding of the methodological discourse and, thereby, provided me with the language to situate my research.

3.2: Quantitative and Qualitative Paradigms

It is necessary to understand the assumptions of the quantitative and qualitative paradigms, and identify the characteristics attributed to them, in order to demonstrate why this study proposes to use a qualitative methodology. Creswell (1994) describes the two paradigms as follows:

The quantitative is termed the traditional, the positivist, the experimental, or the empiricist paradigm. The qualitative paradigm is termed the constructivist approach or naturalistic, the interpretative approach, or the postpositivist or postmodern perspective. (Creswell, 1994, p. 4)
Firestone (1987) states that the differences between the two dominant research paradigms have been treated extensively with considerable agreement on what they are. In general a positivist researcher assumes that there is a common reality across individuals, while the interpretive researcher assumes multiple realities and that reality is socially constructed. The positivist researcher aims to test a theory or hypothesis, while the interpretive researcher aims to develop a theory based on what is observed. Firestone notes, that the quantitative researcher’s role is viewed as detached to avoid bias, whereas the qualitative researcher’s role becomes immersed in the phenomenon of interest. McKereghan (1998) claims quantitative research is viewed as objective; qualitative research as subjective.

Patton (2002) describes qualitative methods as open-ended questions of people and observation of matters of interest in real-world settings in order to solve problems, improve programmes, or develop policies. He states the methods of qualitative inquiry now stand on their own as reasonable ways to find out what is happening in programmes in human settings. On the basis of these arguments, this study was located in the qualitative paradigm, that is, I involved real people in a real situation (teachers in a school setting); it was located in the particular, that is, within classrooms; it produced rich insight to inform theory building about self-regulated learning; it provided insights into teacher practice associated with the integration of self-regulated learning strategies and tools into classroom programmes; it captured a multiplicity of meanings through the reporting of multiple voices and multiple perspectives; and through employing the above descriptors, this study captured the contingent nature of reality. This is reassuring from the perspective of a principal who is aiming to contribute practical knowledge and pragmatic understandings.

This study employed action research methodology in order to, broadly speaking, initiate self-reflective responses from a group of teachers about their practice within their own particular classroom environments. The location of this study was in the ‘social situation’ of the classroom. Teachers were required to reflect on their practices while introducing specific self-regulated learning strategies and tools, at particular times in the learning
cycle, in their classroom programmes. The aim was to improve the ‘rationality and justice of their own practices’: that is, to involve teachers in explaining and reasoning their actions in the classroom in order to help them to critically reflect and bring change to their practice.

3.3: Situating Action Research in a Qualitative Paradigm

In order to understand why action research was an appropriate research methodology for this study, it is necessary to examine what action research is and its characteristics. Dick (2000) summarises the features of action research as: cyclical, that is, similar steps tend to recur in a similar sequence; participative, that is, the clients and informants are involved as partners, or at least active participants in the research process; reflective, involving critical reflection upon the process and outcomes throughout the research cycle; responsive, to the emerging needs of the research situation; flexible, where other methods are not; emergent, whereby its cyclical nature allows interpretations to develop early in the research cycle and to be tested, challenged, and refined. Carr and Kemmis (1986) describe each action research cycle as comprising planning, action, observation, and reflection.

Because of these features, action research as a methodology ensures its compatibility within the social cognitive perspective used for this study. The teacher participants actively engaged in the research process by developing individual and shared meanings and interpretations. They reflected at multiple opportunities, and responded to challenges, demonstrating the ability to refine their practice. The flexible nature of the action research cycle gave the teachers the power to interpret and integrate the self-regulated learning strategies and tools in their own individual way. The data from the initial and final questionnaires demonstrate that emergent interpretations were developed early in the research cycle and were tested, challenged, and refined by the end of the study. The next section examines the features of action research in more detail.
3.4: The Development of Action Research

Masters (1995) defines five movements that have had historical and philosophical influences on action research: the Science in Education Movement of the nineteenth and early twentieth century; the Experimentalist and Progressive educational work, especially the work of John Dewey; the Group Dynamics Movement in social psychology and human relations training; the Post-war Reconstructivist Curriculum Development Activity; and the teacher researcher movement.

Masters (1995) notes, many action research authors state that action research originated with the social psychology works of Kurt Lewin in the late 1940s, while others believe it originated in the early works of John Dewey. Johnson (1993) writes that Stephen Corey and others at Teachers College of Columbia University introduced the term ‘action research’ to the educational community in 1949. Corey defined action research as the process through which practitioners study their own practice to solve their personal practical problems. In an unscientific manner, this definition very suitably fits my own personal journey as recounted in Chapter One.

A number of philosophical orientations developed leading to a variety of foci with differing stances. I will refer to Carr and Kemmis’ (1986) distinction between three types of action research: technical, practical, and emancipatory action research. In technical action research the participants are co-opted and rely on the outside ‘expert’. Effectiveness and efficiency of performance are main aims. Practical action research shares the same aims but also seeks a change in the participants’ understanding or a transformation of their consciousness. The facilitator-type researcher seeks the participants’ co-operation, active participation, and self-reflection. Zuber-Skenitt (1993) claims that in emancipatory action research the aims remain the same as well as seeking the participants’ emancipation from the dictates of tradition, self-deception, and coercion. The facilitator researcher is a process moderator, collaborating and sharing equal responsibilities with the participants.
Bruce-Ferguson (1999) states that teachers follow the cyclical process of action research (plan, act, observe, and reflect) largely intuitively. By employing the *technical* action research approach, the teacher participants were able to actualise this intuitive knowledge and naturally progress on towards employing the *emancipatory* approach in the future.

Holter and Schwartz-Barcott (1993) believe four characteristics remain central to all forms of action research: collaboration between researcher and practitioner, solution of practical problems, change in practice, and development of theory. By adopting action research methodology, all four characteristics feature in this study, although using the *technical* action research approach defined the extent of each feature. I imposed a particular theoretical perspective of self-regulated learning on eight teacher participants and asked them to study a particular self-regulated learning intervention. They were asked to integrate specific self-regulated learning strategies and tools into their classroom programme. They were asked to reflect periodically on their practice, and to review and refine their practice in order to gain new understandings concerning developing self-regulated learning skills in young students. In the next section, I examine and define the action research methodology features in order to ascertain the degree to which each was rendered.

### 3.5: Action Research in Practice

As outlined in Chapter One, questioning my own teaching practice and beliefs led me to develop ‘early wonderings’ and a need to test my ideas regarding young students developing self-regulated learning skills. This interest and passion has resulted in a sound teacher knowledge of, and innovative practice concerning self-regulated learning. I have shared this knowledge with many teachers and principals over the past five years speaking at conferences, writing articles, and presenting and facilitating workshops. This study offered me an opportunity to trial a self-regulated learning classroom intervention and provide teachers with valuable insight into this area.
As stated earlier, the action research approach most suited to my intention was the *technical* approach. This approach is clearly described as occurring:

> *... when facilitators persuade practitioners to test the findings of external research in their own practices, but where the outcome of these tests is to feed new findings into external research literatures. In such situations, the primary interest is in the development and extension of research literatures rather than the development of practitioners’ own practices on the basis of their own collaborative and self-reflective control.* (Carr and Kemmis, 1986, p. 202)

Holter and Schwartz-Barcott (1993) suggest this approach is viewed as less collaborative than the other approaches because the intervention and theoretical framework to be trialed are imposed on the participants. The participants have little say in the initial shaping of the intervention or the action plan for its implementation. Potter (2001) states the facilitator in technical action research is often a university academic; however, in this study, the researcher was a practitioner – I was principal of a primary school. My knowledge and passion for self-regulated learning was well known throughout the area where I carried out the study, and all teacher participants had attended a professional development session facilitated by me, before offering to take part in the study. For this reason, I felt the intervention was less of an imposition as all the teacher participants were already using some of the strategies and tools in their classrooms, although in piecemeal and moderate ways. The teachers had already formed initial understandings about self-regulated learning and were keen to further their own knowledge and skills. They were offered an opportunity to undertake a collaborative partnership for professional development.

As stated above, when I undertook this study, I believed the *technical* approach best suited my situation. However, in hindsight, the study emerged as *participatory practical* action research. Participatory action research (PAR) can be defined as collective, self-reflective inquiry undertaken by participants in social situations in order improve the rationality and justice of their own social ... practices (Kemmis and McTaggart 1988, p.
5). Research using PAR as its method utilises reflection, planning, action and observation, which operate interdependently and follow each other in a spiral or cycle. Action happens when the plan is put into place and the hoped for improvement to the social situation occurs. Within this study, the action was deliberate and strategic, happening in reality not as an experiment ‘just to see if it works’. As the study emerged, it became evident that the principles of PAR, participation and collaboration, empowerment, knowledge and social change, were being embraced. Other modes of AR, such as the technical mode, do not embrace all of these principles.

Potter (2001) notes that collaboration is a process that demands a sense of shared endeavour and purpose and an equal sharing of power, leadership, ownership, and responsibility. I did not afford the teacher participants this true sense of collaboration at the outset of the study, but as the study emerged, a truer sense of collaboration developed. The teachers were able to take full control of how they integrated the strategies and tools, having no set regulations or guidelines to follow. They were made responsible for trialing the strategies and tools in their own individual ways.

Most data gathering activities were semi-structured and open-ended, and, in the case of the video-stimulated recall sessions, the teachers had full control of the remote. My leadership role was purely as a facilitator ensuring the timeline and data gathering activities were adhered to. The teachers were aware from the outset that a main aim of the study was to offer, through their voices, other teachers insight and ideas about the integration of self-regulated learning strategies and tools into their classrooms. Therefore, there was the expectation from the outset that they would be contributing to their profession which enhanced feelings of ownership of the study.

Potter (2001) relates that genuine collaboration should reflect a shared interpretation of data, deeper understandings, and a new body of knowledge. I endeavoured to do this by using the mid-study focus group discussion to engage teachers in dialogue, trade ideas and refinements, and to clarify and co-construct new meanings. All teacher participants had the opportunity to edit their transcripts and to make comment on the draft report. Their additions/deletions were accommodated, and their comments on the draft report
considered and included. All participants revealed a deeper knowledge of self-regulated learning by the end of the study, and a new body of knowledge has been generated. This new body of knowledge will inform teachers about the integration of specific self-regulated learning strategies and tools.

The solution of practical problems leading to a change in practice and culminating in the development of theory can be viewed as parts of an action research continuum. The continuum can be seen as incorporating both macro and micro problems. The macro problem can be the research study focus, incorporating the research questions that the study set out to answer. The micro problems can be the challenges that faced the participants as they implemented the intervention. The action research cycle (plan, act, observe, reflect) offered the teacher participants the opportunity to continually solve practical problems and, in the process, continue to refine their practice. As the study developed, the data revealed many instances of teachers developing their own theories about self-regulated learning and their students. They observed their own students engaging in the use of the strategies and tools, and theorized about aspects such as goal-setting, gender, and strategy development, sharing the learning intentions and developing success criteria. From the macro level, as the researcher, I analysed the data which informed my original theories and led me to develop new theories.

I chose action research as a methodology because through this, the teacher participants would have the opportunity to be actively involved in developing new strategies, and by doing so would also develop new, deeper understandings. Action research is a way for educators to attempt to improve teaching and learning and, as they do so, to conduct research into those efforts. Action research can empower teachers through active participation and critical reflection.

3.6: Elements of Good Action Research

Key features of action research, flexibility and responsiveness, are further enhanced if multiple sources of evidence, that is, multiple methods to clarify meaning, are employed. This study employed multiple sources (questionnaire, focus group discussion and video stimulated recall) throughout the cycle in order to gain a deeper and more accurate
understanding of self-regulated learning. Dick (2000) recommends using multiple data sources within multiple cycles in order to try to disprove the interpretations arising from earlier cycles. Dick also emphasizes the importance of ongoing critical reflection in order to critique what we do and how we do it, and allowing the right amount of flexibility in order to achieve rigor. This study employed questionnaire, focus group discussion and video stimulated recall in order to gather rich data, throughout the study, from within the multiple cycles of planning, taking action, observing and reflecting.

Meyer (2000, p. 3) states that it is important, when reporting action research, to describe the work in its rich contextual detail. The researcher should include the participants' perspective on the data by feeding back findings to participants and incorporating their responses as new data in the final report. All data gathered for this study was transcribed and returned to each teacher participant for editing and the draft final report was presented to them for approval and comment. Meyer also suggests the researcher should keep self-reflective field notes during the research in order to make his or her own values and beliefs explicit in the account of the research. This was carried out to a limited degree, and these reflections have been included within the data analysis section.

By employing action research methodology, this study presents the findings of eight teachers as they integrated self-regulated learning strategies within their classrooms. The processes and insights gained through this study have potential to inform not only the curriculum reform now underway in New Zealand but other sectors of education where there is renewed interest in developing self-managing learners.

As Meyer (2000) points out, the strength of action research is its ability to influence practice positively while simultaneously gathering data to share with a wider audience. However, she pertinently states that change is problematic, and although action research lends itself well to the discovery of solutions, its success should not be judged solely in terms of the size of change achieved or the immediate implementation of solutions. Instead, success can often be viewed in relation to what has been learnt from the experience of undertaking the work.
Employing action research provided the participant teachers with the opportunity to make their own meaning about their professional practices as they integrated self-regulated learning strategies into their classrooms. Throughout the action research cycle, they were able to develop their own capacities to solve problems, trial new ideas, and meet the needs of their students. The action research, in effect, arose from these teachers’ own experiences as teachers and as learners. This had the capacity to empower them and to offer them a sense of control. As I collected the data throughout the action research cycle, I was able to draw on the teachers’ reflections and bring new meaning, questions and insights to the field of self-regulated learning. Through adopting a technical action research approach, two action research cycles were employed: a teacher participant cycle, and a researcher cycle. These will be elaborated on in a following section.

3.7: Research Design

In qualitative inquiry, the problem of design poses a contradiction. Patton (2002) explains that while on the one hand the term design suggests a specific plan, design in the qualitative sense means planning for an open and flexible exploration. A qualitative design is viewed as emergent even after data collection begins. Janesick (2000) argues that good qualitative research design uses procedures that are both open-ended and rigorous and do justice to the complexity of the social setting under study. Action research is a more holistic approach to problem-solving, rather than a single method for collecting and analyzing data. Thus, it allows for several different research tools to be used as the study is conducted. Methods which are generally common to the qualitative research paradigm include: keeping a research journal, document collection and analysis, participant observation recordings, questionnaires, structured and unstructured interviews, and case studies (O’Brien, 1998; Kemmis and McTaggart, 1988). In this study, the following procedures were used: questionnaire, focus group discussion, and video stimulated recall, which is a form of participant observation recording where teachers reflect on their videoed classroom practices. The following section describes the simultaneous research cycles employed by the teacher participants and myself, the researcher.
3.8: The Simultaneous Action Research Cycles Employed

This study used the action research cycle, as developed by Kemmis and McTaggart (1988), which has the following cyclic steps: plan, act, observe, reflect, revise plan. As stated earlier in the chapter, the technical action research approach was employed in order to trial a classroom intervention to further teachers’ understanding and integration of self-regulated learning strategies in young students. There were in fact, two macro action research cycles operating within this study, one pertaining to the researcher and the other pertaining to the teacher participants.

3.8.1: The Teacher Participant Macro Action Research Cycle

**Plan** – The study was shared fully with the participating teachers who had the opportunity to review and refine it. This was carried out collectively so that a democratic orientation was ensured. The teacher participants had the opportunity to plan how they would integrate the self-regulated learning strategies and tools into their classrooms.

**Act** – All teachers were asked to respond to a questionnaire at the outset of the study asking them about their understandings of self-regulated learning and if/how they developed self-regulated learning skills in their students. Teachers then participated in a professional development day with four sessions in order to gain an understanding of and up skill in, the use of the self-regulated learning strategies and tools to be used in the study (please refer to Section Three, Part A, of the folio for an in-depth account of the teacher professional development). The teachers then began integrating the strategies and tools within their classroom programmes.

**Observe** – Each classroom was videoed two weeks after introducing the strategies and tools, and then again eight or nine weeks later, near the end of the data gathering time. After each video session, the teachers viewed the tape, having full control of the remote control, and offered reflective comments about self-regulated learning in their classroom.
Reflect - After five weeks of trialing the strategies and tools, the teachers took part in a focus group discussion to ascertain how the implementation of the self-regulated learning tools was progressing, and discuss any challenges or refinements they may have made or intended making. Finally, the teachers were asked to respond to an emailed questionnaire in order to compare their knowledge and understandings about self-regulated learning with their initial questionnaire comments, and to elaborate on other aspects of the study. All teachers had access to their own individual data throughout the study so that they could verify, alter, delete, or add items. This ensured the data consisted of accurate description and interpretation.

Revise Plan - The semi-final draft report was circulated to all participating teachers for their feedback and comments, with the aim of including their recommendations and insights.

On the macro level, the teacher participants made adaptations and refinements to the self-regulated learning strategies and tools and their integration, throughout the full action research cycle. There were also many micro cycles operating: teacher participants observed, acted, reflected, revised, and pursued new actions as they integrated the self-regulated learning strategies and tools into their classroom programmes.

3.8.2: The Researcher Macro Action Research Cycle

Plan – As outlined earlier, my own professional journey led to my ‘early wonderings’ and culminated in the research design, aims and specific research questions of this study. The planning evolved from the macro to the micro, requiring a full process of ethical procedures and considerations. The research cycle, as outlined below for the teacher participants, in effect, became my micro plan for carrying out the study.

Act – I employed multiple roles throughout the study: as a professional development facilitator, researcher, video camera operator and interviewer. This involved complex ethical considerations, as outlined later in the chapter, and was labour intensive.
**Observe** – I employed a participant observer role throughout this study, focusing on the collection of the data, and did not take part in the classroom interventions. I made brief notes on experiences with teacher participants, and any insights and challenges in order to help clarify my initial understandings.

**Reflect** – The process of reflection became a crucial component throughout the action research cycle enabling me to examine my own biases, theoretical predispositions, and preferences. Reflection during the data gathering process made me examine my initial beliefs and understandings about how young students develop self-regulated learning skills. As I listened to the teacher participants’ comments and reflections, I formulated new understandings and more lateral perspectives. When confronted with questions from the teacher participants regarding the implementation of the self-regulated learning strategies and tools, I offered open-ended responses in order to ensure that the teachers retained a sense of ownership and control, and were not coerced into following particular ideas. This was in line with a main aim of the research, which was to offer teachers multiple voices and perspectives on the integration of the strategies and tools. This would not have happened if I, as the researcher, had enforced my implementation ideas on the teachers.

**Revise plan** – On the micro level, changes to the research process were made collaboratively throughout the study, for example, changing the method of data collection from interview to questionnaire; videoing times; and purchasing resources such as the CD players. From the perspective of the researcher, I adapted the timeline and processes in line with what the teacher participants unanimously requested.

Table 4 below summarises the simultaneous action research cycles employed.

- **The Researcher Macro Action Research Cycle**
  - **Plan:**
    - My professional journey led me to formulate questions related to my practice culminating in the development of this research study.
  - **Act:**
    - I employed multiple roles

- **The Teacher Participant Macro Action Research Cycle**
  - **Plan:**
    - The study was shared fully with the participating teachers and they had the opportunity to plan how they would integrate the strategies and tools.
  - **Act:**
    - All teachers were asked to respond
throughout the study facilitating, observing, recording, interviewing, reflecting, problem-solving and actively listening.

- **Observe:**
  - As a participant observer I collected data through questionnaires, facilitated a mid-study discussion group, videoed two sessions in each classroom and employed video stimulated recall as a data gathering method.

- **Observe:**
  - Each classroom was videoed twice during the study. The teachers viewed the tape and commented on the use of the strategies and tools in their classroom.

- **Reflect:**
  - I examined my own biases, theoretical predispositions, and preferences. Reflection during the data gathering process made me examine my initial beliefs and understandings and as I listened to the teacher participants’ comments and reflections, I formulated new understandings and more lateral perspectives.

- **Revise Plan:**
  - Changes to the research process were made collaboratively throughout the study.

- **Revise Plan:**
  - Teachers offered recommendations and insights on the semi-draft report.

### Table 4: The Simultaneous Action Research Cycles Employed

#### 3.9: Data Collection

Janesick (2000) states that qualitative research depends on the presentation of solid descriptive data so that the researcher leads the reader to an understanding of the meaning of the experience under study. As noted above, the data collection for this study included an initial questionnaire, two video stimulated recall sessions, a mid-study focus group discussion, and a final questionnaire at the end of the study time. The study was carried out over a ten-week period.

Together, these three methods, questionnaire, focus group discussion, and video stimulated recall, afforded the study multiple methods to clarify meaning, verifying the repeatability of an observation or interpretation (Denzin and Lincoln, 2000). Patton
(2002) makes the important point that multiple methods are not designed to show that different data sources or inquiry approaches yield essentially the same result, rather, the point is to test for such consistency. Different kinds of data may yield different results because they are sensitive to different real-world nuances. Therefore, deeper insight was gained by understanding inconsistencies in the findings and bringing credibility to the study.

3.9.1: Phase One: Initial Questionnaire and Professional Development Sessions

Initially, I intended to interview the teachers individually. However, as we began to consider timelines and the distance between schools, it became apparent that this would cause difficulties. Therefore, in negotiation with the teachers, we decided that the interview questions could be addressed in written form (refer Appendix Four).

Specifically, two questions were asked. Question one was open-ended, and question two was a contingency question, that is, depending on the response given to the first part of the question, the respondent was then asked to offer an explanation. Each teacher participant was asked what they understood by the term self-regulated learning, if they were already developing self-regulated learning skills in their students, and, if so, how.

In keeping with Prensky’s (1997) suggestions, I kept the questions brief. Each question addressed a single issue, to ensure that all respondents were able to interpret it in the same way. I also sought to use questions that were appropriately and clearly worded. The initial questionnaire was administered as a group questionnaire. All teacher participants were asked to fill out the questionnaire at the same time and within an agreed time period. The teachers filled out the questionnaire at the beginning of the professional development day with no discussion taking place throughout the agreed timeframe.

After informal introductions, I described the separate sessions that would make up their professional development day. I then introduced the study, outlining the background, the purpose, and went through in detail each stage of the study.

The teachers asked questions in order to clarify points along the way such as:
- Where would the video camera be placed?
- Could they introduce the tools when they felt it was appropriate?
- Who would provide the resources, such as the individual CD players?

I explained that the whole process would be collaborative, and they would have opportunities to review and refine the process to meet their needs. We spent time discussing all the points raised to ensure all teachers were informed and expectations made explicit.

In the next session we looked at the research and theory connected to self-regulated learning and Zimmerman’s Self-Regulated Cycle of Learning (2002). After this theoretical session, we reflected on the information and the teachers noted down their initial ideas and thoughts. They shared their understandings, scaffolding and clarifying, in order to form a basic theoretical knowledge of self-regulated learning.

I then presented the strategies and tools to be introduced, why they were important, any links to research and possibilities for the teachers to integrate these into their class programmes. Following this, we reviewed both the inquiry learning approach and the Multiple Intelligence approach focusing on their positive learning attributes making links to self-regulated learning development. Importantly, the teachers developed knowledge about how to scaffold their students into becoming self-managing learners.

In the final session, we discussed in detail how the videoing sessions would be structured. Two teachers shared their apprehension at being videoed. I explained that I would be stationed unobtrusively in their classroom and would not interact with them or their students. I reminded them that the video would only be viewed by them, which eased their apprehension. As the discussion around the videoing progressed, the teachers remarked how they were looking forward to viewing their students as they worked in their classrooms. It later became obvious that the idea of the VSR sessions produced two common reactions from the teachers: one of apprehension at watching themselves teach,
and one of fascination as they observed their students interacting with the learning environment. Please note, I elaborate on the use of VSR later in the chapter.

In the informal discussion time at the end of the day, the teachers began relating the self-regulated learning tools to the year group that they taught, voicing ‘early wonderings’ about refining the tools to suit the needs of their students. The teachers formed groups, depending on the age group they taught, shared ideas and began to put their ideas down on paper. I was humbled and amazed that they had, in a very short time, generated an excitement and enthusiasm for the study. They focused on what resources they needed and I noted down what needed to be bought, acquired, or made (CD players, timeout boxes, carrels, STARS). The teachers began to develop models for goal-setting and learning logs, and chose suitable reflection formats.

At the end of the professional development sessions, we noted email addresses, set dates for the videoing sessions in week two and weeks eight/nine and dates for the familiarisation visits to classrooms. I agreed to be available for all teachers as a sounding board or to clarify any points/issues as they arose. The teachers arranged to work together, within their respective schools, to make and develop resources and to discuss any issues. Later that day, I emailed the resources they had requested, such as the STAR template and goal-setting ideas.

**3.9.2: Phase Two: Video Stimulated Recall Sessions**

I visited all classrooms prior to videoing, and in the Year five to eight classes (the senior age students) the teachers asked me to talk to the children about the study, its purpose, their involvement, and how they could use the tools. I also spoke to one junior room (Years one/two) finding it challenging to explain the study at their level of understanding. The other junior teachers (Years two/three and Year four) chose to explain the study themselves, and used a simple chart I had prepared which outlined the strategies and tools, and how they could be useful to them, in ‘kids speak’. An extended outline of the professional development day is provided in Section Three, Part A, of the folio.

Before the videoing sessions took place the following issues became apparent:
- That if we were to use one camera, I would need to pan the classroom in a very structured manner as we could not capture the full classroom at one time.
- This would mean only part of the activities would be captured at one time and we may miss capturing self-regulated learning behaviours.
- It took time to decide where in the classroom would be the most appropriate position. The teachers decided the position in relation to their lesson content.
- I needed to make sure that I followed the panning pattern and would not be sidetracked by what I might think was a significant self-regulated learning behaviour.

We agreed that all classes would be videoed during week two, at a negotiated time, so that teachers could introduce some strategies and tools during week one. The lessons were focused on the immersion stage of inquiry where the students were carrying out focused activities in order to clarify the knowledge they had about the topic and to generate higher-order questions for investigation. As I entered the classrooms, students often spoke, greeting me, and showing interest in the camera. During the videoing I did not initiate contact with the students or teacher; however, occasionally a teacher made a comment to which I responded briefly.

Lyle (2003) suggests VSR has considerable potential for studies into cognitive strategies and other learning processes, and also for teacher/educator behaviour which means that it was an appropriate data collection method for this study. However, there are a number of theoretical and practical shortcomings of VSR, including a general concern about supplementing incomplete memories and the possibility that the subject is reacting to what is viewed on the video, rather than recalling the taped episode. Also, VSR may not provide the immediate retrospective probing necessary to access short-term memory or episodic long-term memory traces, which store the real-life experience. Since this was not why I chose VSR as one of my data collection methods, the above concerns were not relevant.
Lyle (2003) suggests there is evidence of increasing recall decay with consecutive, delayed and non-recent protocols. In order to combat this stated limitation within this study, all interview data and stimulated recall data was transcribed soon after the activity. The participants had the opportunity to review, alter, delete, and rewrite items from the transcript within the following week. Again, the above limitations were made explicit to the participants.

For this study, I drew on Grainger (2004), who states that VSR allows a teaching event to be captured as completely as possible, and arguably more completely than any other method. For this reason, observation would not have been sufficient as a method. The use of VSR meant the participants were confronted with a representation of their practice which was situated in context and as accurate as possible. This enabled the teachers to view their students’ behaviours in context rather than as remembered actions only.

Marland (1984) describes a rationale for ‘retrospective self-reporting techniques’ whereby the teacher can be the one who is in control of stopping the tape, depending on the focus of the research. This technique was used in this study. In order to facilitate a dynamic and equitable interaction between the teacher and myself, the teacher had the control of the remote, and was able to stop the tape recording. This empowered the teacher participants and gave them control of the remote device which empowered them and gave them greater control over the stimulated recall process. Edwards-Leis (2006) notes that allowing the teacher to initiate the pauses can maximize the validity and reliability of responses. In this study, teacher participant pauses uncovered unanticipated yet enlightening data that may otherwise have been missed if the participants were not given the opportunity to initiate them.

Importantly Alro and Skovsmose (2004) add to this dimension of control by reminding us that in dialogue there should be no use of force, no persuasion of the other and no winning: productive dialogue develops as a dynamic process between equal communicating partners. In order to employ VSR using the ‘best practice’ interviewer
techniques, as identified by Williams (2004), I strove to establish the ‘equality of interaction’, to elicit reconstructing not more constructing, to encourage elaboration of ideas, to identify intended meaning of terms used, and to confirm the usefulness of the interaction.

I also took note of the recommendations of Lyle (2003). I reduced anxiety as much as possible by assuring the teacher participants that I was not looking for ‘best practice’ but for their reflections on what they were aiming to do, and, thereby, limited the perception of judgmental probing. I operated the video camera in an area of the classroom suggested by the teacher, and did not encourage any interaction with the students. At my school, children are videoed frequently, as it is a method used to gather evidence of their learning to share with parents; therefore, they were accustomed to this procedure already. I visited all classrooms before the study began in order to familiarize myself with all the teachers and students.

The teacher retrospection took place the same day as the videoing, after school, in a private office. The teacher participants were offered a relatively unstructured response format: to identify and discuss any aspects related to self-regulated learning. The focus of the research was directly emphasised and I tried to stimulate rather than present a novel perspective or insight.

3.9.3: Phase Three: Mid-Study Focus Group Discussion

The intention of this study was to generate open dialogue around three broad questions mid-way through the study, so that the teachers could explore issues, generate their own questions, and still pursue their own priorities. Kitzinger (1995) claims this form of group interview capitalises on communication between research participants in order to generate data. Group interviews aim to collect data from several people simultaneously, while focus groups explicitly use group interaction as part of the method. In the focus group, people were encouraged to talk to one another, to ask questions, exchange anecdotes, and to comment on each others’ experiences and points of view.
Denzin and Lincoln (1994, p.365) state that Merton et al. (1956) coined the term ‘focus group’ to apply to a situation in which the interviewer asks group members very specific questions about a topic after considerable research has already been completed. In this study, the teachers were asked three specific questions, halfway through the study, which produced a variety of responses from a recount of their teaching experiences to reflecting on their practice.

According to Patton (1990), focus group interviews are essential in the evaluation process: as part of a needs assessment, during a programme, at the end of the programme, or months after the completion of a programme, to gather perceptions on the outcome of that programme. A main aim of the focus group discussion in this study was to systematically explore how and when the teachers integrated the strategies and tools, what challenges or problems they had encountered, and what, if any, refinements they had made.

Kitzinger (1995) discusses the value of focus group discussions, commenting that researchers can tap into the many different forms of communication that people use in day-to-day interaction, which is useful, because people's knowledge and attitudes are not entirely encapsulated in reasoned responses to direct questions. Kitzinger also states that focus group methods ‘empower’ research participants, allowing them to become an active part of the process of analysis. This was an important aspect of this action research study.

Focus group discussion was employed mid-way during the study, week five, at a time and place that was negotiated with the eight teacher participants. The teachers had all completed a full-day’s teaching, and in order to focus their thinking, they first perused the broad focus questions for the discussion (refer Appendix Five) and made notes.

After some quiet reflection time, I initiated the discussion asking question one. Initially, the teachers responded one after another, answering the question more formally, and then as they relaxed, they began to respond to each other’s comments agreeing, disagreeing, and comparing. At times, the responses were not aligned to a particular focus question but developed into common themes. Goal-setting was one major discussion topic, and
how different groups of students responded to the strategies and tools, another. The discussion took approximately one and a half hours. As a consequence of the discussion, teachers shared ideas and resources and developed their next steps regarding the further integration of the self-regulated learning strategies and tools.

Following the advice of Lewis (2000), the discussion was audio tape-recorded. The teachers were encouraged to speak one at a time, and to identify themselves before they spoke. The transcribed audio tapes were edited by all teachers soon after the event.

**3.9.4: Phase Four: Final Questionnaire**

I had initially intended interviewing each teacher participant at the end of the study in order to compare their knowledge and understandings about self-regulated learning with their initial questionnaire comments. However, in order to capture their thinking before they finished the school term, and while the study was still a major focus, I decided to gather the final data through an emailed individual questionnaire. After discussing this issue with the teachers, they agreed email would be easier, in terms of time and travel. We also agreed to broaden the questions in order to capture rich data and detailed information related to the study’s main questions.

When constructing the final questionnaire for this study, my aim was to ensure the questionnaire was well written, aligned with the research aims, specific, and unbiased. The questionnaire was constructed at the end of the study after consultation with the teacher participants (refer Appendix Six). Response formats can be structured, that is, simply filling in blank lines or marking the answer in some way. They can also be unstructured, that is, a written text which includes a comment box. This study used an unstructured format eliciting written responses with ample space for comments. The questionnaire was emailed to the teachers who completed and returned them promptly. The questions were connected to the study’s research questions, were open-ended yet specific.
In hindsight, it is obvious that two questions were ‘loaded’, that is, they reflected my own beliefs regarding the value of integrating self-regulated learning strategies and tools. For example, question four asked: *Which aspects of the self-regulated learning strategies and tools will you continue to use, and why?* This question assumed the teacher participants would want to continue using aspects of the self-regulated learning strategies and tools.

All data gathered was edited, refined, and revised by the teachers throughout the data gathering period. This is an important aspect of the action research process as participants seek trustworthiness from the researcher through explicitness in the reporting of the research. Attention to detail, clarity, and communicability are essential in reporting the data. The opportunity to edit and refine the data was offered to the teacher participants in this study soon after the data was gathered and transcribed. In line with advice from Capobianco and Feldman (2006), this enhanced the validity of teachers’ interpretations and representations of their practice.

3.10: Data Analysis

A data management system was employed using Richards and Richards (1994) three phase process:

1. Data preparation – data transcribing was followed by teacher editing and refinement;

2. Data grouping – the data was divided into easily locatable groups, the initial questionnaire, each VSR data session (two), the mid-study focus group discussion, and the final written questionnaire.

3. Data manipulation – analyzing qualitative data requires the researcher to code the data into clearly defined categories in order to formulate research findings. Through categorization and coding, the data can be organised and findings can be teased out. For this stage of the research, the categories were a building block on which to base the findings and were important for the analysis. The data was initially sorted and rearranged in relation to the research questions.
Teachers with the same year level (Years two/three and Years seven/eight) were given a letter code so that their comments were easily identified and could be considered separately, as in the case of the other four teachers. The two Years two/three teachers were coded teacher A and teacher B, while the two Years seven/eight teachers were coded teacher C and teacher D.

Specifically, I intended to study the data looking for explicit evidence of, and relevant responses and comparative data about: how the teachers integrated self-regulated learning strategies and tools into their teaching in order to develop students’ self-regulating behaviours; how self-regulated learning strategies could be introduced to the learner at particular phases of Zimmerman’s Self-Regulated Learning Cycle; and, how different groups of children develop self-regulated learning strategies.

3.10.1: Content Analysis

After breaking the data into data items, I cut them directly from the transcripts, and although not laying them out in a particular pattern or order, kept them in their data grouping (that is, by initial questionnaire, VSR one, VSR two, mid-study focus group discussion, and final questionnaire). I tried to ensure confidentiality by coding all person names on the transcripts. I reread them over and over and then grouped them under preliminary category names in relation to the three research questions. Under category one, data related to how the teachers integrated the strategies and tools; category two, data related to how the teachers integrated the strategies and tools at particular phases of the learning cycle; and under category three, data related to how different groups of students developed self-regulated learning strategies.

Westbrook (1994) states that content analysis is one of the most commonly used data analysis techniques of qualitative research. It is a research method that uses a set of procedures to make valid inferences from text (Westbrook, 1994, p. 245). The accumulated text data in action research can be reduced to categories according to the research questions.
3.10.2: Constant Comparative Method

I used the constant comparative method, developed by Glaser and Strauss (1967), as a method of content analysis to allow the reduction and interpretation of data. As its name implies, the strategy is to constantly compare. Merriam (1998) states that the researcher begins with a particular incident from an interview, field notes, or documents and compares it with another incident in the same set of data or in another set. For example, goal-setting was a commonly discussed activity during both VSR sessions and the mid-study focus group discussion. Comparing the comments of, and between, teachers led to tentative categories that were then compared to each other and to other instances. Comparisons were constantly made with, and between, levels of conceptualisation until a theme was formulated (Merriam, 1998, p. 159).

The constant comparative method allowed me, as the researcher, to develop categories, properties and tentative hypotheses. I compared and contrasted data, moving backwards and forwards between each research question category, the transcripts and notes, continuing until similarities and differences emerged. For example, after comparing the junior class (Years one to four) teachers’ comments in the first VSR session, to their comments in the second VSR session it became clear that the students initially chose goals from a teacher generated list (VSR one), to developing their own personal more specific goals (VSR two). These similarities and differences became the basis for the emerging topics; for example, specific strategies and tools would be highlighted by a number of teachers for particular reasons. All teachers highlighted the value of beginning a lesson by sharing the learning intentions so that their students were aware of what they were learning and why. Or, all teachers would apply a similar process when introducing a new strategy, such as modeling the goal-setting strategy. I colour coded the data to show similar topics and labeled specific comments as useful quotes. The emerging topics were further analysed for consistencies and differences until specific meanings/themes emerged.

3.10.3: Researcher Bias
As Janesick (2000) states, the inevitability of bias in qualitative research must be acknowledged. The method employed above enabled me to identify significant themes emerging from the data; however, this identification would, to a certain extent, result from my own background, beliefs, and values. As a researcher’s approach derives from his or her personal orientation, my research approach derived from the perspective of both a teacher and a principal. I may have had a tendency to unconsciously produce data, and/or to interpret them, in a way that inclined towards conclusions that were in line with my professional commitments and beliefs. Glasser (1992), however, states that bias is not only inevitable but also desirable. The author notes that in qualitative research, the researcher is the primary instrument of research, and it appears inevitable that the data that he/she gathers, regardless of research method employed, will be biased.

3.11: Ethical Considerations

There are different stances regarding ethical issues in qualitative research; however, for the purposes of this action research study, the contextualist or holistic stance was adopted which involved describing and understanding events, actions, and processes in the natural context in which they occurred.

O’Brien (1998) stresses the point that because action research is carried out in real-world circumstances, and involves close and open communication among the people involved, the researchers must pay close attention to ethical considerations in the conduct of their work. I will use the work of Winter (1996) to consider the ethical considerations in the context of this study. He makes the following points:

*All relevant persons, committees and authorities will be consulted, and the principles guiding the work will be accepted in advance by all.* (Winter, 1996, p. 16)

A plain language statement was sent to the school principals, teachers and Boards of Trustees informing them about the study (refer Appendix One). The statement clearly related the main purpose and aims, detailed how they could be involved, and informed them about the wider significance of the study. As
noted earlier in the chapter, both schools accepted the invitation to be involved, and eight teachers, six from my own school, consented to take part.

_All participants will be allowed to influence the work; the development of the work will remain visible and open to suggestions from others._ (Winter, 1996, p. 16)

The teacher participants were able to access their own individual data at all stages of the study. Suggestions from participants were carefully considered and actions taken where they were collectively agreed to. Collective decisions were made regarding the timing of the videoing and the context of the lesson, the reworking of the final questionnaire, the purchase of resources, the adaptations and innovations to the use of the strategies and tools, and the timeframes for the study.

All participants had the opportunity, throughout the study, to review and refine the collected data in order to ensure their ‘voices’ and meanings were as accurate as possible. The teacher participants had the ability to integrate and use the strategies and tools in their own individual way and had the power to refine, adapt, and be innovative in their approach. They shared their adaptations and innovations with each other, in and between the two schools. During the mid-study focus group discussion the teachers offered insights and divergent contributions, providing scaffolding for each teacher/learner as they developed new knowledge through the sharing of ideas. As stated already, this is a major aspect of action research: reflection throughout the cycle and the ability to build shared meanings.

_Permission will be obtained before classroom videoing takes place._ (Winter, 1996, p. 17)

Informed consent was gained, in writing from all parties (Boards of Trustees, teachers, children/parents/caregivers) before the videoing took place (refer Appendix Two).
As the teachers were known to each other, confidentiality could not be ensured. However, the following protocols were followed:

- No student, teacher, or school was identified by name.
- The names of the participating teachers were not disclosed to persons external to the research group without their consent.
- All data was kept secure throughout the study in a locked filing cabinet.
- The VSR sessions and interviews were held in a private area at a mutually agreed upon time, with only the respective teacher participant and myself present.
- As the interview and VSR comments were not likely to cause harm, the sensitivity of the data was considered low. Therefore, the use of code names in publications was considered to be sufficient.
- The grouping together of comments from different sources.
- Formulating a generalised comment derived from a variety of sources rather than always elaborating on the specific comments made.

As I had worked professionally with the teacher participants previously, we already shared personal and professional knowledge. For this reason, I stressed the importance of confidentiality and small community ethics.

3.12: My Roles as the Researcher

Sengupta (2006) states that action research seeks to give a new meaning to the notion of research as what enters the research process is subject to judgment and negotiation. She states that what is done with what enters the process is not pre-determined, while what is done with the product of the process is subject to the forces of individual and collective will. Sengupta concludes that the researcher role is potentially nebulous as it is quite likely that the person playing the role is also one of the interested parties. She questions whether in this situation the usual sanctity of the research act can be maintained. In order to answer Sengupta’s points, I will clarify the roles I undertook as researcher.
As the researcher, I was responsible for the overall study but was an active agent in so far as I kept the study on track, keeping to scheduled dates and activities, and offered support when needed. I was an action researcher, listening and gathering evidence about teachers engaged in the process of taking part in this study. In line with the writing of Zuber-Skerritt (1993), the teacher participants were action learners, that is, they were learning from concrete experience and reflecting on that experience, through group discussion, trial and error, discovery, and learning from one another. As the study progressed, the teachers took ownership of the study and freely adapted and made changes where these were deemed appropriate. They generated their own problems, and developed their own solutions with regard to the use of the self-regulated learning strategies and tools. I, as the researcher, was also learning from concrete experience as I observed, listened, filmed, and began analyzing the data. I reflected on my initial assumptions, and developed new understandings from the teachers’ experiences. As outlined earlier in this chapter, there were two inter-related action research cycles operating in tandem: one involving myself as the researcher, and one involving the teacher participants. All participants in this study deepened their understanding about self-regulated learning, and I was moved to reaffirm my belief in the value of young students developing self-regulated learning skills.

Undertaking multiple roles can lead to ambiguities around the ‘democratic participatory process’. Focusing on researching change in the work place environment can be both a dilemma and strength. I was aware of the need to provide openness about my role as researcher. I had facilitated a number of workshops for teachers focused on self-regulated learning and integrated inquiry learning, and, as Director of an Information Communication Technology (ICT) Professional Development Cluster Contract, I helped to organise and deliver professional development for teachers and principals in ICT. This enabled me to form valuable collegial relationships with many schools in the wider Otago region. I formed an understanding of their school contexts and was aware of the many common challenges and issues they faced related to teaching and learning. I brought this awareness and knowledge to my role as researcher and believe it enhanced my awareness and sensitivity when working with the teacher participants.
Six of the teacher participants were working within the school where I was principal, and the other two teachers had participated in professional development that I had facilitated on integrated inquiry learning and self-regulated learning. To ensure that my professional engagement with the teacher participants was open, honest, and non-coercive, I made sure they were fully informed from the outset, and that I maintained a transparent research process. The proposed study was in line with the professional development opportunities the teachers had experienced, which focused on working collaboratively to introduce curriculum change. Teacher participants from my school were involved in frequent collaborative discussion through taking part in triangulated peer group appraisal. This process involves a group of three teachers each taking an expert lesson and two other teachers observing and later giving them critical feedback through discussion. Teachers receive professional development in how to participate so that it is a valuable and carefully considered ethical activity. This experience builds collaboration and trust, which formed a sound base on which to ground this action research study.

Undertaking multiple roles led to the consideration of ethical issues with respect to relations of power and coercion. In order to address these issues, I undertook the following procedures:

- I ensured that I took no part in the performance appraisal of the teacher participants from my school, leaving it to senior staff.
- I also ensured that teachers within my school were not coerced into participating, by inviting their participation formally, and clearly stating that they did not have to participate and that they did so at their own expressed interest.

I also undertook the role of professional development facilitator for the self-regulated learning sessions with the eight teacher participants. For an in-depth view of the
professional development sessions, the objectives and activities, please refer to Section Three, Part A, of the folio. The sessions involved sharing the knowledge the teachers already had about self-regulated learning, critically examining research related to self-regulated learning, learning about the strategies and tools in-depth, and then beginning to formulate practical applications for the study. There were opportunities for the teachers to reflect, scaffold their ideas, and to raise questions. The practicalities of the study were organised with the teachers, which involved collegial discussion focused on specific year levels of students and ideas for integrating the strategies and tools into their classrooms.

As already stated, all teachers had experienced a professional development day I had previously facilitated that involved a similar format based on collaborative sharing and discussion. Therefore, my role as facilitator was not new, and the passion, beliefs, and biases I have for the topic of self-regulated learning were already apparent and accepted.

I undertook all data gathering activities through out the study. I videoed the integrated inquiry learning sessions, when teachers were incorporating self-regulated learning strategies and tools within their classrooms. That is, I was situated within their classrooms but not participating. I audio taped each teacher’s comments during the two video stimulated recall sessions, and I facilitated and audio taped their comments during the mid-study focus group discussion. I gave out the initial questionnaire at the beginning of the first professional development session and emailed the final questionnaire to the teacher participants. I employed a research assistant to transcribe all data. I visited all classrooms prior to videoing in order to gain a sense of familiarity with the students. Within my own school, however, the students were used to my presence, and it was not a novelty to have me there. In each classroom, I explained why I would be videoing and asked the students not to interact with me. Generally, the students managed to ignore my presence, but occasionally a student, usually a very young student, smiled or waved as they passed the camera. I reiterate here, that all the students were familiar with using tools such as digital cameras within the inquiry learning context to enhance their own learning and presentations, therefore, it was not a novelty to see someone videoing in their classrooms.
Undertaking multiple roles, as described above, forced me to clarify whether I was acting as an ‘insider’, that is, studying a group to which I belonged, or an ‘outsider’, that is, studying a group to which I did not belong. As stated previously, typically an ‘outsider’ role in educational action research is a university academic who has a specified study planned and enlists teachers to trial the intervention. I did not fit the typical ‘outsider’ description as I worked within the same working culture as the teacher participants. Having said that, I was also the principal of the school where six of the teacher participants worked, and a facilitator of professional development sessions all eight teachers had attended. I may have been viewed as the ‘expert’ related to self-regulated learning theory, and, as such, could have engendered feelings of respect, authority, and power from the teacher participants.

As stated above, in action research participants seek trustworthiness from the researcher through explicitness in the reporting of the research. As an ‘insider’ in this study, I had a grounded understanding of the contexts within which the data was being gathered and could, therefore, provide more meaningful and accurate accounts of the teachers’ practices.

I was, in effect, imposing a classroom intervention on a group of teachers by asking them to trial self-regulated learning strategies and tools. However, I viewed myself as an ‘insider’, as a facilitator researcher, investigating my own practice and that of my teaching colleagues. The teacher participants already shared knowledge of self-regulated learning, were aware of my biases and beliefs, and shared an interest in this area of teaching and learning. Their interest may have been generated by my initial professional development with them, through the New Zealand Ministry of Education’s revised draft curriculum statement and its emphasis on developing self-regulated learners, or through their own personal interest and journey. The fact that we shared a similar working culture and a knowledge of, and interest in, self-regulated learning allowed me to class myself in an ‘insider’ role rather than that of an ‘outsider’. 
3.13: Conclusion

In this chapter, I have described the research design and methods I employed in this study. I have described the simultaneous action research cycles that operated and provided a brief picture of the school settings and teacher participants. Each phase of the data collection process was explained and the range of data gathering techniques was justified.

The data analysis technique that enabled categories and themes to emerge was also described. Finally, the ethical issues involved were considered and, in the process, the conduct of the research was made transparent. In the next chapter, I analyse and discuss the data in relation to my first research question: *How do teachers integrate self-regulated learning strategies into their teaching in order to develop students’ self-regulating behaviours?*
CHAPTER 4: Data Presentation and Emergent Themes: 
Questions One and Two

4.1: Research Question One: How do teachers integrate self-regulated learning strategies into their teaching in order to develop students’ self-regulating behaviours?

This section discusses the data analysis related to the integration of the strategies and tools, moving from general to specific findings.

As stated previously, six of the eight teachers had undertaken a professional development session on self-regulated learning I had facilitated prior to their participation in this study, and stated in the initial questionnaire that they were already beginning to use some of the self-regulated learning strategies and tools. The response to the second question on the initial questionnaire (see Appendix One) indicated that all teachers were beginning to implement self-regulated learning strategies and some were utilising the tools. All teachers stated that they were sharing the learning intentions with their students, although they were not asked how often they used this strategy. Some teachers had trialed the use of goal-setting, and some had used exemplars in order to provide models for students to refer to. Comments included:

*I tried to teach the children to set goals, but this didn’t work very well. I needed to start smaller, rather than come up with long-term goals first* (Year four teacher)

*Models/examples are occasionally used as an exemplar.* (Year seven/eight teacher - C)

A number of comments used descriptors such as beginning to, I tried to, trialing, just started to, I have used, we have begun to use, when describing what they were presently
doing to develop self-regulated learning skills in their students. One comment was that, “none of it (self-regulated learning) done too well…” (Year two/three teacher – C)

The comments suggest that, before taking part in the study, the teachers had incorporated some, but not all, of the self-regulated learning strategies and tools used in this study into their classroom programmes. However, none of the teachers had used all of the strategies and tools, together, over a sustained period of time.

Analysis of the response to question one in the mid-study focus group discussion suggests some teachers preferred to introduce the strategies one at a time, over a short time span, explaining their use and value. Others, especially those with older students, preferred to introduce them slowly and with greater explanation to help students gain a better understanding of the strategies and tools applicability:

I introduced the tools to the class in one sort of session and went through all of the tools and had a chart blown up and explained what each one was used for and the benefits of it and maybe when you might want to use it for certain situations. (Year five/six teacher)

... with older kids, some unpacking of the SRL (self-regulated learning) tools and strategies and how they learn, must be done. (Year seven/eight teacher - D)

The same teacher went on to explain why this was important:

If they understand that they are in control and how to control their learning then that is good ... I made up a task where they were asked about SRL, the thoughts they had about SRL, their personal feelings, how they thought the tools were working. Out of the class, all twenty-seven felt that when it was done properly, they felt the atmosphere was beneficial. The children were all able to articulate the benefits of SRL, which I found interesting because then we were able to have an open discussion about the philosophy and why we
were doing it, what was the purpose, who was it for. It reinforced to the kids why we are doing SRL.

The teacher allowed the students to offer their individual views and opinions regarding self-regulated learning. The students were able to offer valuable comments as they had already formed an understanding about self-regulated learning and how the strategies and tools could benefit their learning. The students had experienced the strategies and tools and realized that when they all utilised them, the classroom learning environment was enhanced and promoted their learning.

The final questionnaire data provided further comment on how the teachers integrated self-regulated learning strategies into their classroom programmes. Teachers were specifically asked: *What advice would you give to teachers wanting to integrate self-regulated learning strategies into their teaching in order to develop students’ self-regulating behaviours?*

The teachers offered a variety of ideas. One teacher recommended the integration of all the self-regulated learning strategies into their teaching and learning programmes:

> I would recommend integrating all these strategies because they enhance teaching and learning to such a degree that you would never want to be without them. (Year two/three teacher - A)

This teacher placed great value on the integration of the strategies commenting within the same questionnaire:

> I will continue to use all the strategies as they give the learning in my classroom depth and power.

The teacher used the word ‘power’ in a previous question in the same questionnaire and defined it as students being more focused on their own learning. The Year two/three teacher, therefore, values the strategies for their ability to help young students become aware of how they learn: metacognition. As pointed out in the literature review, Zimmerman (1989) describes self-regulated students as those who are metacognitively, motivationally, and behaviourally active participants in their own learning process.
Through integrating the strategies, the Year two/three teacher stated that she had helped the students begin to personally initiate and direct their own learning.

Another teacher recommended taking the time to trial the strategies so that refinements could be made in order to ensure they were compatible with a teacher’s pedagogical approach:

*Take the time to play and trial so that adjustments can be made that suit your own teaching style.* (Year seven/eight teacher - D)

In other words, teachers should integrate the strategies, over time, in order to refine them to suit their teaching approach, as opposed to integrating all the strategies at once and being faced with a number of challenges. This suggestion was generally promoted by all the teachers as it would allow the teachers time to find solutions to issues as they arose; for example, timetabling the use of the tools, such as the CD players.

The same Year seven/eight teacher advised other teachers to reflect on their own practice before integrating self-regulated learning strategies to ensure they added ‘value’ to their classroom practice. In other words, a teacher should only integrate self-regulated learning strategies and tools if they thought they would further enhance student learning in their classroom. This teacher stated it was important that teachers established their own beliefs about learning first so that they were sure the principles they were adopting were compatible with their pedagogical beliefs. The teacher argued for adopting new strategies to enhance learning, as opposed to adopting strategies simply because they were the latest innovation being promoted. As noted in Chapter One, professional development opportunities for teachers in New Zealand has changed from a focus on curriculum delivery and what children must learn to how students learn, and changing teacher beliefs and practices (Ministry of Education, 2006c). Teachers are becoming empowered to trial new methods of teaching and learning, and many schools have instigated new teaching methods.

One teacher felt it was easier to introduce the tools separately, setting a timeframe, so that students fully understood their use and could make judgments about their suitability:
Introduce each of the tools separately. Spend at least one to three days just using that tool before introducing a new one. It ensures that children fully understand the uses of the tools and can make judgments whether they work for them. (Year four teacher)

This junior class teacher stated young students needed time to develop an understanding about the personal utilisation of the tools. The Year zero/one teacher also advised not to introduce the strategies and tools all at once but instead to choose specific strategies only, appropriate for the age level being taught. Research by Borkowski, Carr, Rellinger, and Pressley (1990) reports that training children to be more strategic readers and writers involves making children aware of potential strategies, helping them to attribute success to good strategies, and helping them to choose and monitor appropriate strategies. Therefore, integrating appropriate strategies and tools separately, over a length of time, will allow students to develop an understanding and awareness of them, to utilise them with effect, and encourage them to monitor their use.

The Year four teacher believed it was important that students understood the term ‘self-regulated learning’ and its associated vocabulary, so recommended teachers use ‘kids speak’, that is, age appropriate language, when unpacking the strategies and tools. The teacher enthusiastically commented:

My advice is, have-a-go! You will be amazed how young children accept the self-regulated learning language/tools/strategies and begin to develop self-regulated learning skills/behaviours.

In contrast, a Year five/six teacher introduced all the tools within a week commenting that:

... within a couple of weeks, I was using all the tools and strategies with ease because the children took to it so easily.

The teachers’ comments reflected their own particular approach to introducing new strategies and tools. The teachers of young students (Years zero to four) integrated them from a cognition perspective, that is, the students’ ability to understand how and when to
use the strategy, while the Year five/six teacher introduced the tools in response to the students’ reactions to the utilisation of the tools. This could simply have been because the students were older and more adept at accommodating new learning.

However, the VSR data, captured both at the beginning and end of the study, contained descriptive recounts of all teachers, across all year levels, integrating the strategies and tools in very deliberate ways with the intention of ensuring students gained an understanding of the utilisation and application of each one.

For example, the Year five/six teacher, as quoted above, described a class reflection activity, during VSR session one in week two of the study, where the students were asked to reflect on their goal-setting skills in order to gain a deeper understanding about this strategy. She said:

> So I talked to the children at the end, when they went over their goals for the day. I used examples of children I saw throughout the lesson who refined their goals and decided they needed to change them and make them more specific, and they did that independently throughout the lesson. They realized sometimes their goals were too short, and they had finished it, and they had to set a new goal. I used these as examples at the end to talk to the whole class, and I also said to them that I noticed when they made their goals more specific and more task related, they were actually more focused and got the task done. They achieved it by the end because they knew exactly what they had to do, and it was clear and easily defined and it made their learning more focused.

Here, she needed to observe children throughout the lesson, in order to come up with explicit, relevant examples that she could then use to demonstrate to them the importance of setting specific and task-related goals.

As described in Chapter One, researchers such as Zimmerman (1989), Boekaerts (1999) and Corno (1992) emphasise the importance of metacognitive processes. Students who naturally self-regulate, know about themselves as learners, they have an understanding
about various learning strategies, and they know how, when and why to use the strategies in a specific context.

Practical advice included timetabling the use of the tools, to keep ‘prompting’ students about what tools are available and their use, and to start ‘small’ when introducing goal-setting. Teacher modeling of goal-setting was recommended by one teacher:

_I’ve also found that with me (the teacher) taking part in the goal-setting routine, it has become more successful._ (Year two/three teacher – B)

Teacher modeling of a new strategy is a powerful means to encourage the learner to positively utilise it. As stated in Chapter Two, modeling lies at the core of social cognitive theory, as in learning from models, observers go through the processes of attention (observation), retention in memory, reproduction of the observed behaviour, and motivation to produce the behaviour in the future (Eggen and Kauchak, 2003). Grant (2005) concurs with this notion in relation to goal-setting, stating that extensive modeling of the goal-setting process helps students develop positive perceptions of goal-setting as a tool for learning.

This introduction to the data illustrates the wider themes that emerged which include: it is important to carefully and clearly introduce the strategies and tools; to model their application; to adapt them to suit the age of the students; to provide opportunities for students to trial using them; and to regularly allow time to reflect on their use and benefits, which will encourage student ownership of the strategies and tools, as they realize the benefits and utilise them with effect.

These findings, from a teaching perspective, parallel and build on findings, from the learners’ perspective, of Zimmerman and Bonner (1998). They identified the following four important phases in students' development of complex cognitive motor skills: observation: the learner gains an image of the skill by watching as others model what to do; imitation: the learner emulates the model and is given feedback about their efforts; self-control: the learner no longer has to rely directly on the model and is becoming proficient at this type of task; and self-regulation: the learner is able to draw on what they
already know and can adapt the task to a changing environment. The VSR data in this study revealed all teachers were providing opportunities for their students to experience the four phases. For example, they modeled goal-setting, allowed students to practice using the teacher generated model, gave feedback on the suitability and specificity of goals they set, and allowed students to monitor their goals.

The phases discussed above describe elements commonly attributed to the social constructivist teaching method: cognitive apprenticeship. Johnson (1992) states that cognitive apprenticeship has three primary components: modeling, coaching, and fading. The teacher models the strategy in a sequence geared to fit the student’s level of ability. The teacher models expert behaviour by demonstrating how to do a task while explaining what is being done and why it is being done that way. The student observes the teacher, and then copies his/her actions on a similar task, with the teacher coaching the student through the task by providing hints and corrective feedback. As the student becomes more skilled in the task, the teacher gives more and more ownership to the student by ‘fading’ into the background.

As outlined in Chapter Two, the social cognitive model of self-regulated learning, on which this study was based, views modeling as a core function. This study suggests that self-regulated learning strategies, such as goal-setting, therefore, may best be taught using the social constructivist method of cognitive apprenticeship.

4.2: Data Analysis Related to the Integration of Specific Strategies and Tools: timing, modeling, age suitability, providing trialing and reflecting opportunities

Below, I report on the teachers’ responses to the six dimensions of self-regulated learning. Explicitly, I discuss the data regarding goal-setting and monitoring; sharing learning intentions and developing success criteria; using models and exemplars.
4.2.1: Goal-Setting and Monitoring

The younger the level of student the more teacher-directed the approach to integrating goal-setting into the lesson was, although all teachers began by modeling and developing examples of possible goals. Five junior class teachers (Years zero to four) developed lists of goals with the students, and displayed them for students to choose a goal from:

*On the board, I’ve got a list of possible goals they could have related to working in groups. A couple of days ago, we brainstormed ideas for what they could do better when working in groups, and what they needed to work on. The children then chose their goal from that list. Some children preferred to have their own goal, but it was still related to working in groups.* (Year four teacher)

The three senior class teachers (Years five to eight) encouraged their students to develop personal goals which were then written in a learning log. The learning log also included monitoring and reflection comment space:

*Prior to this, children have reflected in their learning log books. They have set some targets and goals in their learning log books about what they want to achieve with the making of their playground ...* (Year seven/eight teacher – D)

The teachers in the study helped each other to develop and refine systems for goal-setting and monitoring. A year zero to one teacher developed a colour-coded goal chart which was interactive and designed to suit new entrant student’s abilities and needs. The teacher developed this system as there was not a suitable system for introducing goal-setting to students who had just started school. She commented that some of the students were just beginning to read and, therefore, she had to design a system that did not rely on their capacity to read. The system was used by one other teacher who also taught very young students (Year one/two).

On the other hand, the senior class teachers, together, developed a comprehensive learning log for students to use for goal-setting, goal monitoring, self-assessing, and reflection. A Year seven/eight teacher described the learning log:
We have the children going through their learning intentions booklet (or their learning logs really), which gives them a focus for the lesson or focus for that session. They have a place where they can write what they are hoping to achieve to do in that session, according to the time restraints, they know how long they have got, they need to set their goals for those. They also have a place in there for things they may need to remember or to bring with them. It has a place down the bottom for jotting ... The children also use the learning logs for reflecting about whether they have stuck to their time-management skills, whether they have achieved what they wanted to do. (Year seven/eight teacher – C)

In the sessions where they reflected on the videotapes of their classroom practices (that is, data from VSR one and two), teachers chose to comment on how they encouraged students to monitor their goals during the learning session, requesting them to reflect on their progress toward achieving their goals. Their comments included:

I have just said to the children they have five minutes left, and to look back at what they were hoping to do in that time, and look at their learning logs and their goals, and check how they are going related to that, and if they are going to finish it in that time. (Year seven/eight teacher - C)

I have just called a goal check. The kids need to stop and reread their goals, and make any changes they need to with their behaviour or how they are working in a group. (Year four teacher)

Throughout the day, they have the chance to take their goal, they have to place it on the back of their chair, and at the end of each session (so before interval and before lunch and again at the end of the day), the children have to say what their goal was and we have two or three children who reflect on what they did to achieve their goal. (Year one/two teacher)
We have been reflecting on goals throughout the day, mainly verbally in pairs or individually using a smiley face. (Year four teacher)

Midway through the sketching the session, I have got the whole class together to recap the success criteria and remind them of their goals, and we are just checking in and making sure they are still thinking about those things and some children are sharing how they are going with theirs. Finally, in this section they have finished their sketch and are back on the mat with their sketch and goal book and they are expressing how they feel they have gone with their goal. (Year two/three teacher – A)

This monitoring activity fulfills an aspect of Zimmerman’s (1989) social cognitive theory on which the study is based. As outlined in Chapter Two, the teachers were encouraging their students to self-observe (reflect on their progress), self-judge (decide whether they are on track to fulfill their goal or not), and to self-react (if needed, change their strategy in order to achieve their set goal). In combination, the students were learning to self-regulate their behaviour.

One junior teacher commented, in the mid-study focus group discussion, that the students valued peer goal monitoring as it made goal-setting more meaningful:

One of the reasons I think they are finding goal-setting meaningful is because of the group sharing. Feedback is about how relevant a goal is for them and talking about why it is. They suggest them (goals) for each other as well. It is quite powerful coming from their peers. (Year two/three teacher – A)

The same teacher commented in the VSR two data, captured at the end of the study:

I also think that group sharing of goals at this stage and age (not sure about age), but stage of their development, with them, is really valuable because hearing other people set and reflect on goals, really, well, helps those who find it a bit harder, and it also helps with that honesty about how you are
The video showed the students sitting on the mat in small groups sharing their goals and receiving feedback from the other group members. The teacher’s comments indicated that group sharing and monitoring of goals was meaningful for the learner in four ways:

1. The students see peer feedback as relevant;
2. Their peers help them to set appropriate goals;
3. Goal-setting is modeled by their peers making the process more explicit;
4. When monitoring the goal, the learner is helped by their peers to honestly evaluate their progress, thereby gaining a fuller perspective.

Making goal-setting more meaningful for the learner from a young age will encourage autonomy over time and help the learner to become self-regulated. This finding concurs with Brophy’s (2004) who stated that students need to be actively involved in setting and evaluating their own goals in order for goal-setting programmes to remain effective over time.

When visiting the teachers’ classrooms, I observed that written goals were often easily accessible, either visibly displayed in front of, or, in a learning log left on their desk top, so that both teacher and student could monitor and reflect on their goal quickly. Teachers verbally reminded students to take a moment to reflect on their set goal(s) and to adjust their learning behaviour accordingly. This reminder was coupled with an opportunity for the student to read their set goals in one of three ways: the goal was attached by velcro to the table in front of them (Year zero/one); the goal was attached by velcro to the back of their chair (Year one/two); or, the goal was recorded in a book (all other teachers). By providing two modes, oral and written, the teacher aimed to ensure all students were attentive and actually monitoring their set goal.

The VSR one data, captured during week two, revealed that junior class teachers provided simple, more general goals for their students. They encouraged them to work
with these goals, so that students came to realize that the goals were not specific enough or not personally meaningful:

On the board, I’ve got a list of possible goals they could have related to working in groups. A couple of days ago we brainstormed ideas for what they could do better when working in groups, and what they needed to work on. The children then chose their goal from that list. Some children preferred to have their own goal, but it was still related to working in groups ... They found out the goals they had weren’t working for them today because they weren’t relevant ... so, we had a big talk in the group and they have set new goals, which are more specific to helping them. (Year four teacher)

The teacher facilitated a group discussion activity that allowed the students to reflect on the strategy of goal-setting and refine their use of it. As outlined in Chapter One, equipping students with self-regulating learning strategies is not sufficient: helping students to take ownership of, and value, the strategies is crucial. The teacher above was allowing time for students to discuss, reflect upon, and practice the strategy, allowing the students to take ownership of the strategy.

Well, at this stage, the goals are quite general. We’ve set them at the beginning of the day and reflect on them at the end of the day ... they are quite general at this stage ... The junior syndicate developed the goals and we have a generic list. But I think that is a good place to start ... today, two people wrote their own new alternative goals in by hand. So already they are starting to think. (Year two/three teacher - A)

By the middle of the study, teachers could see and comment on the development of young students’ goal-setting skills. For example, in week one, the students in Year two/three chose a goal from a class created list, by week five students were independently setting personal, more meaningful goals:

Interestingly, quite a few children are now creating their own goals. These are much more specific than the generic list we began with. This is a Year two/three class, I haven’t suggested they create their own goals, it began with...
one child doing it, and now it is catching on with others. (Year two/three teacher - A)

Now it’s getting to the point where there is only, maybe, two or three children who choose a goal from the list, most of the children are coming up with their own. I think this is because they have had a lot of opportunities to talk with other children about their goals. Children are reflecting up to three times during the day on their goals. (Year four teacher)

By weeks eight and nine of the study, most teachers had reflected on the goal-setting activity with their students, refined the process, and allowed students greater ownership over the setting of their goals. All of the comments below describe aspects of the modeling cycle they adopted for goal-setting: introducing goal-setting, modeling it for students, scaffolding their practice, and then monitoring how students use the goal-setting strategy independently. During the second VSR session, the Year four teacher stated:

Their comments suggest that the children are now at the stage where goal-setting is a lot more personal to them. Children want to set goals at different times of the day. Some want to have more or less goals. Children agreed that the goals they have had in the past are now too easy. My challenge will be to help them create more challenging goals… (Year four teacher)

At the beginning of the session, we get our task goal booklets out, and we write down our goals for the day … We make them specific, more independent as time has gone on … They have planned what they need to do for that session and it’s focused and self-directed. (Year five/six teacher)

I found, over time, the children have become clearer about what they want to say and have been more thoughtful about what they want to do with their goal. (Year two/three teacher - B)
At Year seven and eight, we are still getting to grips with goal-setting ... We are trying really hard to make the goals more specific and writing SMART goals ... The focus for next term is to look at the specific measurable part of the goals. (Year seven/eight teacher – C)

Like other research (e.g. Grant, 2005), teachers in this study argued for guiding students in setting their own goals rather than imposing goals on them, as one of the most effective ways to increase a student’s goal commitment.

Of particular significance here is that the teachers’ experiences in this study provided evidence that students from Year one to Year eight can learn how to set and monitor their goals. The teachers offered practical advice on how to achieve this with different age levels. This builds on findings from Grant’s study that had very similar results but involved a group of students in Years three to six rather than the wider age-range used in this study.

Comments from the final questionnaire data show how vital the teachers perceived goal-setting to be, and how it impacted on student motivation and self-regulation development:

I think the most important strategy that I have trialed is goal-setting. Mainly because the best way of motivating children is getting them to take charge of their learning. Goal-setting lets them do this, and they get greater satisfaction, I think, from achieving a personal goal than a goal a teacher has set for them ... Goal-setting has impacted on the students in so many ways. It has helped their relationships with their friends, helped them focus into aspects of their learning they need to improve on, work on behavioural issues in the classroom, and lots more. (Year four teacher)

If we forget to start the day with goals, children are more disorganized, reliant and lack direction. When SRL is in place (that is, setting goals as part of SRL), the children independently get their goal books out, reflect at the end
without prompting, and are making improvements in their learning and what they produce. (Year five/six teacher)

In the following comments, goal-setting is described as a valuable form of self- and peer-assessment as students reflect on their own, and others’ learning:

Goal-setting has also made the children more aware of how and what they want to learn. It has also made them aware of what the others are trying to achieve, and they encourage each other. (Year two/three teacher - B)

The children are now taking more responsibility for their own learning, choosing goals independently in the morning, reflecting on these through the day and are far better at articulating their achievements and those of their peers. (Year one/two teacher)

From the teachers’ comments above, the following notions regarding goal-setting could be considered: to use individual goal-setting books for more senior students, the senior teachers developed comprehensive learning logs for students to write and monitor their goals in; to display the learning intentions and success criteria for students to create goals from; to allow students to choose their own goals, and to prompt students to monitor their goals frequently; to allow students to begin with more general goals, and, over time, the goals will become more personal and meaningful.

These notions undoubtedly support the assertion that very young students can develop goal-setting and monitoring skills, key self-regulatory skills.

4.2.2: Sharing the Learning Intentions and Developing Success Criteria

The importance of sharing learning intentions with students and revisiting them often was reflected on by a number of teachers during the first VSR session. If students are to have responsibility for their learning then they must be clear about what they are intending to
learn. Absolum (2006) states that sharing the learning intentions involves being clear about what we want students to learn, why we want them to learn it, and how we intend the learning to proceed. Displaying the learning intentions provides a useful resource which students can use to set personal goals.

The teachers emphasised how they worked with the learning intentions, again depending on the age group of their students. For example, the Year four teacher commented:

*The learning intentions are up on the board, for level two and three and they are straight from our planning ... The kids repeat the learning intentions aloud as a class. We also started to look at the success criteria, but we will be doing that in the next couple of days after we have done a bit more exploring of the circuits.* (VSR one)

The students were reading aloud from a chart on the whiteboard which read: we are learning to design a simple circuit (level two), and we are learning to design a circuit which includes a light (level three). The teacher inferred she would define this intention further with the students, after they had experienced activities related to circuits. The teacher and students would develop the success criteria together helping the students to form a clear picture of what a simple circuit consisted of and how it worked.

A Year seven/eight teacher moved beyond developing the intentions to having her students rework them into the language that was relevant to them, thus avoiding some of the teacher language. The teacher said:

*Developing the intentions and changing those into kids speak ... the children know now that it will happen at the beginning of every unit before we start anything else. They know they need to look at their learning intentions and change them to say: what does it mean for us as children? How would we say that? What are we going to do?* (VSR two, Year seven/eight teacher – C)

One teacher commented on the importance of retaining teacher phrasing of the learning intentions, as opposed to using ‘kids speak’ completely, so that students are exposed to significant vocabulary attached to the learning task:
In brackets I have put kids speak for words they may not know the meaning of. I think it is important that they still know the full phrasing of the learning intentions because this also helps build their vocabulary. (Year four teacher)

To be involved in their own learning, children need to know, very specifically, what they will be learning. The teachers, on the basis of their experiences, found that learning intentions needed to be expressed in clear, accessible language. It takes practice to produce meaningful learning intentions that pupils can understand. Skill or knowledge-based learning intentions are easier to translate; concepts are more difficult. Technical language may also cause a problem, but children can generally cope with technical terms if they are introduced to them early and have had them explained. This idea parallels the thinking of the teacher quoted above, as, by introducing technical terms early, the student will become accustomed to the vocabulary, form a basic understanding, and build on the meaning each time they are exposed to it.

With the very young students, the Year zero/one teacher commented during the second VSR session that her:

Next step is to reread the learning intentions. We read these on Monday when we started working on the Marvelous Toy song, and I just want to reread so they understand what they are learning, what the learning intention is, and the success criteria that they need to achieve that learning intention.

I observed, while visiting the teachers’ classrooms in order to video lessons in weeks two, eight and nine, that all teachers had the learning intentions displayed as charts for students to monitor their progress against. The teachers referred to the learning intentions often, so that students were aware of what they were trying to achieve, why they were carrying out the task, and to allow students to measure their progress. This supports other research (e.g. Clarke, 2005) that suggests that sharing the learning intentions and success criteria both orally and visually is more effective for all age groups.

Clarke (2005) claims this reflective activity places students in a self-evaluative position and, therefore, makes subsequent reflection against the learning intention a necessity.
Absolum (2006) endorses this teacher practice stating that teachers need to repeatedly return to the main idea of the learning and check progress. He states when the learning intention is clear, student motivation improves, students stay on-task, their behaviour improves, and they are more apt to engage in self-regulation. I came to the same conclusions many years before (refer Chapter One).

When considering the success criteria, the teachers also commented on the importance of developing the criteria into ‘kids speak’. That is, making the criteria clear according to age, cognitive and language levels, so that the students are aware of what they have to do to achieve the learning intentions. One teacher commented in the final questionnaire:

*Developing the success criteria in kids speak, with the children, allows them to check their work independently and make improvements. It links their learning and helps with reflection activities and naming their next learning step.* (Year five/six teacher)

This involves the students in their own learning by asking them to link the learning intention with the task instructions. This can be challenging, as they have to understand the learning intention to the degree that they can envisage what a finished product would look like.

These points link to findings by Absolum (2006) who reported that sharing learning intentions is of little use if they are not accessible and meaningful to the students. He advises teachers to reword the learning intentions according to age, cognitive and language levels in order to provide a shared vocabulary to describe what is to be learnt. Absolum suggests if specialized language needs to be learnt then that should become another learning intention.

In summary, the teachers, on the basis of their experiences with all age groups of students, suggested that learning intentions and success criteria needed to be presented in a clear, unambiguous manner, both orally and displayed visually. By revisiting them frequently, students are able to reflect on their progress and develop next learning steps. I believe it is becoming common practice in New Zealand schools to share the learning
intentions and develop success criteria with students; however, I question how specific the intentions are (whether they are written for large learning topics or daily lessons), and how often they are revisited.

4.2.3: Using Learning Models and Exemplars

The data from both VSR sessions showed that most teachers used a learning model or exemplar for the students to refer to, in order to help them carry out an activity and to check their own progress towards completing it. The teachers visually displayed charts of models and exemplars which clearly explained how to achieve a particular task. Some models were teacher developed and others were accessed from other sources such as the New Zealand Ministry of Education’s National Exemplar Study (accessed at Ministry of Education, 2005d).

The model charts were bold and clear, in age appropriate vocabulary, and the task was broken down into stages. An exemplar should illustrate key features of learning, achievement, and quality, and help students identify next learning steps (Ministry of Education, 2005d). The teachers referred students to the model/exemplar for task clarification or to encourage them to self-assess their progress towards completing a task.

Some teachers had multiple model charts on display in order to cover the multiple tasks their students could be working on at any one time:

I have a little section for each MI activity, which has the learning intentions success criteria model, an exemplar model, or another model I have made, and a model of a child’s example of the activity that is going to be done, so that each child has a very clear description of what the task is from the name of the activity, the model of it, the break down of the success criteria, and along with that any equipment they need. (Year two/three teacher – A)

As Absolum (2006) states, for very young students, words may be the most inefficient way of conveying intended learning, but when combined with exemplars/models, will carry the whole message to the learner. One teacher described this in detail:
I have found that it is so important to share the learning intentions with children and develop success criteria. Children are more focused on tasks and can self-evaluate whether their work is of an appropriate standard or not... Earlier in the term, I made a set of posters outlining different levels children can achieve at within a particular subject... Children had to look at the poster each day before handwriting and decide what level they wanted to work on that day, for example, level three linking. Then, after they complete their handwriting, they write at the bottom what level they achieved at. Every two to three days, I collect in their handwriting books and make comments based on how they are achieving at particular levels and whether I think they can move on to the next level. Children took this very seriously and became really honest when commenting on their levels. In math, I used the same technique. I also used the poster when working with small groups. The poster would become the learning intention for that day’s math lesson. It was also a clear model of what they had to do to progress on to the next level. It gave all children something to work towards, and also gave a sense of achievement when they progressed to the next level. (Year four teacher)

The teacher was providing scaffolds, which form aspects of Zimmerman’s Self-Regulated Learning Cycle (2002). As stated in Chapter Two, Cleary and Zimmerman (2004) report that there is a large body of research showing that students who have been trained in self-regulation skills during learning, display high levels of motivation and achievement.

Being clear about what is to be learnt is good advice, and as Crooks (2002) points out, helping students see why something is important to learn is more likely to trigger their personal desire to learn and help them face challenges in their learning. Therefore, it is important students know why what they are learning is relevant and important, and the teacher ensures the process supports the overall learning intention.

4.2.4: Self-Regulated Tools Identified by the Teachers
The following section begins with a general discussion regarding the tools identified by the teachers: carrels, on task/off task check sheet, CD players, timeout capsule, and STARS. The section then moves to a more detailed discussion concerning the on task/off task tool. The teachers’ experiences are presented, showing how they contended with the contradictory nature of this tool.

The data suggests that the teachers integrated the self-regulated learning tools into their class programmes in one of the following ways: they introduced all tools at the same time with an explanation of how they could be used; they chose only some tools to introduce; or they introduced all the tools over a period of time. Generally, how they introduced the tools related to their own preference and comfort level associated to the tools. At the beginning of a lesson, some teachers reminded the students about the availability of the tools and their possible application. Teachers commented that the tools were used throughout the day, especially for more individual tasks:

*The children are using the tools at other times during the school day, particularly in writing, reading, and quite often in math, especially if it’s in an activity where they have to work alone.* (Year one/two teacher)

At the initial professional development day, I gave teachers a basic example of an on task/off task check sheet, which most chose to adopt (refer Chapter One). The senior teachers (Years five to eight) incorporated it into each student’s learning log. Most teachers used the on task/off task check regularly in order to get the students to reflect momentarily on their goal, or to get them to consider whether they were on or off task at that specific time:

*Throughout the lesson I would call ‘check’, and the children would stop what they were doing, go back to their booklet which has their goals in it, which has a little column in it for on and off task, and it’s up to them whether they tick on task or off task column during the lesson. I noticed some of them actually ask themselves as they walk back, ‘Was I on task?’ and sort of justify what they were doing whether it was a task-related activity that they were doing, and then others that you could clearly tell were not on task, looked at
me and talked to each other, and looked at me and had to really think, and they knew then they really weren’t on task. Another kid also said, ‘I was on task I was actually on task’. (Year five/six teacher)

The comment demonstrates the complexities involved in using this tool and raised the following questions: Did the tool interrupt the learning of the students who were on task? If so, how did it impact on their learning? Was it motivationally beneficial for the students who realized that they were ‘actually on task’? Were the students merely obeying the teacher’s commands rather than genuinely demonstrating a degree of control? Did the students have a clear understanding of on task/off task behaviours?

Some teachers believed it was important to discuss with the students what on task and off task behaviours were. By helping the students to clearly differentiate between on task and off task behaviours, they were then able to judge for themselves which category their behaviour fitted. A Year seven/eight teacher commented that they had some ‘philosophical debates’ with the students regarding this topic:

... Looking at how many times they are on task or off task – what even off task is. Is going and sharpening your pencil on task? So we have had some philosophical debates about what is on task and what is off task. (Year seven/eight teacher – C)

The on task/off task check was designed so that students could monitor their on task/off task time, gaining a picture of when and why they tend to be distracted or off task, and to gain an understanding of their concentration span. They could then make adjustments about their behaviour and challenge themselves to stay on task for longer periods or during distractions. Deciding as a class what obvious on task and off task behaviours are or look like allows the students to make a quick judgment regarding their own behaviour. If the judgment becomes too complex for a student, valuable learning time may be lost while a decision is made. Engaging in a ‘philosophical debate’ with the students regarding what the behaviours are or look like may clarify the judgment call for the student. However, the strategy was designed to train the student to recognize
instantaneously when they are unfocused, and to alter their behaviour and concentrate on
the set task. If they are focused the distraction should be momentary.

In the VSR two data, a Year five/six teacher described this metacognitive process:

_During the session I call ‘on task/off task check’, and the children go over to
their booklet and tick whether they are on task, or off task. Sometimes it’s
consistent and sometimes it’s not, so the kids seem to be very honest about it.
They are quite committed to go back to their table and put the ticks in and
they have a wee think about it. I can hear them talking to each other or to
themselves, ‘Well, I was half and half, so I guess talking to so and so about
their study wasn’t really me on task’, so they sort of verbalise and understand
whether they were actually on or off task._

As noted in Chapter Two, social constructivist teaching is based on the belief that
learning occurs as learners are actively involved in a process of meaning and knowledge
construction rather than passively receiving information. In the teacher’s comment above,
it is evident that she was initiating a control mechanism regarding the students’
behaviour. She was prompting the students to share responsibility and decision-making
and demonstrate mutual respect regarding their behaviour. However, it could be
questioned whether her focus was more on controlling student behaviours than enabling
social constructivist learning, that is, positioning students as actively engaged in choosing
their activities. The on task/off task check sheet can be a valuable tool for the learner as
they can monitor their on task time, gaining a picture of when and why they tend to be
distracted or off task. They can then make adjustments about their behaviour and
challenge themselves to stay on task for longer periods or during distractions. This
element of teacher control can be viewed as a short-term mechanism to help students
develop a long-term metacognitive strategy. It can be viewed, then, as a democratic and
interactive process which encourages students to be active and autonomous learners.

The significance of students formulating an understanding of on task/off task behaviour
was articulated by a Year seven/eight teacher (teacher D) who commented:
... occasionally using the check on and off task, and this was explained to the kids as a check for their on task behaviour and their off task behaviour, but also a time where they could make a decision about whether they were focused on the activity or there was the need to change the activity to refocus them.

Therefore, students could monitor their on task/off task behaviour, reflect on their progress, and change the activity in order to refocus. As noted in Chapter Two, Pajares (2002) states that students who develop self-regulatory strategies early on persevere and self-perpetuate. The Year zero/one teacher believed by week eight that the students understood the ‘object’ of on task/off task behaviour, inferring they had formed an understanding of the distinction between the two behaviour categories.

During the mid-study focus group discussion teachers discussed the challenge created by introducing the on task/off task check sheet. While they were aware the check was designed to help students momentarily decide if they were on task or off task at a particular time and regulate their behaviour accordingly, they were also aware it was a teacher initiated strategy and, therefore, had a certain degree of control involved. As discussed in Chapter One, in the social constructivist classroom, the teacher facilitates the learning process and learners are motivated to take control of their learning. The tool created a dilemma for the teachers as, following an inquiry-based approach to teaching, they were facilitating the use of the self-regulated learning tool but questioned whether they were still controlling the learning or whether the tool was motivating the learner to do so.

A Year seven/eight teacher (D) commented:

Even for the teacher I think it’s questioning - What is ‘on task’, what is ‘off task’? - You look at children and they are actually on task and you make a noise and all of a sudden it’s quiet. Where do you draw the line because it’s just finding the balance. You need to be monitoring as a teacher on task/off task and letting the children understand that there is a balance.
This teacher viewed the on task/off task strategy as a form of class control technique and was reflecting on its application. He was applying the ‘check’ when he perceived the students to be off task, rather than randomly applying the strategy. He was, in effect, monitoring their behaviour and the students may simply have responded to his control without genuinely considering their behaviour. Another Year seven/eight teacher (C) also described the use of this strategy as a form of teacher control:

> I noticed today a similar thing ... they had their learning logs out this morning, lots of discussion I could hear was off task, so I called out ‘check’ a bit more regularly, and after about seven minutes, after I called about four checks, there was a deathly silence and the kids noticed after a while ... 'Oh it’s so silent.' But I had taken it that they had self-regulated. I hadn’t imposed silence, they looked down, obviously saw ‘Oh my god I have got four off tasks, I had better get on task’, and it was people doing explanation writing so it was a quiet task anyway. But the room just went deathly quiet. They worked ... and I do notice I catch myself calling check much more often when I can hear off task, and then today, I was noticing they were more on task for a while, and I was calling for check as well, but, yeah, the natural thing is to call it more often when they are off task.

This teacher was describing how she used the ‘check’ a number of times over a short period as a mechanism to control off task behaviour. She stated the resulting period of silence occurred because the students were self-regulating their behaviour to stay on task. However, are students necessarily on task when it is silent in a classroom? The teacher claimed that she did not ‘impose silence’; however, the students may interpret her frequent ‘check’ call as a call for quietness and less talk. If so, the teacher was controlling the learning environment. Also, students may have been applying themselves to a task, but this may not have resulted in learning.

However, both teachers believed the strategy was encouraging students to self-regulate their learning. Were they in fact, self-regulating their behaviour in order to apply themselves to learning? The other Year seven/eight teacher (D) continued:
... With the check, it’s like you said, you would find they would curb off. As you keep saying, the difference is they are monitoring, and they look at their on task off task, and being honest with themselves. The difference for the children is they are monitoring themselves and being honest with themselves. The children are making the changes as opposed to you asking them.

The teachers, through their discussion, grappled with the contradictory nature of this strategy, that is, it is teacher directed and imposes a sense of teacher control but is designed to help students monitor and self-regulate their behaviour in order to apply themselves to learning. Specifically, the strategy was designed to help students become aware of their on task/off task behaviour and to offer them a sense of control over their learning environment. Can this strategy be applied randomly without specific notions of teacher control?

This sense of teacher control versus student control has proven to have an effect on the mastering of self-regulatory strategies. Eshel and Kohavi (2003) found that in order for students to adopt self-regulatory strategies and become independent learners, they should be given a high level of control and unnecessary teacher control should be reduced. A high level of student control is defined as opportunities for self-directed learning, while a high level of teacher control is defined as the degree of both structure and direction maintained by the teacher. The intention of this study was to examine how teachers tried to integrate self-regulating strategies and tools into an integrated inquiry learning programme that follows the four basic stages which define self-directed learning.

A Year seven/eight teacher commented in the VSR one data:

Having given the kids time to organize through the learning log, and time to look at the differences in activities. Allowing the kids also to make decisions about whether they want to be in groups or working independently, or in pairs. So matching how they want to learn. (Year seven/eight teacher – D)

The teacher was describing a tension between the individual nature of self-regulated learning and the cooperative nature of group tasks. As stated in Chapter Two, self-
regulated learners have control of their learning as they know how to plan, allocate resources, seek help, evaluate their own performance, and revise and correct their own work. However, self-regulated students, in a social constructivist setting, need to collaborate as they work to complete specific tasks and to construct meaning through discussion. In order to carry out a group task successfully, students need to use self-regulated learning skills such as planning, setting group goals, monitoring their progress, reflecting, and evaluating. The self-regulated skills students have acquired in an individuated manner need to be generalised to a co-operative group task.

The same teacher described, in the same VSR session, the classroom atmosphere, after he had provided instruction and direction, and was now allowing the students to take control of their learning:

*Carrying on I think from watching this from a teacher’s point of view it’s quite nice not to hear directions or instructions being called out across the classroom, because of what we discussed, children understanding where they are heading and what they are doing, through their goals and models, it’s more on a one-to-one basis.* (Year seven/eight teacher – D)

Importantly, Eshel and Kohavi (2003) point out that perceived control over learning appears to constitute a major determinant of both sustained self-regulation efforts and improved academic achievement. I am unsure whether the on task/off task strategy is detrimental to developing self-regulatory skills, as it could be viewed by students as unnecessary teacher control and, therefore, thwarting the achievement of its intended goal. One clear dilemma that has emerged from this study is that of using the tools as a means of teacher control, as opposed to letting the students choose to use the tools when they perceive to need them.

However, in line with social constructivist theory, students’ self-regulatory abilities originate in social interactions and only later become internalized and independently used by students (Vygotsky, 1978). This means that self-regulation needs to be taught formally or informally within the social context of the classroom, or students will continue to be controlled by external elements. From Vygotsky’s perspective, students need to have an
opportunity to be the subject of regulation, to learn to use the specific cultural tools associated to the skill, that is, the language involved in its use, and to have opportunities to practice the skill. The teachers were in effect scaffolding the students use of the tools with the intention of scaffolding students into self-regulating their learning. An interesting follow-up to this research could investigate whether, overtime, this dilemma for teachers became obsolete as the student internalized the behaviour and used the tool independently to self-regulate irrespective of the classroom environment.

4.2.5: Performance/Sharing Time

The use of performance/sharing time is a form of self- or peer-assessment intended to provide students with a wider audience for their work, and to teach students to critically examine their own and others’ work. It also aimed to provide an opportunity to revisit the learning intentions and success criteria, and to promote active learning. Some studies suggest that if carried out in a caring supportive classroom environment, it can build a strong sense of community.

The performance/sharing time strategy was used by most teachers by the end of the study. This strategy was either integrated into the classroom programme during, or at the end of a learning time. It always involved students sharing their work, a completed or partially finished task, individually or in groups. Students were encouraged to give their peers feedback about their work and their comment was usually related to the learning intention/s, success criteria of the task:

In the VSR two reflections, one Year seven/eight teacher commented on how they had used this:

*Class stopped for a performance/sharing time. They have reinforced, gone over again, what we are doing, why we are doing it, reinforced the learning intention and criteria and getting the children to show and display and talk about, so the others get the opportunity to reflect.* (Year seven/eight teacher – D)
The teacher’s observation that, ‘so others get the opportunity to reflect’, was a positive effect of this strategy. Hoover (1996) suggests, as outlined in Chapter Two, in a social constructivist classroom learning is constructed, that is, the students build new knowledge upon the foundation of previous learning, and they actively apply current understandings, note relevant elements in new learning experiences, judge the consistency of prior and emerging knowledge, and based on that judgment, modify knowledge. The teacher quoted above, was encouraging the students to bring their current understandings to the fore, and through group interaction with their peers, helped them to become explicit about their own understanding by comparing it to that of their peers. The teacher was in effect, providing time for the students to actively build new knowledge.

A Year two/three teacher also noted that:

_The other great thing about sharing time is the ideas the others get. I have found that some children, who before couldn’t think about what they wanted to do, are now starting to get ideas from other children … Sharing time is really powerful …_ (Year two/three teacher – B)

This comment is, in effect, describing students ‘scaffolding’ their learning, a term outlined in Chapter Two. As the students share their ideas and work, they integrate new information bridging what they know already and what they need to know or do in order to complete a task. The teacher used the performance/sharing time strategy to support her students and help them to discover the information they needed to successfully complete a task.

Two teachers developed systems to track who had shared their work in performance/sharing time, as some students were sharing regularly, as opposed to others who were reticent to share. It would be interesting to find out why this was happening. Was it due to a student’s lack of confidence or low self-worth? Was it related to gender balance in the classroom? Was it related to the composite nature of the classrooms, that is, two different year groups in one class?

4.2.6: Reflecting Strategies
Nearly all teachers had built a reflection time into their lesson to allow students to reflect on their learning, and with the more senior students, to develop their next learning steps. Most teachers integrated reflection activities at the end of a learning session. This reflection time often involved all or some of the following activities: goal monitoring, self-assessing against the success criteria, goal-setting, and naming next learning steps. Teachers used a variety of reflection tools, such as the chart models they had specifically developed for the lesson, or commercial teacher resources. The junior teachers (Years zero to four) tended to seat the students in the mat area and asked the students to reflect orally in small groups or to the whole class:

*Firstly, they relayed to a partner the names of the tasks they had completed for the day. Then they had to say what they had succeeded in doing, by looking at their checklists on the criteria. Finally, they had to mention their next learning step or something they had to improve on if they were to complete it again. The children then took their completed tasks back to their desks and took back their goal they had taken to their table this morning. They also reflected on their goal for the final time that day.* (Year one/two teacher, VSR two)

The senior teachers (Years five to eight) preferred individual written activities but did allow students time to share their responses. They allowed time for each individual student to reflect on their own progress and then encouraged students to share in a group situation. Sharing their reflections enabled students to gauge where they were in relation to others and to gather ideas or suggestions about learning tasks. Students could offer extra feedback to each other if appropriate. The individual written reflections offered teachers a formative assessment tool as they became aware of each student’s progress and needs.

As outlined in Chapter One, Zimmerman (1989) broadly distinguishes self-regulated learning strategies according to three phases of learning. The third is the self-reflection phase where the student is given opportunities to reflect on their progress and achievement. Teachers’ comments suggest that reflection activities can be considered as integral to developing self-regulated learners:
Performance/sharing time and reflection are a vital part of the cycle because they add meaning to the work done. (Year two/three teacher – A, final questionnaire)

Reflection provided a lesson closure type activity, not simply a recount of the activities covered, but it had multiple links as stated above. The teachers in this study had built multiple objectives into reflection time using it to help students set and monitor goals, develop next learning steps, and to self-assess their work. As Bransford et al. (1999) state, these reflection activities reinforce the idea that learners who actively monitor their learning strategies and resources are better at transferring knowledge.

The teachers’ comments highlight the integral nature of reflections, a significant element in self-regulated learning. Their use of, and thoughts on, regular reflection activities suggest how such practices can stimulate new learning.

4.2.7: Discussion of Processes Used by Teachers

The mid-study focus group discussion (week five) produced a number of comments regarding the challenges and interesting developments the teachers had encountered in the first five weeks of the study. The group interview was the first time the whole group had met since the study began. The interview was relatively unstructured, so the teachers had the opportunity to raise any issues or to seek advice. The next section discusses the challenges and interesting developments that arose.

One Year seven/eight teacher (C) noted students did not want to listen to the baroque music in the CD players, preferring their own choice of music. Personal CD players with baroque music are intended for students to use in order to enhance their learning. As described in Chapter Two, Dryden and Vos (1993) state that if information is read to the learner in time to baroque music, it floats into the subconscious and a person can learn more quickly. The teacher commented:

Some (students) don’t want to use the baroque music now, and they want their own music back; they tried it out for four weeks, and this week I have
noticed a real decline in the use of the music, and they are asking now if they can have their own.

In contrast to this teacher’s issue regarding choice of music, the other Year seven/eight teacher (D) had requested that I come into their class early in the study to discuss the strategies and tools with the students. During the focus group discussion the teacher commented:

Our principal came in and discussed the philosophy of why SRL was happening. The children were engaged through that, for example the beats per second of the baroque music, which made a lot of sense for the kids. The children were accepting of the tools…

On reflection, perhaps the first teacher needed to ensure that the students understood the intended purpose of the tool. If, however, after explaining the reason for baroque, the students still wanted to choose their own music then they could allow this and monitor the effect. Overall, the study’s main intention was to investigate how teachers can help students to develop self-regulated learning skills. Therefore, if using their own music helped the students to concentrate, then it could be viewed as a positive result.

Another issue raised by two of the teachers concerned the usefulness of the tools in different contexts. For example, when the inquiry topic was a very group-oriented, practical topic, the teachers noticed the tools were not used as much as in other situations (discussed by two teachers).

The teachers commented:

I have found that the topic is possibly a lot of hands-on group stuff … So, lots of tools in the last two weeks haven’t really been used, because it’s building with Lego or something, and you don’t really need a star or a carrel or anything … (Year seven/eight teacher – C, VSR two)

Today the children needed quite a bit of prompting to use some of the tools in comparison to earlier in the term, possibly because the MI activity today
required socialisation opportunities. So there wasn’t the same number of carrels, and headphones being used as there had been previously. (Year one/two teacher, VSR two)

The comments above could be related to a dilemma that emerged from this study, as noted above, between using the tools as a means of teacher control or letting the students choose to use the tools when they needed them. Perhaps a question to ask is: Why did the teacher feel the need to ‘prompt’ students to use them when they have ‘chosen’ not to? The teacher made a link to the type of activities the students were involved in as being the reason for non-usage; however, the main aim of the tools was for students to utilise them in order to control their learning environment, when they chose.

By contrast, a teacher commented:

This was an individual task and it was perfect for the use of all the self-regulated learning tools. We had seven carrels, two CD Players with the baroque music, timeout capsule and all the STARS being used at that time. There were combinations of STARS and carrels, and a CD player and a STAR. (Year two/three teacher – A, VSR one)

The self-regulated learning tools (carrels, STARS, CD players, timeout capsule) used in this study were more suited to individual activities as opposed to group hands-on type activities, which involve social interaction. The tools were integrated by the students into other areas, such as mathematics, reading, language times (discussed by most teachers), when the students were involved in individual tasks. Teachers’ comments included:

I have seen them (tools) transfer into other sessions, not just inquiry I have seen them used in math time, reading time, writing time, and they have been incorporated generally into just self-regulated learning completely. Doesn’t depend on what topic we are doing, the tools are still being used. (Year seven/eight teacher – C, VSR two)
The children are using the tools at other times during the school day, particularly in writing, reading and quite often in math, especially if it’s in an activity where they have to work alone (and the time capsule is getting more use than it had been). (Year one/two teacher, VSR two)

The tools were designed to help students make adjustments to environmental factors while learning. They have the primary purpose of helping students stay on task when faced with distractions and challenging situations. The teachers’ comments suggest students in this study were self-regulating their behaviour by choosing to use the tools throughout the day in order to adjust to the classroom environment and stay focused.

A Year two/three teacher (teacher A) commented during the focus group discussion that the ‘confident, clever children’ managed to get access to the tools first as they ‘booked’ them for a particular time and could read the time, when other students could not. This disadvantaged certain students, so she refined the timetabling system to ensure access was equitable.

The data suggest that the teachers reflected on and reacted to problems and challenges, refining their programmes to ensure all students were catered for. Another example of this problem, reflection, solution cycle follows.

By the middle of the study, the teachers were feeling comfortable enough to work differently with the various tools and were adapting them to different situations throughout the day. In a senior room a teacher commented that the STARS got lost on the desk amongst students’ paperwork. A Year seven/eight teacher (C) was going to investigate buying photo clips so that the STARS could be displayed more prominently. The teacher reflected on possible solutions and pragmatically developed a possible solution.

One teacher (Year seven/eight teacher - D) remarked that not all students appeared to need the tools, as they were already self-regulating their learning. Therefore, the teacher
wondered, how something like the on task/off task check might affect this group of students?

By the middle of the study, teachers were adapting the processes as evidence of their own ‘ownership’ of the strategies and tools, and their comfort level with the concepts. They had encountered a few problems, but they came up with clever solutions when trying to work with the tools or through the stages of the learning cycle with their students. This supports the use of action research as a model for teachers’ professional development because it allows teachers to solve practical problems systematically and collaboratively and improve their teaching practice. For example, the Year five/six teacher had adapted the class routines to suit goal-setting times. The teacher commented:

*I noticed, because I had structured the day and we were writing our goals after interval, that they were so keen to get into their independent tasks, I had to pull them back to their desks and get their goals books out and to start writing their goals in there. I felt like I was stopping them ... I found before interval if we get our goal books out and write just before we go to interval ... so I realise I needed to make that quite structured and had to put it into a time of day where it was appropriate for the kids, because they are just so keen to go and get stuck into things and they were all behind carrels ...*

After the teacher had restructured the timetable, the students independently set goals, applied themselves to set tasks, and reflected on their progress at the end of the session. The teacher’s comments indicate that integrating self-regulating strategies, such as setting goals, monitoring goals, sharing the learning intentions, and reflecting may require a time component to be considered by the teacher.

The Year five/six teacher noticed that during performance/sharing time, particular boys were frequently involved in group tasks, and wondered how often they worked individually on a task. The students were given a sheet which contained a variety of Multiple Intelligence activities on a grid (refer Chapter One) and the teacher was concerned that some boys were choosing the interpersonal activities as opposed to the more intrapersonal ones. The teacher developed a tracking system on the front of their
learning logs in order to monitor when and with whom they shared their work. A Year seven/eight teacher (C) developed a similar tracking system, also in the students’ learning logs, to monitor which students were sharing their work. This teacher felt that some students were more reluctant to share and she or he wanted to encourage them to do so. By monitoring performance/sharing time both teachers were be able to gather valuable information about their students.

The mid-study focus group discussion fulfilled an important aspect of the action research cycle in that it enabled the teachers to report on the strategies that they had trialed and to reflect together on what was working and what was not. The process of the focus group discussion allowed them to explore issues, generate their own questions and still pursue their own priorities, and to co-construct meaning. The teachers were encouraged to talk to one another, to ask questions, exchange anecdotes, and to comment on each other’s experiences and points of view. If they had not had this opportunity, they would not have been able to share ideas and resources, to discuss refinements they had made, or generally voice how the integration of the self-regulated strategies and tools was developing. They would not have received this level of support and encouragement from their colleagues.

The ability to form deeper understandings and produce new knowledge and ideas around self-regulated learning was empowering for us all. In hindsight, I did not have this opportunity when I initially trialed the strategies and tools a number of years before, and I felt envious listening to the teachers’ valuable collaborative collegial discussion.

4.3: Summary of the Main Themes Emerging from Research Question One

Further analysis of the above findings suggests the following main themes which teachers in the study thought were important:
• it is important to carefully and clearly introduce the strategies and tools; to model their application; to adapt them to suit the age of the students; to provide opportunities for students to trial using them; and to regularly allow time to reflect on their use and benefits, which will encourage student ownership of the strategies and tools, as they realize the benefits and utilise them with effect

• students, of all age levels, need to form an understanding of the use, application, and possible benefits of the self-regulated learning strategies and tools before they begin utilising them;

• students should be encouraged to monitor their goals frequently, both orally and in written form;

• student ownership of goal-setting needs to be encouraged: teachers need to model and guide the process, allowing students to progress from setting general goals to more specific meaningful goals, over a period of time;

• learning intentions and success criteria need to be presented clearly and revisited frequently so that students have opportunities to reflect on their progress and to develop their next learning steps;

• the on task/off task check sheet posed a dilemma for some teachers concerning teacher control versus student control;

• reflection activities had multiple applications in a self-regulated learning environment.

The first part of the chapter presented an analysis of data in relation to how the teachers in the study integrated self-regulated learning strategies and tools into their teaching in order to develop students’ self-regulating behaviours. Teachers discussed the challenges, both practical and philosophical, that they encountered as they integrated the strategies and tools over a ten-week period. They perceived the value of particular strategies and provided practical ideas and advice. They offered insight into the integration of the strategies and tools over a wide range of levels, from years zero to eight. The next part of the chapter presents an analysis of data in relation to research question two.
4.4: Research Question Two: How can self-regulated learning strategies be introduced to the learner at particular phases of Zimmerman’s Cycle of Learning?

In this section I use Zimmerman’s Cycle of Learning to analyse the teachers’ comments as it provided a very useful framework by which to make sense of the teachers’ discussions.

At the professional development session held at the very beginning of the study, I introduced the teachers to Zimmerman’s Self-Regulated Cycle of Learning (1989, 2002). This, as I have mentioned, was a particularly useful model for me. My knowledge of Zimmerman’s work enabled me to think through various stages that teachers needed to know about and utilise to help their students. In the activity that followed my discussion of Zimmerman’s Cycle, I asked the teachers to compare his concepts to their own understanding of a cycle of learning. In keeping with social constructivist theories (e.g., Vygotsky, 1978) that underpin this study, I asked the teachers to draw on their prior knowledge and understandings regarding a cycle of learning in order to actively involve them in meaning and knowledge construction. The teachers were set a task to describe, using a visual tool, what they perceived as a cycle of learning.

Next, Zimmerman’s Cycle of Learning was presented as a PowerPoint slide (refer Folio Section Three, Part A), briefly and graphically. There was very little discussion and no questions were asked about the Cycle. Following this brief explanation, the teachers were asked to compare Zimmerman’s Cycle with their own, noting any similarities and differences. The teachers shared their comparisons to the whole group; however, their responses were not documented. In keeping with constructivist learning theory, I asked the teachers to make sense of something on their own with the teacher (myself) as a guide to help them along the way. Their prior knowledge would impact on and help form any new understandings regarding the cycle of learning.

The teachers’ exposure to Zimmerman’s Cycle of Learning was, therefore, brief. As the teachers were already familiar with a cycle of learning, I contend that introducing
Zimmerman’s Cycle of Learning may have been unnecessary. What the teachers appeared to benefit from more was a sound understanding of the strategies and tools and their applicability. It should be noted that within the data none of the teachers referred to Zimmerman’s Cycle of Learning at any point during the study, except to respond to a question in the final questionnaire.

Nevertheless, there were specific examples that teachers used which, from a researcher’s perspective, did appear to exemplify the stages. The VSR one and two data were analysed to ascertain how the teachers were introducing specific strategies and tools to the learner at particular phases of Zimmerman’s Cycle of Learning.

As outlined in Chapter Two, Zimmerman (1989, 2002) broadly distinguishes self-regulated learning strategies according to three phases of learning: the *forethought phase*, the *performance phase*, and the *self-reflection phase*.

The *forethought phase* is where the student utilises goal-setting and planning strategies. Through my analysis of the data, it became clear that teachers shared the learning intentions and developed success criteria with students, referred to appropriate models/exemplars, and helped students to set goals. They also reminded students about the availability of the tools designed to help them concentrate and stay on task. The teachers’ comments suggest students knew what they were expected to do, how to go about the task/s, and what the task would look like when it was completed. The students set goals focused on the learning intentions. They were able to choose a suitable tool to help them and could refer to models for guidance.

These strategies can be viewed as motivational strategies (Boekaerts and Cascallar, 2006). As the learners are able to initiate activities that set the scene for learning, they can assign value to the learning activity as they are aware of what needs to be accomplished. They are then able to motivate themselves to actually get started on learning tasks and assignments having tools available to help them sustain effort until the task is completed. It could be contended that the teachers were providing an environment which would
encourage the learner to take action and begin the learning process. Zimmerman (2002) terms this ‘task analysis’, whereby the students set goals and strategically plan their learning. He claims there is considerable evidence of increased academic success by learners who set goals and plan to use specific strategies to undertake a task.

By providing models/exemplars, the teachers’ aim was to enable students to analyse the task and plan which strategies to use to complete the task – key processes of Zimmerman’s *forethought stage*. The following comment shows that the teacher instructed the students on the model giving the students appropriate resources and practice in order to scaffold the learners to carry out the task:

*I have drawn similar symbols up on the board again to show them a model. The day before we went through, step by step, how to draw these symbols and they were up on the board and the children had to copy those into their books. The idea behind it was when they come to draw their circuits today, which they will be doing shortly; it will give them a model to refer to.* (Year four teacher, VSR one)

Schunk and Pajares (2002) suggest that when students are exposed to displayed models, (which all the teachers in this study had done), students believe that if they follow the same sequence of steps, they too will be successful. In this study, the students set individual goals, although the goals were general and not individual or specific until week eight/nine. Schunk and Pajares (2002) claim that when students set goals that are specific, short-term, and viewed as challenging but attainable their self-efficacy is enhanced. Zimmerman (2002) states that self-motivation beliefs are a key component influencing the *forethought phase* processes. In this study, as the comments presented earlier suggest, the teachers valued goal-setting as they recognised it impacted positively on student motivation and self-regulation development. Together, these strategies may help students to self-regulate and motivate them to continue the learning cycle.

During the *performance phase* of Zimmerman’s Cycle, the student deploys the previous phase strategies and utilises attention-focusing and specific task strategies. As detailed throughout this chapter, the VSR one and two data showed that teachers integrated goal-
monitoring strategies, on task/off task checks, and referred students to models/exemplars for guidance, in the *performance phase* of learning (during the lesson). The teachers allowed students to utilise the tools developing timetables and ensuring access to the tools was equitable. According to this study, these strategies were intended to keep students on task, to help them reflect on their progress towards achieving their goal, and to help them gauge their progress towards achieving what was required, by referring to an explicit model/exemplar. The work of Schunk and Pajares (2002) supports this idea stating that as students work on tasks, they compare their progress against their goals. From the teachers’ comments, it could be perceived that when combined the *performance phase strategies* help students to self-regulate their learning and motivate them to continue the learning cycle, as opposed to feeling frustrated, confused, and off task.

During the *self-reflection phase* of Zimmerman’s Cycle, students are able to reflect on their progress and achievement, and attribute success or failure to specific strategies employed. In this study, the teachers integrated a number of reflection strategies in order to help students self-evaluate and develop next learning steps. Students reflected on their goal/s, set new goals, and often made comment on why they had/had not achieved their goal. They self-assessed and peer-assessed their progress towards achieving the learning intention/s and used the success criteria to gauge their level of achievement. The students shared their work and ideas, offering feedback connected to specific learning intentions to their peers. Teachers in this study perceived that the strategies had enabled their students to reflect on themselves as learners and empowered them to continue the learning cycle.

As stated earlier, I introduced Zimmerman’s Cycle of Learning at the professional development sessions at the very beginning of the study. Therefore, the teachers were aware of how to integrate the strategies and tools into a cycle of learning, but not necessarily Zimmerman’s Cycle. Data from the final questionnaire correlate with this thinking.
Question seven of the final questionnaire asked: *Do you think self-regulated learning strategies and tools should be introduced to the learner at particular phases of Zimmerman’s learning cycle? If yes, how? If no, why?*

Five out of the eight teachers responded to this question. One teacher believed the self-regulated learning strategies and tools could be introduced at any stage of the learning cycle, while another teacher liked the way the study linked the strategies and tools to each part of the cycle of self-regulated learning and felt that was a sequential and effective way to ‘carry them out’.

Two teachers answered the question from a global perspective, stating that the beginning of the year or a term was an effective time to introduce the strategies and both agreed the tools should be used at any time of the school day.

During an informal discussion with all teachers (individually), after the completion of the study, the teachers commented that they felt they could not answer the question adequately, as they could not remember what Zimmerman’s Cycle of Learning consisted of. I wondered how significant this was.

**4.5: Summary of the Main Themes Emerging from Research Question**

Two

After further analysis of the above findings, the following main themes emerged:

- The teachers were familiar with *a* cycle of learning before the study began therefore introducing Zimmerman’s Self-Regulated Cycle of Learning was unnecessary.

- The data provided specific examples of teachers using specific strategies, at particular phases of a learning cycle, which can be co-related to each phase of Zimmerman’s Cycle of Learning.

The teachers introduced the strategies and tools in different ways to suit the different age groups or class levels and their own particular pedagogical approach. The integration of specific strategies at each phase of the learning cycle did not appear to be a concern for
the teachers; they integrated the strategies and tools when and where they perceived them to be appropriate. The teachers may have viewed the practice of integrating the self-regulating strategies as more important than the theory.

The next chapter presents the analysis of data in relation to research question three: How do different groups of children develop self-regulated learning strategies?
CHAPTER 5: Data Presentation and Emergent Themes:
Question Three

5.1: Research Question Three: How do different groups of children develop self-regulated learning strategies?

As outlined in Chapter Two, self-regulation studies have mostly involved students in the upper-elementary grades through to college. I have explored a relatively untapped perspective by focusing on younger students than the age group often found in the literature. However, the sample is small, and, therefore no generalization of the findings is possible. This study focuses on the teachers’ perspectives and what they believed occurred with regard to categories of student difference. I was interested to consider, along with age, if there were gender differences in how students responded to the integration of self-regulated learning strategies and tools. As discussed in the Introduction to the Folio (Section One), I developed the tools while teaching a year five/six class at Macandrew Bay School, utilising the MI approach to learning. The class included seventeen boys and five girls and, after a period of time, I observed that the boys, in particular, benefited from this multi-modal approach to learning. However, I doubted their ability to stay on task in such an interactive learning environment. This led to my interest in the development of strategies and tools to help boys, in particular, to learn and stay on task.

Over the past five years in New Zealand, there has been considerable interest, and concern, and questions have been raised about the quality and outcomes of education for boys. Conferences such as ‘Challenging Boys’, held biennially at Massey University, educationalists like Dr Paul Baker, Celia Lashlie, Joseph Driessen, and Dr Pita Sharples, and Ministry of Education Reference Groups, have explored and debated issues surrounding boy’s education. For this reason, I was interested to find out whether specific self-regulated strategies and tools might help some boys, in particular.
5.2 Data Related to Gender

It is important to restate that I am reporting on the teachers’ perspectives of the boys’ and girls’ responses. Of course, teachers also can hold particular beliefs about ‘correct’ gender behaviours, and, therefore, what they report is on the basis of their observations. I consider their observations worthwhile, quite possibly insightful, but they are not able to be generalised.

Analysis of the data suggests that the senior class teachers believed some girls were more specific when setting goals, more focused on the learning intentions, and referred back to the success criteria more often than boys. The teachers commented:

... girls particularly like the goal-setting, concentrating ... I think they have become more focused on what they need to work on ... and they are actually getting a lot better at talking to each other about what their goals are and what they want to achieve. (Year five/six teacher)

I have noticed the girls are more pedantic and particular about making sure that they are meeting the success criteria and they will go and refine and reshape their work from here by going back and looking at the intentions on the wall. (Year seven/eight teacher – C)

The teachers’ comments with regard to differences between girls and boys are in keeping with other research that has explored the relationship between self-regulated learning and gender (Dresel and Haugwitz, 2005; Pajares, 2002; Zimmerman and Martinez-Pons, 1990). Pajares (2002) found that girls displayed more goal-setting and planning strategies adding that they kept records and self-monitored more frequently than did boys. Therefore, one could speculate, do some girls prefer particular self-regulated learning strategies? Teachers’ comments in this study indicate that some girls prefer strategies that help them focus on what they are expected to do and how to achieve a certain standard. This assertion can be linked to other research, for example, Dresel and Haugwitz, (2005)
who found that girls in their study, as in earlier studies, reported an overall more frequent use of self-regulation strategies, such as goal-setting, monitoring, and evaluating. The data reinforce the research of Zimmerman and Martinez-Pons (1990) who found that girls reported more frequent use of strategies that optimise the immediate environment or personal regulation.

Two junior class teachers in this study noted that some girls took on the new self-regulated learning strategies and tools more quickly than others. This reinforces Zimmerman and Martinez-Pons’s findings that some girls prefer strategies that optimise the immediate environment:

I’ve found the girls in the class were the first to take on the new ideas with the boys following in their wake. (Year two/three teacher – B)

Girls caught on to the tools really quickly and were enthusiastic ...

(Year four teacher)

By contrast, some teachers’ comments indicated that some boys were focused on their preference for particular tools, especially the CD players and timeout capsule:

The boys have enjoyed the music and tend to use the CD players more than the girls do. (Year two/three teacher – B)

The boys were quite slow at picking up (choosing to work in) a carrel, preferring to use the CD players and personal headphones. Boys also used the timeout capsule regularly. (Year four teacher)

The boys dominate the timeout capsule though when they do need something done. (Year seven/eight teacher - C)

When considering the comment above from the Year seven/eight teacher, does she mean the boys take over the timeout capsule and do not give the girls a chance? Or, that the
boys choose to use the capsule more often than the girls? And if they need to use it, is that ‘dominating’? It seems to me that this is an example of a teacher’s interpretation of gender behaviours.

The self-regulated learning tools (carrels, STARS, timeout capsule, CD players) had originated from my own teaching experience and, as stated earlier, were originally intended for boys. Therefore, any assumptions I made at that time regarding how students learn, were influenced by the gender imbalance.

Teachers’ comments linked the use of the tools to the boys need for nil distractions and their need to concentrate:

*I have found that the boys in my class use the carrels more than the girls, maybe because the girls are able to work with other children alongside them whereas the boys require work places with fewer distractions.* (Year zero/one teacher)

*The boys definitely benefit more from the tools. Even though they may not use them as much as the girls, you definitely can see that they are more focused compared with perhaps if they didn’t have the tools.* (Year four teacher)

The teachers perceived that there was a higher use of strategies by girls and a greater dependence on the tools by some boys. From their observations, they inferred that the use of the tools benefited the immediate needs of some boys, who were focused on achieving short-term performance goals, and the use of strategies (such as goal-setting, monitoring, planning, evaluating) benefited some girls, who were more focused on longer-term mastery goals.

Niemivirta (1997) adds to this perspective on the benefits of using tools rather than strategies for boys, when he states that boys were significantly more inclined to performance goals and surface strategy use, inferring that boys have a more outcomes-focused approach to learning. Tools such as the timeout capsule and CD player were
designed to allow a student to choose a particular tool that would enable them to concentrate, ‘buckle down’, and complete a set task within a time frame. This viewpoint is shared by Irwin (2002), who states boys learn better if they are given a set goal to achieve in a set time, and the lesson is broken down into chunks of time.

Grant (2005) explains this concept further, stating that learners’ goal orientations affect how a student approaches a task; that is, learners with mastery goals will be oriented towards developing new skills, understanding their work, improving their level of competency, and achieving a personal sense of mastery. Learners with performance goals tend to focus on ability and self-worth and try to outperform others. Therefore, mastery goals should be encouraged as they promote deeper learning and self-improvement. Upon reflection, the question to ask is whether regular practice forming mastery type goals, as opposed to performance type goals, from an early age, help boys to become more strategy oriented? More research is required focused around this issue.

5.3: Data Related to Other Groups of Students

There were very few comments related to other groups of students, such as ethnic or behavioural differences. One teacher commented on a Maori student, in relation to the self-regulated learning environment evident in their classroom:

My one Maori boy finds it incredibly empowering because he finds the necessity for him to be distractive isn’t there. He just enjoys the climate because it’s a nice, safe, secure, and non-threatening environment where he just gets on, with nothing to distract him. (Year seven/eight teacher - D)

The teacher perceived that the Maori boy was normally easily distracted, however, the self-regulated learning environment was making him feel more confident and in control. The teacher believed they had provided a secure, well-managed learning environment obviously suited to this Maori student. There is too little data in this study to enlarge on this observation, although it accords with the work of Bishop, Berryman, Tiakiwai and Richardson (2007) who suggest that a secure, well-managed classroom environment, as provided through this study, offers a culturally-appropriate and responsive context for learning for Maori students.
During the mid-study focus group discussion, a teacher described the benefits of self-regulated learning for one particular type of student:

As far as the different groups of children go, I would have to say that one of my more flighty children has taken to the baroque music and using the earphones. It has completely flattened them out, I don’t know whether that fits boys, girls, or Maori, I don’t know. (Year seven/eight teacher - D)

This teacher was then asked to explain the terms ‘flighty child’ and ‘flattened them out’. The teacher described the ‘flighty child’ as ‘hyperactive, loud, antagonistic, aggressive’ and ‘flattened them out’ as becoming ‘sedate, calm, reclining, working’. The teacher attributed this change in behaviour to the use of the CD player with baroque music, one of the self-regulating learning tools used in the study. As stated in Chapter One, music helps students relax, it activates the right-brain to receive new information, and it helps move the information into long-term memory-storage. Daley and Ward (1993) continue this theme:

Research into brain function has provided some answers as to how music expands our abilities. When we relax and listen to one-beat-per-second music, our brains go into a type of resonance and emit a greater proportion of alpha and theta brainwaves. In this state we become amazingly receptive and learning can occur rapidly... It has been shown, in a wide range of situations, that string music from the baroque period is good for enhancing learning. (p. 27)

Therefore, the observations made by the teacher above, with regard to the impact of music on the ‘flighty child’, may make sense in terms of the research. Alternatively, perhaps, any music might have affected the student as positively; however, without further research, it can only be stated that, in this case, the baroque composition did appear, to the teacher, to make a difference in the student’s behaviour. This learning tool helped the student to become calm and to focus on the work, as intended. Further
research could be centred on how beneficial listening to Baroque music could be to young students’ learning.

5.4: Data Related to Particular Year Levels – Two Case Studies

The following two case studies examine the experiences of two teachers who participated in this study. I have chosen to present these as case studies in order to reveal the different approaches and challenges faced by a junior teacher (Year zero to one), in contrast to a senior teacher (Year seven to eight). The meta-narratives highlight the very different challenges and issues related to integrating self-regulated learning strategies and tools at their particular level, and, hopefully, will provide other teachers with valuable insights and ideas. The data presented in the two case studies form a stark contrast. Data from the junior class teacher were what I would term ‘technically descriptive’, that is, a recount of a practical problems followed by a description of the solutions. The teacher included very few comments which revealed her thinking. Data from the senior class teacher, however, provided more detailed description of his reflections, questions, and conclusions. The senior class teacher case study is an example of what I think action research and VSR, as a method within action research, do very well, they allowed self-reflective inquiry and deeper understandings to emerge. Action Research and VSR work to produce new knowledge among practitioners, and together they create a powerful form of professional development.

5.5: Case Study One – a Year Seven/Eight Classroom Teacher (Male)

The teacher in the first case study was an experienced teacher having taught for eight years. He taught a composite Year seven and eight class where students’ ages ranged from 11 to 13 years. There were 25 students in the class. The teacher commented that being a participant in this study allowed him the opportunity to question his delivery and approach to the curriculum, and, what a conducive working classroom environment was. During the mid-study focus group discussion he commented:

At times I think the class is completely silent, which is fantastic but in that, it does not necessarily mean on task behaviour. I am still trying to figure out
what on task/off task feeling I want in my classroom. The question being –
what are my own expectations? These children are still trying to figure out
what it is when they are busy, or when it is a chaotic noise. I don’t know, and
it is that which I find a challenge, or a barrier, for me. It’s a challenge
because I am yet to find out what is a busy noise. Questioning the
expectations of my own learning environment.

This teacher was reflecting on the meaning of on task/off task behaviours, and its
application to his classroom, what he expected as far as noise levels were concerned, and
how all these things shaped the learning environment. Hatton and Smith (1995) claim
reflection may be seen as an active and deliberative cognitive process, involving
sequences of interconnected ideas which take account of underlying beliefs and
knowledge. Reflective thinking helps teachers to solve practical problems, allowing for
doubt and perplexity before possible solutions are reached.

By week ten the teacher commented positively on this experience and revealed how this
reflection went deeper as he questioned his own teaching principles:

Aspects such as on-task/off-task behaviours become extremely relevant and
make you question your own principles about what makes a busy, productive
learning atmosphere. This has been good for me as it makes you question
your environment, instruction and expectations. (final questionnaire, week
ten)

As Noffke and Brennan (1988) state, reflective action is bound up with persistent and
careful consideration of practice in the light of knowledge and beliefs, showing attitudes
of open-mindedness, responsibility, and wholeheartedness.

Other comments in the final questionnaire indicated how the teacher grappled with the
‘philosophy’ of self-regulated learning and his role in integrating the strategies and tools:

There have been times where I feel I have imposed the strategies, which is
working in complete contrast to the philosophy (the children should ideally
be making that decision). This has been mainly to do with using the tactile
tools (carrels). The students are very aware of the benefits and can clearly articulate why the strategies and tools are used. Given time and with continuity I can see the children will benefit greatly from the introduction of SRL.

The teacher described this contradictory situation. He also commented on how the strategies and tools impacted on his role as a teacher:

Having just said about being able to float around the classroom and actively talk to children about their work it has been made easier due to sharing the intentions and the exemplars and models ... from a teacher’s point of view, it’s quite nice not to hear directions or instructions being called out across the classroom because of what we discussed - children understanding where they are heading and what they are doing through their goals and models. (VSR two)

By providing instrumental support, the teacher was helping to ensure that the students acquired the appropriate knowledge to operate independently, helping them to make appropriate choices, and encouraging them to evaluate their own progress. It could be considered that the teacher was guiding the students rather than directing their learning. His role could be viewed as a facilitator ensuring he had more time to support individual student’s needs. Perry (1998) endorses this facilitation role of the teacher suggesting that self-regulated learning is more likely to develop when teachers guide rather than direct students’ learning, acting as facilitators rather than managers.

The teacher saw value in this new approach to learning, commenting:

The use of the SRL tools has allowed children to make choices about their own learning with the benefit of working towards their own understanding of how they learn best. This reinforces them as a learner and promotes the child’s learning over traditional instruction. (final questionnaire)

However, he continued:
The study has certainly made me question my delivery and approach to delivering curriculum. I believe it has focused me in on the intentions of learning and the skills needed to be a successful learner. For me, put simply, the context over the content. (final questionnaire)

The teacher’s final comment, “For me, put simply, the context over the content”, is a powerful example of teacher reflection and knowledge production. Participating in this action research study had encouraged him to critically reflect and produce new pedagogical knowledge, rather than just helping him to acquire new skills and strategies. The teacher had systematically reflected on his actions, and the effects of these actions in the classroom. This had actively engaged him in the process and helped him to improve his practice.

Murdoch and Wilson (2006) report that many teachers describe their greatest challenge in nurturing independence in students, as their own struggle to ‘let go’. They describe it as letting go of the way teachers traditionally see their role as teachers and the extent to which they tend to do so much of the thinking for their students (Murdoch and Wilson, 2006, p. 2). The teacher’s comment above provides a picture of students assuming some responsibility for their learning. Murdoch and Wilson state that when teachers reposition their roles in this way, they are often surprised by what their students can do independently.

However, the teacher’s comments in this study suggest this change in role can appear alien to students, as it may not be what they are accustomed to:

... the only hindrance I have felt during this trial has been unpacking older children’s expectations of what a teacher should be. The tools all lend themselves to creating a more reflective, independent child who can articulate the best way they learn ... The more intrinsic the philosophy becomes, the greater the rewards will be for the child. I have felt the tools have aided many children that dislike the traditional methods of schooling (behavioural in particular), as they appear to be aware that these tools are
Therefore, it could be questioned whether younger students would accept the changing role of the teacher more easily. The teacher stated that if students had the opportunity to develop self-regulated strategies from an early age, they would not have to struggle with this new teaching and learning approach. I support this thinking, and researchers such as Joyce and Hipkins (2004) have a similar viewpoint.

During the ten-week journey, this teacher faced multiple pedagogical challenges: he reflected on his role as a teacher, faced issues of teacher control versus student control, reflected on the philosophy underpinning self-regulated learning, and grappled with what a conducive learning environment might look like.

The VSR one data (week two) show the teacher had made clear links between the use of the strategies and tools to developing a ‘respectful’ classroom environment:

> Looking at the video, the value of the tools for me is to see a group of four or five children standing discussing a camera and a set of photos, doing it in a mature way, for example, they are not disrupting, they are not being loud, not being overly smart, they are just doing it in a respectful way. And it has dawned on me using the tools through the environment and the atmosphere the children are really respecting what’s going on ... children are respecting other’s space and other’s needs, children still walking around with cameras and asking to photograph work and take pictures for a PowerPoint, and just the general respect from the class appears to be really good.

The teacher stated the tools had enabled a ‘respectful environment’ to develop where students could undertake a variety of tasks without distracting others. Through watching his classroom on video, he was able to gain a picture of the classroom climate and associate this with the integration and utilisation of the tools. His comments reveal this was a valuable reflective process for him.
As stated above, when providing a conducive classroom environment and integrating the self-regulated strategies and tools the teacher’s role may change from director to facilitator. This, in turn, may impact on how the students learn by moving them from direct teaching experiences to more independent learning experiences, offering them choice and variety. This created a challenge for the teacher as many of the students preferred the direct teaching that they had experienced over the past six years of their schooling. The teacher commented:

*With the older children, I have at times battled unpacking children’s prior expectations of how a classroom should work. This has to do with time management strategies, creating purposeful and relevant goals, and completing tasks when a raft of tasks have been given. Some children have preferred the directed style where time limits and demonstration are prerequisites for success ... Probably the hardest part of this trial has been reinforcing philosophy to children, they are having to re-direct prior learning experiences (traditional teaching into a more holistic approach). I can see that the benefits of children developing skills from an early age would counter this confusion.*

The senior class teacher’s perception was that the strategies and tools would lend themselves to creating a more reflective, independent child who could articulate how they learn best. The teacher also perceived that the more intrinsic the philosophy of self-regulated learning was then the rewards for the students would be greater. It may be argued, then, that the more conscious of the learning environment the student is, then the more they will make it work for them. Corno (1992) reiterates this point and adds that this conscious, insightful view of the learning environment, and deliberate practice in utilising it, eventually results in automaticity of self-regulatory actions.

The case study teacher had, as Schon (1983, 1987) clearly writes, framed and reframed the often complex and ambiguous problems he was facing, testing out various interpretations, and then modifying his thinking and actions as a result. The teacher’s comments suggest that he had undergone demanding rational and moral processes in
making reasoned judgments about the classroom intervention he was trialing. It appears that the challenging experience had led him to reflect ethically on his classroom practice and to develop meaningful conclusions.

5.6: Case Study Two – a Year Zero to One Classroom Teacher (Female)

The teacher in the second case study was an experienced classroom teacher having taught for over 33 years. This teacher taught a new entrant class, that is, students in their first year of school. There were 19 students in the class and another six students entered the class during the time of the study, as they turned five years of age.

As stated earlier in the chapter, the junior class teacher data offered a more prosaic reportage, focusing more on what was going on and what the teacher did, as opposed to the more detailed reflective data of the senior class teacher in the previous case study. A question to ask is, why was this so? If the action research process provided the opportunity and encouraged the senior class teacher to deeply reflect on his own assumptions, beliefs, and teaching philosophy, why did the junior class teacher data not provide instances of deep reflection also? The data provided by the junior class teacher may reflect the *technical* mode of action research which does not embrace all of the *participatory practical* action research principles, such as empowerment and social change, which were evident in this study.

As noted in Chapter Three, genuine collaboration should reflect a shared interpretation of data and deeper understandings; therefore, consideration must also be given to the data gathering methods. The mid-study focus group discussion may not have ‘empowered’ the teacher or allowed her to become an active part of the process of analysis and to reflect deeply on any challenges she may have had. As outlined in Chapter Three, during the
VSR sessions, I strove to employ ‘best practice’ interviewer techniques to elicit reconstructing and to encourage the elaboration of ideas. However, on reflection, I may have sought less reconstructing and elaboration from the junior class teacher compared to the senior class teacher. This indicates a very interesting dimension that will need to be addressed if teachers are to be supported in reflecting deeply in order to improve practice. The focus group discussion and the VSR data gathering methods may not suit all teachers and therefore may not be the best data gathering methods to use in action research studies. After considering these issues, I present the junior class teacher’s data which provide interesting insight into how she developed new ideas and strategies due to her age cohort of students.

The teacher commented that being a participant in this study allowed her the opportunity to specifically focus on developing self-regulated learning skills and to assess their value in a new entrant classroom. Further comments made in the final questionnaire, provide insight into how she perceived the study had impacted on her students:

*I have been amazed how Year zero to one children have accepted the implementation of SRL tools and strategies. One term after the tools were introduced, they (the children) are still keen to select their goals every day, talk about them, and reflect on goal achievement at the end of the session/day. Children are more aware of what they are learning and how they will achieve it (or what it looks like if achieved), as we discuss this as a class or group. They understand the word ‘achieve’. They all enjoy sharing their work in performance/sharing time, giving others in the class feedback about their work.*

The teacher enthusiastically described how the five-year old students in her class utilised and implemented the self-regulating strategies and tools. After only ten weeks, she stated the students were still ‘keen’ to set and monitor goals, were now more aware of what they were learning and how to achieve, and took part in a basic form of peer-assessment. This assertion correlates with the findings of Palmer and Wehmeyer (2003) who reported that students as young as five years of age are able to goal-set with the support of teachers. They note that active student involvement in the educational process, as in the Year zero
to one class in this study, can assist students in evaluating their own progress and potential outcomes.

The teacher’s comments in the final questionnaire, describe what she perceived as benefits from integrating these strategies and tools at a young age, and over a short span of time:

They understand ‘staying on task’ and select SRL tool/s to achieve it. Some children (especially boys) have said that SRL tools help them to think of ideas because they prefer working in a quiet learning environment. New children have quickly learnt what and how to use the tools. Children still interested in daily goal-setting, so I will modify this approach with older children and maybe select a weekly goal related to a curriculum need, for example, using punctuation.

The teacher associated the students’ utilisation of the tools with staying on task and concentrating, and commented how easily new students utilise the tools. These observations could be attributed to the teacher’s enthusiasm and specific understanding related to the tools.

All the self-regulated learning aspects the teacher described can be viewed as elemental aspects of self-regulated learning, and, through participation in the study it was revealed that the teacher supported the students both academically and socially to develop these nascent skills. In general, there is very little research which has positively identified the ability of young students to self-regulate. Studies by Zimmerman and Kinsantas (1997), however, and, more recently, Joyce and Hipkins (2004), also conclude that young students, with support, begin taking responsibility for their own learning. As Joyce and Hipkins point out, the degree to which the students take some responsibility would vary in sophistication and consistency. This is confirmed by the teacher’s comments in the final questionnaire:

Even young children can take ownership of their own learning by talking, at their level, about what they are learning and how they will achieve it. It is
important that they begin to understand and use the ‘learning’ vocabulary, such as setting goals, achieving goals, reflection etc. This will be further developed at the next age level. All children in the class, at every ability level, can use the SRL tools and strategies.

By the end of the study, it appeared that the teacher had formed a positive and clear viewpoint regarding young students’ ability to utilise self-regulating strategies and tools. Her comments suggest the study was a positive experience both for her and her students. The teacher had the opportunity to reflect on her practices in order to develop deeper understandings and refine her pedagogical approaches. In the process, she integrated particular strategies and tools, in a particular manner, which she perceived had benefited her students, enabling them to develop self-regulating skills and enhance their learning.

How then did this teacher support students to utilise the strategies and tools in her classroom? The VSR one and two data show that she did this through integrating the following activities:

5.6.1: Setting and Monitoring Goals

The teacher described the process she had devised to help her students form beginning understandings regarding goal-setting and monitoring:

The children have already selected their goals. When they come into school in the morning they choose their goals from the goals on the wall, that are colour-coded. They know to mark it on the chart according to which goal they have chosen for that day. Then they take them to their tables and attach them to the velcro. They are asked to look at their goal, make sure they know what it says, and come back to the meeting place to share the goals together ... At this stage, just checking to see if the children can read their goals and understand their goals and what they have to do to achieve that goal. (VSR one data)

The teacher simplified activities in order to suit the age of the students. This had created particular challenges, especially in the area of goal-setting. The teacher devised a sophisticated system in order for her young students to be able to choose a goal and
understand its intention, even though they may have been emergent readers. The teacher
began by selecting goals that were appropriate for their age:

_I selected goals that were appropriate for their age so they were able to read
them and share them with each other. They have to understand what that goal
means and know what it is they might have to do to achieve that. (for
example, ‘I will share my work today’)_

Then she devised a colour-coded system:

_I found goal-setting difficult with new entrant children (five years old) so I
made up a chart with their names on a grid. When they come into school in
the morning, they mark off the goal they have chosen and take the selected
goal and Velcro it to their table. Some of the children couldn’t read the goals,
so I colour-coded them. Now they are actually recognising their goal from
the colour, and saying that’s my goal and so are making appropriate
connections. Then they take them to their tables and attach them to the
velcro. They are asked to look at their goal, make sure they know what it
says, and come back to the meeting place to share the goals together. (mid-
study focus group discussion, week five)_

By week five of the study, the teacher had devised a very specific system suitable for new
entrant students. In the final questionnaire (week ten), she revealed that she was ready to
review and refine the system further in order to cater for the older students in the class:

_The children are still interested in daily goal-setting. I will modify this
approach with older children and maybe select a weekly goal related to a
curriculum need, for example, using punctuation._

The teacher encouraged the students to reflect back on their goals and to self-assess
whether they had achieved these or not.

_Talking about goals at the beginning of day when they come into school, and
now I am just going through the grid, checking that they all have a goal for
the day and they understand how they are going to achieve that goal. (VSR two data)

Checking for understanding appeared to be a main aim for this teacher as the following section shows.

5.6.2: Sharing the Learning Intentions and Success Criteria

At this stage, we are sharing the learning intentions that we have been working on during the previous few days and making sure the children understand what we have written, and also how we are going to see that we have achieved that learning intention. (VSR one)

Next step is to re-read the learning intentions. We read these on Monday when we started working on the Marvelous Toy song, and I just want to re-read so they understand what they are learning, what the learning intention is, and the success criteria that they need to achieve that learning intention. (VSR two)

As stated in Chapter One, Pajares (2002) views it as a challenge for educators to make their students’ self-regulatory strategies automatic and habitual as early as possible. The comments above reveal that this teacher systematically faced a number of challenges.

5.6.3: Providing Models/Exemplars for Students to Refer to and Self-Evaluate Against

The teacher provided models in order to help the young students carry out tasks:

Now we read it and talk about SCUMPS (a model for describing attributes of an object), talk about the letters associated with SCUMPS. SCUMPS is used when we are looking at what the machine looks like, size, colour, and the
material used. We used it when we were talking about the big machine book, and now this week the small machines, and we used the format we had used for the previous book for this one. Children can now relate and talk about their own machine and relate it to their previous knowledge when we talked about the big machines and small machines. (VSR one)

Previously we had made up new words, written new sound words, written new action words, and used them to rewrite the chorus of the Marvelous Toy, so that we set up a model that they can use so they can write their own version of their own chorus. (VSR two)

The teacher’s comments reveal that providing models was an integral aspect of learning in this classroom. Firstly, the model was displayed, discussed, and modeled. Secondly, the students had the opportunity to practice using the model; and thirdly, the students applied the model to create their own artifacts. This form of cognitive coaching is typical of a constructivist learning environment.

5.6.4: Providing Performance/Sharing Sessions so that Students Were Involved in Reflection, Self-Assessment and Peer-Assessment Opportunities

All the children at some stage will have the opportunity to share their work and perform, and have the class respond in some way, either by talking about what they have written and just showing the appreciation of the work they have done. (VSR two)

I have asked the children to come to the meeting place for a reflection time, for them to reflect on whether they are keeping to the learning intentions and relating them to their own picture using SCUMPS. We are reflecting on the work of two or three children whose goal today is ‘to share my work’. (VSR one)
Later, we also refer back to their daily goals, to see whether a child thinks they have achieved that goal during the day and that the next stage is to bring in a weekly goal, maybe subject related, that is perhaps more specific, and the child can measure and know that they have achieved a particular and specific goal. (VSR two)

The teacher had encouraged the students to reflect on their progress towards achieving their goals, to self-assess against the learning intentions and the displayed model, and to offer their peers feedback regarding their work. These are complex tasks, and yet the teacher stated that students as young as five years old can develop these self-regulating behaviours, albeit at the emergent stage.

The teacher commented in the mid-study focus group discussion (week five), that the carrels were used mainly in writing, printing, and mathematics lessons. She perceived that the boys used the carrels more than girls as they required work places with fewer distractions. She commented in VSR two data (week nine):

One child always chooses a corner and usually the timeout capsule, or behind a carrel, because he said he likes it quiet. He also likes to use the CD player, which he said helps him to think of really good ideas when he is writing.

However, in the VSR one data (week two) the teacher commented:

One girl has chosen to work by herself. She has taken her writing book away from the group of girls who are sitting at her table, and she has set herself up with her star and her carrel and is working quietly in her own little area away from the other children.

I think she has chosen a quiet working place because I think that is where she prefers to work at this particular time.

Later, during the VSR two session (week nine), the teacher made further comment regarding the tools and their utilisation:
They are setting up their own workstations where they choose to work. They are choosing carrels, STARS, their own space in the classroom so that suits the conditions that they would like to work in on their written task. Some children use the coloured carrels to work on tables, the unpainted carrels are the ones that are used on the floor. They find different little corners where they can set up their carrels, their STAR, and are then ready to start their writing.

In the final questionnaire administered at the end of the study the teacher commented:

Some children, (especially boys), have said that SRL tools help them to think of ideas because they prefer working in a quiet learning environment.

Overall, the teacher perceived that the self-regulated tools (carrels, timeout capsule, CD players, STARS) provided a quiet learning environment enabling students to concentrate better and complete tasks.

In the final questionnaire, the teacher offered advice to other junior class teachers to introduce the self-regulated learning strategies and tools appropriate for that age level, and to use ‘kid’s speak’ so that the students can understand the concept. The teacher encouraged other teachers to ‘have-a-go’, believing they would be ‘amazed’ at ‘how young children accept the self-regulated learning language, tools, and strategies and begin to develop self-regulated learning skills and behaviours’. It appeared that the teacher had formed an understanding of how to integrate self-regulated learning strategies and tools into a Year zero to one class. The teacher integrated the strategies and tools through explicit teacher-directed activities. This necessity for explicit instruction is reinforced by Winne (1997), who states:

Thus, unless they are explicitly taught to use cognitive tools and to monitor the results of using them, they typically fail to forge explicit, durable, and useful knowledge about whether and how cognitive tools affect learning.

(Winne, 1997, p. 397)

Overall, the teacher in this case study stated that teachers could help students to independently utilise the strategies and tools and to become self-regulated learners:
With young learners, the teacher introduces the processes of goal-setting and goal achievement, setting learning intentions and success criteria, performance/sharing time, and peer-assessment and self-reflection. The teacher helps the child towards independently using these strategies to become a self-regulated learner. (final questionnaire, week ten)

5.7: Summary of the Main Themes Emerging from This Research

Question

After further analysis of the above findings, the following main themes emerged:

- There was a perceived higher use of strategies by some girls;
- There was a greater dependence on the tools by some boys;
- The use of the tools benefited the immediate needs of some boys who were focused on achieving short-term performance goals;
- The use of strategies, such as goal-setting, monitoring, planning, evaluating, benefited some girls, who were more focused on longer-term mastery goals;
- The strategies and tools impacted differently on different age groups of students.

As stated earlier, the study involved only eight teachers and limited numbers of students, therefore, the above claims can not be generalised. However, as Todd (2008) states, action research aims to generate findings that are useful within a specific context rather than findings applicable across many different situations.

The wide variety of advice found in the data suggests that teachers implement new teaching strategies in very different ways, suiting their own pedagogic style, experience, and year level. Providing a variety of teacher voices offering multiple methods of
implementation will be a valuable tool for other teachers wanting to integrate self-regulated learning strategies and tools into their teaching and learning programmes.

The following chapter presents the discussion and conclusions of this study, focusing on the relevance of the findings for teachers, for the New Zealand context, and the implications future research.
CHAPTER 6: Discussion and Conclusions

The purpose of this chapter is to synthesise the findings of the study and discuss the relevance for teachers, for the New Zealand educational context, and for future research possibilities. This study set out to:

- Provide new knowledge of how teachers in New Zealand could integrate key competency skills, specifically, self-regulating skills, into their classroom programmes;
- Provide insight into best practices as well as problems encountered, through an exploration of teachers’ experiences of developing self-regulated learners and self-regulated learning strategies;
- Consider how different groups of children work with different self-regulated learning strategies;
- Provide new insights into how teachers used opportunities offered through the particular form of this project to reflect and to explore their own practices. This was also a focus that emerged and that will be discussed in the following section.

6.1: Relevance of Findings for Teachers

This study is based on the premise that young students (Years zero to eight) should be explicitly instructed in self-regulated learning strategies. The study set out to investigate how teachers might integrate self-regulated learning strategies and tools into their classroom programmes.

The research showed that teachers implemented the teaching strategies in very different ways, suiting their own pedagogic style, experience, and the year level of their class. In their responses, the eight teachers who participated in this study suggested that, when integrating self-regulated learning strategies, teachers should introduce them purposefully and clearly, provide opportunities for students to trial using them, and regularly allow time to reflect on their use and benefits. Many self-regulated learning research studies
focus and report on the effects of a particular intervention on students and do not provide specific information on how the intervention was implemented or integrated differently by the teacher participants (e.g., Perry and VandeKamp, 2000). Gaining an understanding of how different teachers approach the integration of self-regulated learning strategies may inform researchers on why certain interventions are more successful than others.

Most of the teachers in this study commented that it was important that students of all age levels form an understanding of the use, application, and possible benefits of the self-regulated learning strategies and tools before they begin utilising them. The teachers believed this will encourage student ownership of the strategies and tools, as students will come to realise the benefits and utilise them with effect. This finding could be pertinent for teachers in New Zealand, particularly as they begin to implement the revised National Curriculum Statement by 2010. As stated in Chapter One, one of the five key competency groups to be developed by all students is Managing Self, whereby students establish personal goals, make plans, manage studies, set high standards, and have strategies for meeting challenges; key self-regulated strategies identified in this study.

On the basis of this study, I would recommend that teachers should undertake professional development focused on how to develop a self-regulated learner. However, simply undertaking professional development and then applying the strategies will not necessarily lead to improved student outcomes. The type of professional development teachers undertake is crucial in helping them realise the benefits and utilising them with effect. Professional development should be termed ‘professional learning’ as developing knowledge and skills is not enough. Teachers need to undertake professional learning whereby they engage with new knowledge, meet challenges, solve problems, and change their practice. Action research is a professional learning process that schools should utilise. I will continue this theme further in this chapter.

Another key theme that emerged from the findings is the link between the specific self-regulated learning strategies used in this study and their consideration as quality formative assessment practices. Formative assessment can be defined as a process used,
during learning, to respond to a student in a manner that enhances their learning and which feeds back into the teaching and learning process. A number of the strategies trialed in this study were aimed at encouraging students to engage in reflective feedback (see, for example *performance/sharing time*) and use metacognitive strategies (see, for example goal monitoring and self/peer-assessing), to draw them into the learning process. Therefore, based on the experience of the teachers in this study, it is important to foster a classroom environment where student reflection is valued and in which strategies are used to encourage students to evaluate and manage their own learning.

The teacher participants in this study identified the following as important key elements of formative assessment:

- The identification by teachers and learners of learning goals, intentions or outcomes, and criteria for achieving these;
- Conversations and sharing sessions that engage the students in reflection encouraging them to clarify, critique, or elaborate on their ideas;
- The provision of effective, timely feedback to enable students to advance their learning. The feedback needs to focus each student’s attention on the task being performed;
- Teachers responding to identified learning needs and strengths by modifying their teaching approach(es).

Wiliam (2007) states that there is a solid body of research showing that formative assessment practices have a positive effect on student achievement. Therefore, the above key elements should be considered as important classroom practice not only to develop self-regulated learners but also as Wiliam asserts, in order to double the speed of learning (Wiliam, 2007, p. 37). As I discussed in the Introduction to the Folio, teachers in New Zealand have had an opportunity to explore formative assessment through involvement in Ministry of Education professional development contracts whereby the importance of formative assessment practices in student learning is emphasised. However, the key factor, which has been raised in this study, is that formative assessment practices need to be implemented well to be effective. As stated earlier (refer Chapter Four), over a number
of weeks, teacher’s trialed and refined practices, such as sharing the learning intentions and goal-setting, continually improving their practice in order to enhance learning for their students. The teachers were committed to reviewing their practice in order to be effective. Therefore, the question we need to ask is, how do we ensure these well understood formative assessment practices are implemented with effect? As stated previously in this chapter, an influencing factor lies in the professional development teachers undertake around formative assessment practice and self-regulated learning. Groundwater-Smith (2002) suggests effective professional development, or professional learning, should take the form of practitioner inquiry whereby the whole school operates within a learning community. Within a learning community, relationships of trust can be built, reflections can be shared, and change moments can be located. I will explore this idea further in the chapter.

6.2: Relevance of Findings for the New Zealand Context

The first PISA (Programme for International Student Assessment, OECD) study in 2000 found that students who use self-regulating learning strategies are more likely to perform to higher levels on particular scales than students who do not. However, this research also found only ‘moderate’ use of self-regulating strategies by the students in the New Zealand sample (aged 15 years). The data from the OECD study suggest that students who use even a moderate level of self-regulated learning strategies perform to a higher standard. Therefore, it might be assumed that explicitly teaching self-regulated learning skills will enhance student outcomes. Skilful teachers can foster self-regulated learning, and this study provides specific information on how to effectively utilise the strategies across primary school year levels.

The Revised New Zealand National Curriculum Statement, introduced in November 2007, sets the direction for learning for all students while at school (that is, Years zero to 13) and aims to ensure that when they leave, students are equipped for life-long learning and for living in a world where continual change is the norm. Key competency groups are to be developed, over time, and students are to be challenged to develop their competencies in contexts that are increasingly wide-ranging and complex (Ministry of
This study provided the necessary environment for the participating teachers to trial key strategies associated to the key competency group *Managing Self*. Involvement in the study offered the teachers appropriate professional development and a supportive collegial environment, and empowered them to reflect on and change their practice in order to develop self-regulated learners.

In effect, based on the National Curriculum Statement, students from Years zero to 13 are expected to develop self-regulated learning skills. In order for the Statement to be seriously taken up and implemented, teachers will need appropriate professional development opportunities and a conducive environment within which they can be supported to trial and integrate self-regulated learning skills into their class programmes.

The action research cycle employed in this study provides a powerful vehicle schools could employ in order to integrate the key competency group *Managing Self*. In the next section, I discuss how I think teacher professional development through action research may be used to empower and inform teachers.

### 6.3: Professional Development through the Vehicle of Action Research

Teacher reflection was an integral part of the action research cycle, used in this study, allowing teachers the opportunity to research and reflect on their teaching and learning. Teachers had the opportunity to develop their reflective insights while they were trialing a range of self-regulating learning strategies in their own classrooms. The analysis of their comments reveal what Schon (1983) describes as *reflection-in-action*, that is, tacit processes of *thinking* which accompany *doing*, and which constantly interact with and modify ongoing practice in such a way that learning takes place. In my experience, this is sometimes referred to by teachers as ‘thinking on their feet’. In this study, *reflection-in-action* was not always rapid. It was defined by the 'action-present': the zone of time in which action can still make a difference to the situation. This was either minutes, hours, days, or even weeks, depending on the pace of activity and the situational boundaries. For example, teachers’ comments related to the self-regulated learning strategy of goal-
setting reveal *reflection-in-action* over the length of the study as they adapted their teaching practice to suit the needs of the year level of students they were teaching.

Research suggests that teacher reflection about their own beliefs and practices appears to assist them gain a deeper understanding of the principles of teaching and of how students learn (Kane, Maw and Chimwayange, 2005). As I discussed in the Introduction to the Folio, where I contextualised this research study within my own personal professional journey, opportunities to reflect on my own practice helped me to make new meanings and clarify my next steps. This self-regulated learning strategy was an integral part of the action research cycle.

As outlined in Chapter 3 (refer Table 4: Simultaneous Action Research Cycles Employed. p. 84), while undertaking the researcher macro action research cycle I examined my own biases, theoretical predispositions, and preferences. Reflection during the data gathering process made me examine my initial beliefs and understandings and as I listened to the teacher participants’ comments and reflections, I formulated new understandings and more lateral perspectives.

As Humphreys and Hyland (2002) state, critical reflection may assist teachers to reflect on complex ethical challenges about practice where perhaps they were previously unable to discern them. For example, the case study Year seven/eight teacher discussed in Chapter Five, revealed he had undergone demanding rational and moral processes in making reasoned judgments about the classroom intervention he was trialing. The challenging experience had led him to reflect ethically on his classroom practice and to develop meaningful conclusions.

Oberg and McCutcheon (1990, p.143) claim that the focus, since the 1980s, on teachers as reflective practitioners, has led to ‘the teacher as researcher movement’. Reflective teaching empowers the teacher to dynamically examine their practice, investigate and make change in ways that are appropriate, as opposed to ways that are postulated by others. Allan and Mitler (1990) suggest schools need models of action research that emphasise teachers solving the problems they identify and in which they are invested.
Through participating in this action research study, the teachers were able to be flexible and responsive throughout the study, adapting and refining the strategies they used, in order to better suit the needs of their particular students. For most of the teachers, the action research has arisen from their own experiences as teachers and as learners. As stated previously (refer Chapter Three) the strength of action research is its ability to influence practice positively while simultaneously gathering data to share with a wider audience. Success should not be judged solely in terms of the size of change achieved or the immediate implementation of solutions. Success can be viewed in relation to what has been learnt from the experience of undertaking the work. When asked in the final questionnaire, whether taking part in this research study had impacted on them the teachers all responded positively describing the impact in various ways from a substantial growth in their professional knowledge to making their teaching more focused and specific. Some teachers remarked that the study had made them question their approach to teaching, while one teacher believed she was now a more organised, structured, and consistent teacher. Overall, most of the teachers were making meaning about their professional practices, developing deeper understandings about self-regulated learning, and refining their pedagogical approaches.

However, as discussed in Chapter Five (teacher case study one), the type of action research adopted may impact on each participant’s ability to participate actively, reflect deeply, and be empowered to change their practice. On reflection, I would adopt the participatory practical action research approach and ensure the data collection methods encouraged critical reflection.

Core features of professional development activities that have significant, positive effects on teachers’ self-reported increases in knowledge and skills and changes in classroom practice are noted as: a focus on content knowledge, opportunities for active learning, and coherence with other learning activities (Garet, Porter, Desimone, Birman and Yoon, 2001, p. 916). A 2007 synthesis study by Timperley, Wilson, Barrar and Fung (2007) also reported that professional development that led to sustained better practice had a
focus on developing teachers’ pedagogical content knowledge in sufficient depth to form
the basis of principled decisions about practice. This knowledge needed to be combined
with evidence-based skills of inquiry, so that teachers could identify next teaching steps
and test if changes to practice were having the desired impact on students. The teacher
participants in this research study had the opportunity to develop content knowledge
focused on self-regulated learning, and undertook an action research cycle of inquiry
where they trialed an intervention, tested solutions to problems, and refined their practice
(refer to Table 4: The Simultaneous Action Research Cycles Employed, p.84). The study
offered the teachers elements of the above core features of high-quality professional
development. This will provide the Ministry of Education in New Zealand with a useful
and effective professional development model that has a meaningful effect on teacher
learning and fosters improvements in classroom practice.

Johnson (2003, slide 24) concurs, stating effective professional development can be
achieved through building small professional action-inquiry teams focused on learning
and learners and addressing ‘outside-in’ initiatives by turning them ‘inside-out’, often
making them their own. In New Zealand, the Revised New Zealand Curriculum, to be
introduced in 2010, could be viewed as the ‘outside-in’ initiative that teachers could,
through the vehicle of action research, turn into the ‘inside-out’ enabling them to take
meaningful ownership of the revised curriculum.

Johnson (2003) suggests that having teachers work as a community of learners can
increase student and staff achievement, as well as contribute to staff well-being.
Thompson and Haslam (2005, p. 1) describe a community of learners as teachers
undertaking professional learning that is integral to their work, where teachers derive
meaning from their own classroom experience, reflect, and actively collaborate with their
colleagues. Recently in New Zealand, principals have been encouraged to work in
professional learning groups, a programme funded by the Ministry of Education, whereby
they can meet frequently to discuss professional readings, issues, and leadership
challenges pertaining to principalship and curriculum implementation. I have been
involved with a principal learning group over the past four years and the experience has
been very valuable and transformative. As a group, we have critically reflected on current research, making connections to our practice, and systematically and intentionally collected evidence to improve practice within our schools. This experience has encouraged all principals in the learning group to develop similar experiences for the teachers within their schools.

Sharing evidence from current research and allowing teachers the opportunity to critically reflect and make connections to their own practice is becoming a more common undertaking. Systematically collecting evidence connected to school-wide focuses for improvement is now standard practice. These practices are in line with the thinking of Cochran-Smith and Lytle (1999) who state that teachers need to increase their knowledge, reflect on their own practice, trial new ideas, but, ultimately, they need to play a central role in generating sites for inquiry. By having the opportunity to form action research learning groups, they will be empowered to inquire into areas that help them to derive meaning from their own classroom experience, and actively collaborate to improve their practice and learning outcomes for students.

It is appropriate to consider further the value of the action research model for teacher professional development. Successful implementation of the new curriculum statement to be implemented in New Zealand will require teachers to be active participants in action research in order to develop deep pedagogical knowledge within a collaborative cycle of inquiry. Guskey (1986) states that teachers needed to trial new programmes in their classrooms and experience some positive change in student learning outcomes before any changes in their beliefs are likely to occur. The teachers in this research study had this opportunity, and the findings reveal positive change and outcomes for both students and teachers.

Capobianco and Feldman (2006) claim action research has as its purpose to improve one’s practice and to generate knowledge and understanding of one’s practice that can be shared with others. An impact on practice is the first marker of quality in action research. As stated above, comments from the final questionnaire suggest that taking part in the
self-regulated learning study had positively impacted on the teacher’s practice, allowing them to reflect on their personal knowledge and understanding of their practice and offer other teachers insight into their practical thinking and ideas. As the teachers refined the self-regulated learning strategies and their approaches, in order to better meet the study’s goals, they reconstructed their practical pedagogical theories. In essence, the teachers’ understanding evolved from the examination of their practice, and the generation of new knowledge came from facing challenges and developing solutions in light of that examination.

Engaging in and with research has created a valuable period whereby the teacher participants of this study have been able to reflect on their practice and undertake dialogue focused on pedagogy. They have interacted professionally with their peers and collaborated on a teaching and learning intervention, exploring, facing challenges, inventing solutions, and bringing creativity to classroom practice. This approach can be described as developing a culture of ‘transformation’, as opposed to ‘transmission’, whereby the teacher professionals are able to share and create new understandings from a research-informed practice. Ultimately, schools should have the opportunity to operate as learning communities acquiring knowledge which will assist them in the improvement of practice in relation to pedagogy, curriculum, assessment, school organisation, leadership, and management (Groundwater-Smith, 2002, p. 3). Groundwater-Smith describes this as practitioner inquiry which moves beyond the individual to the collective and sees as its objective the engagement of the whole school in systematic inquiry as normal practice towards achieving school improvement. Approaching professional development from a growth or learning perspective, and focusing on teachers as learners operating in a learning community, is progressive and valuable.

Table 4 below encapsulates the dual action research cycle journey of the individual (the principal) and the collective (the participating teachers) of this study whereby all participants operated as a learning community to improve practice both at the classroom level and at the school leadership level.
<table>
<thead>
<tr>
<th><strong>The Researcher Macro Action Research Cycle</strong></th>
<th><strong>The Teacher Participant Macro Action Research Cycle</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plan:</strong> My professional journey led me to formulate questions related to my practice culminating in the development of this research study.</td>
<td><strong>Plan:</strong> The study was shared fully with the participating teachers and they had the opportunity to plan how they would integrate the strategies and tools.</td>
</tr>
<tr>
<td><strong>Act:</strong> I employed multiple roles throughout the study facilitating, observing, recording, interviewing, reflecting, problem-solving and actively listening.</td>
<td><strong>Act:</strong> All teachers were asked to respond to a questionnaire at the outset of the study, attended a professional development day and began integrating the strategies and tools in their classrooms.</td>
</tr>
<tr>
<td><strong>Observe:</strong> As a participant observer I collected data through questionnaires, facilitated a mid-study discussion group, videoed two sessions in each classroom and employed video stimulated recall as a data gathering method.</td>
<td><strong>Observe:</strong> Each classroom was videoed twice during the study. The teachers viewed the tape and commented on the use of the strategies and tools in their classroom.</td>
</tr>
<tr>
<td><strong>Reflect:</strong> I examined my own biases, theoretical predispositions, and preferences. Reflection during the data gathering process made me examine my initial beliefs and understandings and as I listened to the teacher participants’ comments and reflections, I formulated new understandings and more lateral perspectives.</td>
<td><strong>Reflect:</strong> A mid-study focus group discussion was held and the study culminated in the teachers completing a questionnaire.</td>
</tr>
<tr>
<td><strong>Revise Plan:</strong> Changes to the research process were made collaboratively throughout the study.</td>
<td><strong>Revise Plan:</strong> Teachers offered recommendations and insights on the semi-draft report.</td>
</tr>
</tbody>
</table>

**Table 4: The Simultaneous Action Research Cycles Employed**

As stated in the Introduction to the Folio, a number of schools that scored highly in the OECD Pisa Report (2001) have adopted a professional development model based on teachers undertaking research to inform their practice. Successful programmes encourage the development of teachers’ learning communities, provide ways for teachers to share their expertise and experience more systematically, and develop schools as learning organisations. This study confirms the value of this approach and offers further insight into how this could be structured.
6.4: Future Research Implications

From my perspective as a principal of a school, one main question I have is: Can the intervention be sustained? The teachers in the study were required to integrate the strategies and tools over a specific time period, and even though they all indicated they intended to continue to use the strategies and tools, a further question might be: Would they? I have supported all teachers within my own school in using self-regulated learning strategies with their students and would like to negotiate a follow-up study with them after a period of one year.

Another possible area for investigation could be the link, if any, between overt peer messages given through the use of particular tools, such as STARS and carrels, and the development of respect in the classroom. The overt social messages promoted by the use of STARS, the timeout capsule, and carrels, may encourage the social goal development of students, especially in the area of taking social responsibility for the learning of others. Social goals show that students wish to act in a way that is valued by people in their social environment (such as, teachers, peers). The use of STARS, for example, can be viewed as the formulation of rudimentary social responsibility goals. By taking note of an overt message, such as ‘Please come back later, I am busy working’ a student is acknowledging that their peer is concentrating and reacts responsibly by not disturbing them. I would like to investigate whether all or just certain students would develop respectful behaviour goals.

Many teachers commented on the power of the tools to help students remain on task and to concentrate. When we consider the power of the tools from a social perspective, we must consider if, and how, the tools used in this study encouraged students to act responsibly, and to act in a way that was valued by their peers. Further research could investigate this notion and inform teachers about the teaching of values, such as responsibility and respect.

A further area of research could be focused on the link between formative assessment practices and self-regulated learning. As explained earlier, the teachers displayed all key
aspects associated with providing formative feedback. Investigating the link between providing quality formative feedback, self-regulated learning, and student achievement could be an interesting area for research. For example, is there a close correlation between the specific self-regulated strategies employed in this study, quality formative assessment practices, and student achievement? A start has been made in this study, but further investigation could be undertaken focusing on student achievement rather than how teachers integrate the strategies.

6.5: Conclusion

This study has furthered my professional journey and added new personal insights into my teaching philosophy. I have learnt the following:

- Yes, young students, even five-year-olds, can begin to develop as self-regulated learners;
- The strategies I have focused on are inter-related and build on each other. They are essential self-regulated learning elements;
- Both teachers and groups of students value and use specific tools;
- The strategies and tools are valued by other teachers for their perceived ability to help students learn;
- Tools such as the CD players and timeout capsule, help students to concentrate and complete tasks;
- Teachers, when faced with challenges, review their practice and devise new strategies and tools to suit their students’ needs.

In hindsight, I should have provided a greater amount of professional development time at the beginning of the study, over a period of days, focused on developing a greater understanding of the practicalities of integrating the strategies and tools. A valuable part of the professional development day was the collegial informative discussion, which took place at the end of the day, when teachers began to offer ideas about how they could begin to integrate the strategies and tools into their class programme. The teachers gravitated towards teachers of the same year level and began sharing resources and ideas
enthusiastically. The teachers from my own school had the opportunity to take part in informal discussions throughout the study; however, the teachers from the other school remarked that this was not so valuable for them as they worked with different year levels, therefore, shared ideas were often not practical. The value of the informal discussions could be viewed as immense for the teachers and, if harnessed, could have offered the study informative data.

As stated in Chapter Three, the action research approach that appeared most suited to my intention was the technical approach, as I imposed the intervention and theoretical framework on the teacher participants. A more suitable approach, and the approach that emerged, would have been participatory action research which is characterised by social activity, being participatory, collaborative, emancipatory, critical, and recursive (Kemmis and Wilkinson, 1998). In 2008, teachers at my school undertook participatory action research group studies focused on investigating an issue related to the school-wide self-regulated learning programme.

The greatest challenge to teacher participants, appeared to be integrating the strategy of goal-setting. At the professional development day, at the beginning of the study, teachers explored research and findings associated to goal-setting. However, this is a very complex activity which needs a longer time to explore before trialing. All teachers grappled with the strategy, facing dilemmas such as how to develop the skill with five-year-old students and how to help students develop meaningful specific goals. Strategies such as goal-setting, self-and peer-assessment, and student reflection are all complex processes, and each one could have been viewed as a separate study.

I am very grateful for and continue to be astounded at the enthusiasm and professionalism displayed by the teacher participants in this study. Their ability to continually strive to help their students succeed and achieve echoes my own professional journey as documented in this thesis. I look forward to continuing this worthwhile journey and am excited at the prospect of the next stage.

“He who dares to teach must never cease to learn. (Anonymous)
Dear Teacher,

My name is Lyn Bird and I am Principal at Alexandra Primary School, Central Otago. Presently I am studying for a Doctoral degree in Education at Deakin University in Melbourne under the supervision of Dr Andrea Allard.

The focus of my research is on the development of self-regulated learning (SRL) skills in young children. In New Zealand curriculum reform is placing new emphasis on developing self-managing, life-long learners. The Ministry of Education has identified a key competency group as, Managing Self, which defines key self-regulated learning behaviours. This research aims to examine how self-regulated learning strategies and tools can be introduced, during the cycle of learning, and will consider the impact a range of strategies and tools have on the development of self-regulated learners. It aims to identify how teachers can integrate specific self-regulated learning strategies and tools and considers how children take up these strategies in different classrooms.

I would like to invite you to participate in this research project. As a participant you will undertake the following:
1. Three x two hour professional development sessions, at a time and location convenient to all participants, in order to gain an understanding of and up skill in the use of the SRL strategies and tools to be used in the study. This will be facilitated by myself at no cost to the school or teachers.

2. All teachers will be interviewed, for approximately half an hour, independently, at the outset of the study to explore their understandings of SRL and if/how they develop SRL skills in their students. This will take place at a venue and time convenient to the teacher and will be audio taped. Questions such as the following will be asked:
   - What do you understand by the term SRL?
   - Do you currently include the development of SRL skills in your classroom programmes? If so, how?

3. The participating teachers will then begin implementing the strategies within their classrooms over a ten week period. All tools to be used will be provided free to each participating teacher.

4. Each classroom will be videoed (by myself) two weeks after introducing the strategies and tools, and then again eight weeks later, at the end of the data gathering time. The videoing will take place during an inquiry learning lesson for approximately one to one and a half hours duration. I will visit the classrooms a number of times before the videoing to enable a familiarity to be established. The video camera will be placed unobtrusively to discourage any interaction with myself.

5. After each video session the teacher will view the video, having full control of the remote control, and offer reflective comments. This will take place at a venue and time convenient to the teacher and will be audio taped.

6. After five weeks of trialing the strategies and tools the teachers will be collectively interviewed to ascertain how the implementation of the SRL tools are progressing, any challenges, and refinements they may have made or would like to make. This will take place at a venue and time convenient to the teachers and will be audio taped. Questions such as the following will be asked:
• How and when have you integrated the SRL strategies and tools into the learning cycle?
• What challenges or problems have you encountered?
• What, if any, refinements have you made, or would like to make?
• How do you think different age groups have developed SRL skills in your classrooms?

7. Finally, the teachers will be interviewed independently, for approximately half an hour, in order to compare their knowledge and understandings about SRL with their initial interview comments and their reflections on the process of the study. This will take place at a venue and time convenient to the teachers and will be audio taped. Questions such as the following example will be asked:
• How have your understandings and skills in SRL grown over the past few weeks?

All information collected in this research project will be treated with the strictest confidence and will be kept in a locked filing cabinet in the Faculty of Education, Deakin University for six years. No student, teacher or school will be identified by name, and pseudonyms or code names will be used in any reporting of the research.

Attached for your perusal is a consent letter to parents of any children who will be involved in the videoed classroom sessions.

Participation in this research is entirely voluntary. You are free to withdraw at any time during the project in which event your participation in the project will immediately cease and any information obtained from you will not be used. If you have any further questions regarding the study, please contact me on 448 8340 or my supervisor, Dr Andrea Allard on 61 3 92446026.

Findings of this research project will mainly be documented in the doctoral thesis submitted to Deakin University as a requirement of the PhD, but may also be published in articles in teacher education journals, or presented at conferences.
Thank you for your consideration of this information.

Yours sincerely

Lyn Bird

Should you have any concerns about the conduct of this research project, please contact the Secretary, Ethics Committee, Research Services Division, Deakin University, 221 Burwood Highway, BURWOOD VIC 3125. Tel (03) 9251 7123 (International +61 3 9251 7123) or email research-ethics@deakin.edu.au.
Appendix Two: Example of Informed Consent Letter

DEAKIN UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE
CONSENT ON BEHALF OF A MINOR OR DEPENDENT PERSON

I, 

of

Hereby give consent for my son / daughter / dependent

to be a subject of a human research study to be undertaken by

Ms Lyn Bird

I understand that the purpose of the research is to examine how self-regulated learning strategies and tools can be introduced during the cycle of learning, and will consider the impact a range of strategies and tools have on the development of self-regulated learners. It aims to identify how teachers can integrate specific self-regulated learning strategies and tools and considers how children take up these strategies in different classrooms.

I acknowledge

1. That the aims, methods, and anticipated benefits, and possible hazards/risks of the research study, have been explained to me.

2. That I voluntarily and freely give my consent to my child's/dependant's participation in such research study.

3. I understand that aggregated results will be used for research purposes and may be reported in scientific and academic journals.

4. Individual results will not be released to any person including medical partitioners.

5. That I am free to withdraw my consent at any time, during the study in which event my child's/dependant's participation in the research study will immediately cease and any information obtained will not be used.

Signature: 

Date: 
NOTE: The parent or parents, or person(s) having guardianship of the child must sign the consent form.
Appendix Three: Example of Letter of Invitation: School Board of Trustees

Dear ------------------ School Board of Trustees,

My name is Lyn Bird and I am Principal at Alexandra Primary School, Central Otago. Presently I am studying for a Doctoral degree in Education at Deakin University in Melbourne under the supervision of Dr Andrea Allard.

The focus of my research is on the development of self-regulated learning (SRL) skills in young children. In New Zealand curriculum reform is placing new emphasis on developing self managing, life-long learners. The Ministry of Education has identified a key competency group as, *Managing Self*, which defines key self-regulated learning behaviours. This research aims to examine how self-regulated learning strategies and tools can be introduced, during the cycle of learning, and will consider the impact a range of strategies and tools have on the development of self-regulated learners. It aims to identify how teachers can integrate specific self-regulated learning strategies and tools and considers how children take up these strategies in different classrooms.

I would like to invite your school to participate in this research project. As a participating school your teacher participants will undertake the following:

1. Three x two hour professional development sessions, at a time and location convenient to all participants, in order to gain an understanding of and up skill in the use of the SRL strategies and tools to be used in the study. This will be facilitated by myself at no cost to the school or teachers.

2. All teachers will be interviewed, for approximately half an hour, independently, at the outset of the study to explore their understandings of SRL and if/how they develop
SRL skills in their students. This will take place at a venue and time convenient to the teacher and will be audio taped. Questions such as the following will be asked:

- What do you understand by the term SRL?
- Do you currently include the development of SRL skills in your classroom programmes? If so, how?

3. The participating teachers will then begin implementing the strategies within their classrooms over a ten week period. All tools to be used will be provided free to each participating teacher.

4. Each classroom will be videoed (by myself) two weeks after introducing the strategies and tools, and then again eight weeks later, at the end of the data gathering time. The videoing will take place during an inquiry learning lesson for approximately one to one and a half hours duration. I will visit the classrooms a number of times before the videoing to enable a familiarity to be established. The video camera will be placed unobtrusively to discourage any interaction with myself.

5. After each video session the teacher will view the video, having full control of the remote control, and offer reflective comments. This will take place at a venue and time convenient to the teacher and will be audio taped.

6. After five weeks of trialing the strategies and tools the teachers will be collectively interviewed to ascertain how the implementation of the SRL tools are progressing, any challenges, and refinements they may have made or would like to make. This will take place at a venue and time convenient to the teachers and will be audio taped. Questions such as the following will be asked:

- How and when have you integrated the SRL strategies and tools into the learning cycle?
- What challenges or problems have you encountered?
- What, if any, refinements have you made, or would like to make?
- How do you think different age groups have developed SRL skills in your classrooms?
7. Finally, the teachers will be interviewed independently, for approximately half an hour, in order to compare their knowledge and understandings about SRL with their initial interview comments and their reflections on the process of the study. This will take place at a venue and time convenient to the teachers and will be audio taped. Questions such as the following example will be asked:

- What do you now understand by the term self-regulated learning?
- How do you presently include/integrate self-regulated learning skills in your classroom programme?

All information collected in this research project will be treated with the strictest confidence and will be kept in a locked filing cabinet in the Faculty of Education, Deakin University for six years. No student, teacher or school will be identified by name, and pseudonyms or code names will be used in any reporting of the research.

Attached for your perusal is a consent letter to parents of any children who will be involved in the videoed classroom sessions. Participation in this research is entirely voluntary. You are free to withdraw at any time during the project in which event your participation in the project will immediately cease and any information obtained from you will not be used. If you have any further questions regarding the study, please contact me on 448 8340 or my supervisor, Dr Andrea Allard on 61 3 92446026.

Findings of this research project will mainly be documented in the doctoral thesis submitted to Deakin University as a requirement of the PhD, but may also be published in articles in teacher education journals, or presented at conferences.

Thank you for your consideration of this information.

Yours sincerely

Lyn Bird
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Appendix Four: Initial Questionnaire

**Question One:**
What do you understand by the term self-regulated learning?

**Question Two:**
Are you developing SRL skills in your students?  
Yes/No
If yes, please describe how.
Appendix Five: Mid-Study Focus Group Discussion Questions

**Question One:**
How and when have you integrated the SRL Strategies and tools into the learning cycle?

**Question Two:**
What challenges or problems have you encountered?

**Question Three:**
What, if any, refinements have you made, or would like to make?
Appendix Six: Final Questionnaire

**Question One:**
Has taking part in this SRL study group impacted on you as a teacher?
Please explain.

**Question Two:**
Has taking part in this SRL study group impacted on your students?
Please explain.

**Question Three:**
Which particular SRL tools & strategies do you think are important teaching components for developing SR learners?

**Question Four:**
Which aspects of the SRL strategies and tools will you continue to use, and why?
**Question Five:**
How important is it to develop self-regulated learning skills in young children?

**Question Six:**
What advice would you give to teachers wanting to integrate SRL strategies into their teaching in order to develop students’ self-regulating behaviours?

**Question Seven:**
Do you think SRL strategies and tools should be introduced to the learner at particular phases of Zimmerman’s learning cycle? If yes, how? If no, why?

**Question Eight:**
How do different groups of children (age, ethnicity, gender …) develop SRL strategies?
Thank you so much for taking part in the study and offering so much valuable insight into the teaching profession.
Regards, Lyn.
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Section 3: Professional Writing and Practice

There are two parts to this section of my folio. In Part A, I describe and reflect on the design, implementation and purposes of the professional development day that I used to introduce the research study to the participating teachers.

In Part B, I narrate and analyse the processes, intersections and interrelationships between my own professional research journey and developing a school vision and curriculum delivery framework.

Part A: Self-Regulated Learning Teacher Professional Development

This section describes and analyses the beginning point of the professional development (PD) journey the participating teachers undertook in order to develop understandings about self-regulated learners. I designed the four sessions that made up the PD day to incorporate my own professional journey, to present the teachers with new theory and research, and to reveal and build on prior knowledge. In structuring the PD day, I planned a combination of activities that I hoped would encourage teachers to compare/contrast, to link theory to their practice, and to make new meanings. The sessions were interactive, with opportunities for individual reflection and group work. I was aiming to use constructivist practice whereby new knowledge is presented in ways that allow participants to engage and examine it on the basis of their own prior experiences.

Below is an outline of the programme I designed and followed. I draw on specific examples of the PowerPoint presentation (Sessions Two and Three) as a means of discussing and reflecting on my approach.

Outline of the professional development day (also discussed in Section Two, Chapter Three)

Session One: 8.30 – 10am
Individual questionnaire administered
Informal introductions
Outline of the day
Details of the research study

**Session Two: 10.30 – 12.30pm**
Accessing teachers’ prior knowledge about their teaching philosophy and self-regulated learning (slide 2)
Research and theory on self-regulated learning (slides 3-16)
Zimmerman’s Cycle of Learning (slides 17 & 18)

**Session Three: 1.30 – 2.30pm**
Self-regulated strategies and tools to be used in the study (slides 19 & 20)
Creating a conducive environment, using the inquiry and multiple intelligence approaches, for self-regulated learning development (slides 21-25)
Reflection and discussion time (slide 26)

**Session Four: 3 – 4.30pm**
Discussion and planning of the sessions to be videoed
Informal group discussion and sharing of ideas.

As a beginning point, teachers were asked to note down key elements of their teaching approaches and philosophy (slide 2).

**Slide 2**

**Task 1:**
- Develop a concept map containing key elements of your own teaching philosophy.
- Articulate what you understand by the term self-regulated learner.
- Describe strategies and tools you use to develop SRL skills in your students.
- Share your reflections in a small group, noting down commonalities.

I started with this activity with the aim of helping the teachers reflect on and articulate their own practice and beliefs before I presented some new ideas to them. I assumed that as all of the teachers were experienced they would be able to describe more cogently how his or her teaching philosophy was expressed in practice. As Timperley (2008) states,
teachers are likely to reject new ideas that conflict with their current ideas unless, as part of the professional learning, their existing understandings are engaged. As the teachers were all already utilising the inquiry approach to learning and integrating some of the self-regulated learning strategies I was hoping that their existing understandings were congruent with the new information and therefore would be integrated readily into their existing practice.

Next, I asked teachers to describe a self-regulated learner, and any strategies and tools they used that were designed to develop self-regulating learning skills. After working independently, the teachers shared their teaching philosophies and understandings in small groups. Hearing them sharing their insights in small groups meant that I was able to come to some understanding of their prior knowledge. Helping the teachers to access their prior knowledge would help them to bridge the gap between new information and previously learned information. They made connections between their shared philosophies and their ideas around self-regulated learning. Timperley (2008) reiterates the need to consider teachers’ prior knowledge and how they view existing practice. She states that this takes teacher diversity into account just as we expect teachers to take student diversity into account.

On reflection, I was aware that all teachers had already undergone some professional development focused on self-regulated learning, and they were clearly able to describe a self-regulated learner and strategies they used. As stated above, this initial reflection and discussion session enabled the teachers to gain a sense of each other’s experiences and knowledge. This social constructivist approach to facilitation (refer Section Two, Chapter One), recognised that learning is a social act in which people are encouraged to question their own and others’ understandings and to deconstruct and reconstruct their ideas.

It became apparent to me throughout the session that the teachers only employed some of the strategies, and all commented they were not using them with full effect. Was this a reflection of the quality of the professional development they had experienced regarding these processes, a lack of understanding about self-regulated learning in general, because
they did not perceive any value in using them, or that the school culture where they worked did not value self-regulated learning? It may have been a combination of all of the above. I can now conclude that participating in the study influenced and reshaped their practice to the extent that they perceived that they were, by the end of the study, using the strategies with effect. Timperley (2008, p. 14) notes that change in teacher practice appears to be promoted by a cyclical process in which teachers: have their current assumptions challenged by the demonstration of effective alternative practice, develop new knowledge and skills, make small changes to practice, and observe resulting improvements in student outcomes. Undertaking the action research cycle employed in this study, in combination with the professional development day offered to the teachers at the beginning of the study, promoted their professional learning and may have raised their expectations of their students.

I recommend that professional development sessions for teachers devote time to accessing teachers’ prior knowledge. In my experience this is not common practice. Novak and Gowin (1984) state that for learning to be meaningful the learner must possess some prior relevant knowledge to which the new knowledge can connect, and the learner must consciously and deliberately choose to relate in a meaningful way the new knowledge to the existing knowledge. Through this process, learners build knowledge by making a growing network of connections. In order for teachers to re-imagine fundamental aspects of practice they need time for reflection and exploration in order to make connections. By providing activities that allow teachers to access their prior knowledge before being exposed to new knowledge, learning becomes an active process of acquiring, creating and using new knowledge, as opposed to just acquiring new knowledge. It is encouraging to read on the New Zealand University of Canterbury Education Plus website the following key aspects of professional development programmes to be offered in 2009:

- Supporting implementation of the revised curriculum;
- Program planning;
- Building staff capacity;
• Using an inquiry model to inform practice;

• Improving classroom practice to meet the diverse needs of all learners including Maori and Pacifika;

• Supporting provisionally registered teachers and inexperienced heads of departments;

• Challenging teachers to examine their existing beliefs, expectations and professional practices.

(University of Canterbury Education Plus, 2008)

Offering teachers the chance to examine their own beliefs and practice is the final component on the list, however, perhaps it should be the beginning point of all professional development opportunities. Release time for teachers to attend professional development workshops is a costly component of a school’s annual budget. Therefore, it is vital that the experience should enable teachers to form deeper understandings, co-create new knowledge with their peers and challenge their existing beliefs and practices.

In the next session, I presented teachers with a number of relevant theories and ideas around why self-regulating skills are important to the learner (slides 3–6)

Slide 3
Task 2:

• Answer the following question:
  Are you a self-regulated learner?
  If yes, explain how.
  If no, explain why not?
• Explain why students may benefit by developing SRL skills.

What is SRL?

• Definitions of SRL often differ on the basis of researchers' theoretical orientations. However, a common conceptualization of S-R learners is that they are metacognitively (self-aware, knowledgeable, decisive about learning);
  motivationally (intrinsic task interest, self-starters);
  behaviorally (self-regulated, seek out advice & information, self-instruct);
  active participants in their own learning (Weinberg et al, in press).

• S-R learners proactively seek out information when needed and take the necessary steps to master it. They view acquisition as a systematic and controllable process, and they accept greater responsibility for their achievement outcomes (Zimmerman, 1990).

• S-R learners plan, set goals, organise, self-monitor, and self-evaluate at various points in the learning cycle (Gama, 1992).

• S-R learners operate in a “self-oriented feedback” loop – a cyclic process in which students seek feedback on a variety of tasks (Zimmerman, 1989).

• Student learning and motivation are viewed as interdependent processes. S-R learners are not merely reactive to their learning outcomes; rather, they proactively seek out feedback and self-regulate their self-directed and self-motivated learning (Corno, 1992).

• SRL strategies are used purposefully by the learner in order to regulate the learning cycle and achieve academic goals.

Task 3:

• Compare the ideas on the slide to your own statement from task 1, incorporate key ideas and formulate a succinct definition.
• Share with group members, and then develop a group definition of SRL.
Slides three and five presented a number of quotes that, when considered together, I hoped, would help the teachers to gain a view of self-regulated learning as a lifelong set of skills and attitudes that benefit the learner. I spoke further about each quotation to clarify its context. I chose the quotations as they had significance for the research study, however, they were too complex to unpack in such a short session. The quotes were designed to facilitate reflection and discussion and to help the teachers make meaningful connections about self-regulated learning. Next time I would only include two or three concise quotes/definitions. In hindsight, I think too much time was wasted linking the quotes to their intended message. The task should not only have held an element of challenge but also helped the teachers reflect and make links to their practice relatively easily.

I then asked the teachers to reflect on themselves as learners and to begin to utilise their own ideas and assumptions about self-regulated learning. I thought this was important, as it would encourage them to build explicit connections within their own experiences, allowing them to personalize self-regulated learning in terms of their own learning. I then presented the teachers with a number of definitions of self-regulated learning, and then asked them to compare their ideas with the different definitions and incorporate both into a succinct definition. The teachers’ definitions described the strategies that a self-regulated learner would display, such as goal-setting, self-monitoring, possessing organizational skills, as well as behavioural characteristics, such as motivation and independence. They did not include theoretical terms, such as the ‘feedback loop’ or ‘metacognition’, or discuss any theoretical orientations, referring only to the terms that they could make practical connections to. In reflecting on this, I found Timperley (2008) comments helpful. She states that offering teachers the opportunity to integrate theory and practice allows teachers to use the theoretical understandings as the basis for making ongoing, principled decisions about practice. As the teachers discussed the theoretical definitions they teased out their own interpretations by recounting classroom experiences and making explicit connections to student behaviours they had observed.
As illustrated in Slide six, the aim of that task was to help teachers develop a shared understanding, and to encourage them to scaffold their thinking and co-operatively form a new definition. I was aware how important it is for participating teachers, in an action research project, to develop a shared understanding around the main ideas/theories so that further group discussions throughout the action research cycle utilise a common language, incorporating common definitions and a common vocabulary. This notion is shared by Staples and Truxaw (2007) who state that a hallmark of a professional community is its shared discourse. They conclude that developing a shared language may facilitate discussions of practice, support teacher learning, and afford conceptual tools that teachers can draw upon as they organise lessons and reflect on their teaching.

An important consideration for professional development facilitators could be to provide a learning environment that supports the continual social construction of knowledge through the use of tasks designed for frequent reflection, group discussion and debate, and synthesis of new information. McNiff (2002) reiterates this point when commenting that new knowledge can most effectively be generated through dialogue with others who are equally interested in the process of learning. Professional learning should help teachers celebrate what they already know, and also generate new knowledge. Timperley (2008) concludes that a skills-only focus to professional development does not develop the deep understandings teachers need if they are to change practice in ways that flexibly meet the complex demands of everyday teaching.

Next, and as a means of helping them to visualise a self-regulated learner, the teachers were given the five feature categories defined by Heo (2000), and asked to brainstorm the characteristics of learners in each category (slides 7 & 8).
Slide 7

Five features of self-regulated learners:

- Knowledge Possessors
- Knowledge Utilisers
- Self-Motivators
- Reflective Thinkers
- Personal Learning Responsibility

One way to increase learner responsibility is to develop self-regulated learning skills and encourage learner autonomy. (Heo, 2000)

Slide 8

Task 4:

- Brainstorm what you understand by each feature.

After utilising their own knowledge and ideas, the teachers were asked to compare their characteristics with the descriptions given by Heo (2000) (slides 9-13).
Knowledge Possessors:

they have knowledge about themselves as learners; knowledge about the given learning tasks and environments; knowledge about various learning strategies; knowledge about content related to the learning task; they know how, when and why to use their knowledge in a specific context.

Knowledge Utilisers:

they utilize knowledge about learning tasks and learning strategies to proceed with successful learning, i.e., they manage their learning through metacognitive process; they monitor their own thinking and problem solving; allocate their time and assess their progress effectively; and can predict the outcomes of their performance; they seek a way to succeed.
Self-Motivators:

self-regulated learners have will and motivation for learning, they are positively self-motivated to use the learning strategies and regulate their performance; they place more effort in obtaining successful learning outcomes.

Reflective Thinkers:

they continually reflect throughout the learning process altering between previous, ongoing, and future learning activities in order to make changes and to succeed.
In order to help them to link theory to practice, I asked the teachers to write thumbnail sketches of students they had taught who possessed these characteristics. The aim of this was to enable them to identify/visualise self-regulated learners and make clear links to their characteristics. This appeared to be a challenging activity as it promoted not only a lot of discussion about characteristics of learners, but more importantly, the development of a common description of a self-regulated learner’s characteristics.

On reflection, I now realize how the teachers needed more time to reflect, to make connections to the experiential, and to relate the anecdotal. Sharing anecdotal ‘stories’ appeared to help the teachers find commonalities in their practice and develop a collegial understanding. They were responding and collaborating to complete the set tasks and in the process beginning to display key features of action research: developing shared interpretations, forming deeper understandings, and making new meaning (refer Section Two, Chapter Three).

The next part of the session focused on identifying key self-regulated learning strategies beginning with broad descriptions from the literature, and then asking teachers to list any strategies they believed were important and to explain why (slides 15 & 16). Slide 15 contains a vast amount of text on one slide, however, the teachers were familiar with the information as it was taken from the Ministry of Education Draft Revised National Curriculum Statement, issued to all schools in 2007, which they had accessed.
Key SRL Strategies

- The Key Competency Group Managing Self includes the ability to: set and achieve goals, make plans, estimate time; persevere, be resourceful, get through hard tasks and tests and need; take increasing responsibility for learning; and, act within the big picture/larger context.

- This key competence group encompasses key features of self-regulated learning, that is, setting and achieving goals, time management, planning, self-monitoring, self-evaluating and taking control of one’s learning.

- This key competence group is about managing oneself as an individual while remembering that we are always acting in a social context. Developing inner independence comes from being given manageable amounts of responsibility for choosing when and how to go about learning.

- Metacognitive Strategies, i.e., planning, monitoring, selecting, evaluating, revising – all covert processes.

- Cognitive Strategies, i.e., personal control processes used during learning to attend, remember, learn and think.

- Motivational Strategies, i.e., orienting to learning, a belief they can achieve the task, searching for understanding, and self-reinforcement.

- SRL Tools – physical tools to be used in conjunction with the Cognitive Strategies to develop and activate personal control procedures.

Task 6:

- List the key SRL strategies you deem important and explain why.

- Describe, using a visual tool, what you understand as the cycle of learning.

- Share in a small group and compare cycles.

I used this exercise to introduce the key strategies and tools to be used in the study. Task six (slide 16) had three parts which were quite complex and took longer than anticipated. The tasks were designed to help the teachers clarify their understandings and to access their prior knowledge about self-regulated learning strategies and the cycle of learning. The most valuable task was the group sharing and comparing, which allowed teachers to reflect on their teaching experiences and to articulate their understandings about how students learn. By this stage, the teachers appeared more comfortable sharing their ideas and knowledge, although, in hindsight, I realize this type of activity may have been stressful for the more introverted, shy, less confident teachers, or those who didn’t feel they could resist. It may have been beneficial for the group to have met informally in a
social context, before the professional development day, in order to build positive group norms. Not including an informal meeting opportunity may also have had an impact on the data gathered during the mid-study focus group discussion resulting in the initial responses being rather formal and stilted (refer Section Two, Chapter 3.9.3). As Timperley (2008) points out, opportunities to learn need to occur in environments characterised by both trust and challenge because change is as much about the emotions as it is about knowledge and skills. When group members have the opportunity to build trust members are less defensive and less unproductive (Euroregional Center for Democracy, 2008). Therefore, lack of trust implies low involvement and conflict avoidance. Members of a group need to feel accepted so that there is an open expression of ideas and opinions. This is usually referred to as the ‘norming’ stage when members have had the opportunity to get to know one another and can recognize the others’ contributions (Euroregional Center for Democracy, 2008, p. 10). Providing the opportunity for the teacher participants in this research study to meet before the study officially commenced, may have allowed a greater level of trust to build and a higher level of involvement may have been evident.

As the study was underpinned by Zimmerman’s Self-Regulated Cycle of Learning (refer Section Two, Chapter Two), the teachers were asked to reflect on and describe what they understood as a cycle of learning (slide 16). Zimmerman’s Cycle was introduced (slide 17) and teachers then had the task of comparing their own cycle with Zimmerman’s Cycle of Learning (slide 18).

Slide 17
Cycle of Self-Regulated Learning (Zimmerman, 1989)

1. Plan/Forethought Stage:
   - Analyze the learning task; set goals; plan learning strategies.

2. Monitor/Performance/Volitional Control Stage:
   - Attention focusing; implement the plan; monitoring performance throughout, self-instructing.

3. Evaluate/Self-Reflection Stage:
   - Self-evaluation; adaptivity; evaluating the process and the product.

Reflection goes on throughout the SRL cycle. Self-questioning facilitates the reflective process.

Task 7:
- Compare the two cycles of learning (Zimmerman’s on slide 19 and your own from task 6) and note the similarities and any differences.

As discussed in Section Two, Chapter Four, the teachers were familiar with a cycle of learning before the study began; therefore, introducing Zimmerman’s Cycle of Learning may have proved unnecessary. On reflection, Zimmerman’s Cycle was very significant for me as his model underpinned the integration of the self-regulated learning strategies and tools. Teachers, however, were able to articulate their own cycles of learning and during the implementation phase integrated the tools according to the year level they taught and their own teaching style. A consideration for teacher professional development design in the future could be to pay careful attention to the balance between the need to introduce new theory and the benefit from accessing and building on teachers’ experiential knowledge. Timperley (2008) notes that theoretical understandings give coherence to teachers’ beliefs and theories about what it means to be effective, therefore, achieving the optimal balance could be an important consideration. Gathering and analyzing teachers’ reflections through questions, at the end of a professional
development session, could be one way of judging whether the optimal balance had been achieved.

After presenting the more theoretical aspects of the study, I felt it was time to now make explicit links to the more practical aspects. The next step was to introduce the specific strategies and tools to be used in the study (slide 19) and, based on Zimmerman’s Cycle, discuss the proposed stages they should be introduced. The teachers then had the opportunity to build understanding about each strategy and tool, and to begin forming ideas about how they would introduce them in their particular classes (slide 20).

Slide 19

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<tbody>
<tr>
<td>Forethought Stage: Analyse the tools, set goals; plan learning strategies.</td>
<td>Sharing the learning intentions, developing the success criteria, setting goals, referring to a model/example, referring to using the tools.</td>
</tr>
<tr>
<td>Performance Stage: Attention focusing; imaging; choosing the strategies; implement the plan; monitoring performance throughout; self-instruction; self-recording.</td>
<td>Goal monitoring, using the tools (carrels, CD players with baroque music, STARS, timeout capsule, on task off task checks), referring to a model/example, referring to the learning intentions and success criteria, performance/sharing time.</td>
</tr>
<tr>
<td>Self-reflection Stage: Self-evaluation; attributing success or failure; evaluating the process; refining the process; applying positive or negative self-reactions.</td>
<td>Reflecting on goals, setting new goals, self-assessing against the learning intentions and success criteria, performance/sharing time; peer assessment against learning intentions and success criteria, developing next learning steps.</td>
</tr>
</tbody>
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Slide 20

Task 8:

- Peruse the list of strategies and tools, on slide 19, and discuss with your group what you understand by each one, that is explain what it is and its application.
- Note any strategies and tools you are unfamiliar with.
Discussion centred on the strategies and tools rather than on which part of the cycle they should be integrated. The teachers became more animated when discussing the tools and strategies, and it appeared they could relate more easily to their practical application as opposed to trying to link the theory of the cycle to their practice. This is not necessarily a positive consideration, as considering the cycle in more depth may have led to a more critical discussion and clearer links made between the cycle and the integration of the strategies.

Session three of the professional development day focused on the connections between self-regulated learning and social constructivism (slide 21), conveying the idea that self-regulated learning skills are best developed within a specific conducive learning environment. The main elements of this conducive learning environment were listed as: inquiry learning, the Multiple Intelligence approach, co-operative learning, and self-assessment. As discussed in Section Two, Chapter Two, social constructivism assumes that meaningful learning occurs when individuals are engaged in social activities (Kim, 2008). From my classroom teaching experience, inquiry learning, the multiple intelligence approach, and co-operative learning all provided students with opportunities to engage in learning through group activities. As discussed in Section Two, Chapter One, when utilising these approaches students become actively engaged in meaningful inquiry and in the process, use specific strategies to take control of their own learning. The teacher facilitates the learning process while students work collaboratively providing scaffolding for each other as they analyse, synthesise and problem-solve. The learners increasingly operate more independently until they reach their zone of proximal development, that is new, higher-order learning (Vygotsky, 1978).

All teachers seemed familiar with these learning approaches and said they used them within their class programmes. The task was designed to encourage reflection and articulation about what the approaches were, and why they used them. I then wanted them to make tentative links between their assumptions and self-regulated learning (slide 22). I was hoping they would revisit their classroom experiences when using these approaches, describe the benefits to learners, and recognize that they may already be
providing aspects of a conducive environment within which they could develop self-regulated learners. Even though Task eight took a considerable amount of time, it appeared to be a valuable exercise as it helped the teachers make links between their teaching approaches and the development of a self-regulated learner: a key aspect of the study.

**Slide 21**

Creating a conducive environment for the development of SRL skills

Through the social constructivist principles of:
* guiding students to formulate and research their own questions (i.e. the inquiry learning process)
* allowing multiple interpretations and expressions of learning (i.e. the multiple intelligence approach)
* encouraging group work and the use of peers as resources (i.e. cooperative learning)
* connecting new knowledge to existing knowledge.

It emphasises reflection and learning through self-assessment.

**Slide 22**

Task 8:

- Reflect on inquiry learning, multiple intelligences, and cooperative learning, and, with your group, explain why these approaches together, offer a conducive SRL skill development environment.

Reading and discussing Slides 23 to 25 made these links more explicit, and the slides reminded them of all the features involved in the approaches.
Creating a conducive environment for the development of SRL skills

Through the social constructivist principles of:
• guiding students to formulate and research their own questions
  (i.e. the inquiry learning process)
• of allowing multiple interpretations and expressions of learning
  (i.e. the multiple intelligence approach)
• of encouraging group work and the use of peers as resources
  (i.e. cooperative learning)
• of connecting new knowledge to existing knowledge.

It emphasizes reflection and learning through self-assessment.

Creating a conducive environment for SRL

Why MI?
• You may come to regard intellectual ability more broadly.
• You will provide opportunities for authentic learning based on your students’ needs, interests, and talents.
• Parent and community involvement in your school may increase.
• Students will be able to demonstrate and share their strengths.
• When you “teach for understanding,” your students accumulate positive educational experiences and the capability for creating solutions to problems in life.
Why Inquiry Learning?

• The inquiry approach to learning and teaching expounds contemporary learning theory. This approach moves the student into the process of learning and continually reconstructs understandings in the light of experience.

• It encourages students to participate in active investigation, and to integrate, rather than separate knowledge, as they move from acquisition to the development of deep understanding.

• The planning process described as Integrated Inquiry by Kath Murdoch, is a model in which a sequence of activities and experiences is developed to build on and challenge student perceptions. "This sequence is inquiry-based in that it begins with students' prior knowledge and experience and moves through to the development of deep understandings." Kath Murdoch, Classroom Connections, p5.

• In this model, teachers are encouraged to group activities and learning experiences under the following broad headings:
  - Tuning in
  - Finding out
  - Sorting out
  - Going further
  - Making conclusions
  - Taking action

In hindsight, I wonder if the final section was actually needed. The teachers said they were already practicing the approaches and did not necessarily need to consider whether using the approaches created a conducive environment for self-regulated learning development. This again, was significant to the study as far as my own thinking was concerned but was not necessarily a crucial consideration for the teachers. How much is too much information?

On reflection, when designing professional development workshops it may be important to decide carefully what the desired outcomes for teachers are and to design the sessions around these. As stated in Section Two, Chapter Three, I undertook a number of roles in this research study, researcher/professional development facilitator/data gatherer, and the complexity of these roles may have hindered my ability to clearly define the outcomes or actively negotiate outcomes with teachers related to the professional development sessions. I included aspects that were more significant for me, as the researcher, and did not clearly differentiate my role as facilitator. This could be an important consideration for future studies. On reflection, I could have discussed my various roles, the insider/outsider dilemma (refer Section Two, Chapter Three) and negotiated these problematic areas before starting the study.

However, Timperley (2008, p. 16) states that expertise external to the group of participating teachers, for example, the principal, is necessary to challenge existing assumptions and develop the kinds of new knowledge and skills associated with positive outcomes for students. Timperley describes the external expert’s role as having the ability
to make new knowledge and skills meaningful to teachers and manageable within their practice contexts, to connect theory and practice in ways that teachers find helpful, and to develop the ability of teachers to use inquiry to inform their teaching. This description fits my intended role within this research study and was certainly the intended role for the professional development day. The reflective points found in the conclusion of this section will inform and build on my skills as a professional development facilitator in the future.

The last session of the day culminated in a reflection activity, as set out in Slide 26, that focused on helping the teachers to clarify their understandings about self-regulated learning, to identify how the session may or may not impact on their teaching practice, and to envisage any immediate challenges they may have when integrating the strategies and tools in the near future.

**Slide 26**

![Slide 26](image)

Reflection and having a form of closure to a lesson are important strategies for learning. As discussed in Section Two, Chapter Two, Zimmerman’s Cycle of Learning includes the self-reflection phase which involves the learner in self-assessing and reflecting on their progress, adapting and formulating their next learning steps. Reflection is also an important element during the inquiry learning process as students are encouraged to draw conclusions at every phase of the inquiry using reflection strategies, evaluating and re-evaluating their theories, and reviewing both content and the process. The 30-minute reflection period during the last session generated much discussion and resulted in the
sharing of ideas and an enthusiasm to begin the study. Even at this early stage, teachers began to perceive challenges they might encounter, such as, how to teach very young students to set goals. I sat back and listened to their discussions feeling a surge of excitement coupled with apprehension. After a number of years formulating this study it was now time to put it to the test.

Conclusions

On the basis of the above reflections and analysis, I offer a number of key points for consideration:

- Providing opportunities for the teachers to share and discuss knowledge and stories enabled them to make connections between their shared philosophies, and scaffold their ideas around the main focus;
- Providing opportunities for teachers to access their prior knowledge enabled the teachers to build a common understanding and definitions;
- It is important to construct tasks that have an element of challenge but also encourage teachers to reflect and make links to their practice, relatively easily;
- It is important for participating teachers, in an action research project, to develop a shared understanding around the main ideas/theories so that further group discussions, throughout the action research cycle, can employ a common language;
- Teachers need time to reflect, to make connections to the experiential, and to relate the anecdotal. Sharing ‘stories’ can be a powerful means of building a shared understanding;
- It may be beneficial for a research project group to meet informally in a social context, prior to the professional development day, in order to begin building positive, trusting group norms before the study actually begins;
- Careful consideration should be paid to the balance between the need to introduce new theory and the benefit of accessing teachers’ experiential knowledge;
- When designing professional development workshops it is important to decide carefully what the outcomes for teachers are and to design the sessions around these;
• The complexity of the roles I carried out (researcher, PD facilitator, data gatherer) as an action researcher may have hindered my ability to clearly define the outcomes for teachers for a professional development session. However, acting as an external expert can be viewed as a necessary feature of professional development associated with positive outcomes for students;

• When designing professional development sessions, it is important to provide a learning environment that supports the continual social construction of knowledge through the use of tasks designed for frequent reflection, group discussion and debate, and synthesis of new information. It is also important to challenge and encourage contradictory views in order to stimulate thinking.

As Timperley (2008) states, professional development facilitators and designers need to support teachers as they develop the theoretical understandings and tools that will enable them to take a self-regulated, inquiry approach to their everyday practice. Together, these observations will help me to understand better how to provide effective professional development for teachers. As this is a role I frequently undertake, by considering the above observations I will be able to offer more meaningful and more valuable professional development for teachers, in particular, professional development focused on developing self-regulated learners.

As the principal of a school I have an important role in organising, providing and promoting engagement of professional learning opportunities for the teachers in my school focused on developing expectations for improved student outcomes. Timperley (2008) describes three crucial roles school leaders may undertake for gaining and maintaining the interest of teachers and ensuring that their learning is ongoing: leading learning within the school, organising learning opportunities, and developing a vision of new possibilities of better student outcomes, more meaningful curriculum content, or different pedagogical approaches. Timperley states that developing a vision of this kind can serve as a powerful catalyst for teachers to engage in new learning and to formulate specific goals for their learning. I have undertaken this crucial school visioning role during my PhD journey and it is described in the next section.
Part B (1): Narrative of Workshop for Principals on School Vision and Curriculum Delivery

Findings from the research project have been incorporated into my own professional repertoire of practices as evidenced in Section Three of the folio. Here I present and discuss a PowerPoint presentation I developed and used in a seminar, at the invitation of the New Zealand Principal’s Federation, Principal Professional Learning Groups, in Wellington (26 July, 2007) and Christchurch (1 and 2 August, 2007). One aim of my session was to help other principals explore the intersections and interrelationships between my individual professional research journey, the work that I did with the teachers in the study and how these together have impacted on the school in which I worked as a principal. Another aim was to show the interrelationships between the research journey and the release of the New Zealand Draft Revised National Curriculum Statement in 2006. There are 39 slides in this presentation; I include them all here only in order to set the specific context for the specific points I want to make about how I have used the research study to inform my own practices and to develop a school vision and curriculum delivery framework.

The teachers, six from my own school, who participated in this study, went on their own individual professional development journeys focused on integrating self-regulated learning strategies and skills into their separate classroom programmes. In turn, their experiences contributed to a school-wide initiative which impacted on the development of the school’s Charter, Vision Statement, Strategic Plan, and curriculum delivery framework. In New Zealand each school, in consultation with their school community, is required to develop a charter that contains its strategic plan and goals and targets for student outcomes. The charter should include a school’s community shared ‘vision’ and sense of purpose as well as a framework of how it will be achieved. I will now explain, and share, my reflections on how the process occurred.
The school’s development journey was timely as the Charter and three-year Strategic Plan were due to be redeveloped, and this coincided with the release of the new Zealand Ministry of Education Draft Revised National Curriculum Statement in July 2006 (slide 3).

From mid 2006 to early 2008, full consultation took place (parents/caregivers, teachers, students, Board of Trustees) through written survey, phone survey and group meetings. The consultation took place in order to define the school’s strategic direction and learning foci for the following three years. Over a period of time, a new vision and mission statement were developed and a curriculum framework was drafted. During this period my research project was undertaken resulting in two levels of data gathering: one at the macro level, redeveloping the school charter and three-year strategic plan, and one at the micro level, that is, as part of the action research project.

At the time, I was unaware of how the gathering of classroom data on the integration of self-regulated learning strategies and tools would impact on the gathering of data/ideas on the school’s strategic direction and curriculum delivery. In hindsight, I now realise how my beliefs in and passion to develop self-regulated learners, combined with the majority of the teachers at my school taking part in the research project, helped to shape the school’s curriculum delivery framework. Embarking on a shared learning journey enabled us to develop a shared vision and shared goals focused on helping students succeed and achieve. On a practical level, how did we accomplish this?

At a teacher-only day in November 2006 we unpacked the New Zealand Revised Draft Curriculum and found clear correlations between our developing framework and the draft. However, marrying concepts, terminology, and design between the draft statement and our draft curriculum delivery framework only provided a paper commitment and would not necessarily lead to a deeper commitment and understanding. Achieving a deep commitment and true implementation of the school’s curriculum delivery framework would involve achieving cultural congruence, that is, continually developing awareness, knowledge, and skills in order to live our school vision and curriculum delivery model.
How would we ensure our commitment was not just a common language but deeply understood and lived? (This framing question is highlighted in slide 4). We aspired to be a child-centred school that catered for diverse learners, in line with the thinking of the New Zealand Education Minister who articulated a vision of ‘personalised learning’ (MOE, 2006e) for all students. According to the Ministerial statement, personalised learning ensures that children will know how to take control of their own learning and teachers will have high expectations of every student, know how they learn and adjust their teaching to meet students’ learning needs. These appeared to be high aspirations but we undertook a journey with these in mind.

We began a development and consultation phase in order to create a framework we could live, that is, one that could be articulated, understood and practiced by all levels of the school community. Firstly, as a staff we examined the notion of cultural competence (see slide 5). A recent discussion of cultural competence, offered by King, Sims and Osher (2008), view it as the integration and transformation of knowledge about individuals and groups of people into specific policies, practices and attitudes used in appropriate cultural settings to produce better outcomes. In April 2007, at a teacher only day, we interpreted the meaning of cultural competence to imply that as a school we would function in a manner, defined by the whole school community that would benefit all members of the school community and most importantly benefit all learners. We viewed cultural competence as entailing the development of attitudes, sensibilities, actions and altered behaviours culminating in respectful understanding. We viewed it as a long-term process involving perpetual individual and whole school efforts in order to be effectively achieved. I searched the literature for an example of what this long-term commitment may mean in practice.

Research published in New Zealand in March 2007 by Bishop, Berryman, Tiakiwai and Richardson, reported the main influences on the educational achievement of Year 9 and 10 Maori students. It presented a ‘Culturally Responsive Pedagogy of Relations’ where participants in the learning context are connected to one another through the
establishment of a common vision for what constitutes excellence in educational outcomes (Bishop, et al. p.1). The research revealed how teachers, in changing how they related and interacted with Maori students in their classrooms, could create a context for learning wherein these students’ educational achievement could improve. Together with other information from the literature and narratives of experiences from those parenting the students, their principals, and their teachers, an ‘Effective Teaching Profile’ was developed and formed the basis of a professional development intervention, that when implemented with a group of 11 teachers in four schools, was associated with improved learning, behaviour, and attendance outcomes for Maori students in the classrooms of those teachers who had been able to participate fully in the professional development intervention (Bishop et. al., 2007, p. 1). The ‘Effective Teaching Profile’ was primarily developed to inform teachers about improving Maori students’ education; however, I viewed it as relevant information for the teaching of all students irrespective of their ethnicity.

I used the ‘Effective Teaching Profile’ (Bishop et al., 2007, p. 193) as a professional development tool (refer to slides 6, 7, 8) in order to, firstly, ascertain which dimensions teachers were or the school was fulfilling and, secondly, which dimensions needed development (this was administered as a survey). In hindsight, I realise the survey probably only provided descriptions of what the teachers said they did and probably didn’t provide an accurate description of what they actually did in the classroom. This was a starting point only.

As noted previously, to achieve cultural competence both the individual and the school need to employ effective teacher dimensions over a continued period of time (Kennedy, Bronte-Tinkew and Matthews 2007). This can be viewed as a school-wide deep commitment to attaining/improving cultural competence. We viewed attaining cultural competence as an important element towards achieving cultural congruence, that is, a shared articulation and understanding of the school vision and strategic direction across the whole school community. On reflection, I now realise that many of the ‘Effective Teacher Profile’ dimensions had co-relations to the self-regulated learning strategies
trialed in this research study and to the classroom environments within which the study took place. For example, dimension five of the ‘Effective Teacher Profile’ (Bishop et al., 2003, p. 98) states that the teacher would use strategies that promote effective teaching interactions and relationships with their learners. The teachers in my study shared the learning intentions, developed success criteria with their students, helped them to set and monitor their goals, and engaged them in regular reflection: all strategies that have the intention of promoting effective teacher student interactions around learning (refer Section Two, Chapter One). Dimension two of the ‘Effective Teacher Profile’ states that teachers should help learners how to develop personal independence (Bishop et al., 2007, p. 98). By integrating self-regulated learning strategies and tools the teachers in this study were aiming to develop student independence and self-managing learners. Our ability to achieve cultural competence was enhanced by participation in this action research study.

Achieving ‘cultural congruence’ throughout the whole school community became the next hurdle. A major step was carrying out a full consultation that was thorough and meaningful. Past experience showed community surveys and meetings would not be very effective. I had carried out similar consultation processes at five other schools with limited and similar results. The layers of consultation were clearly defined and structured to ensure that a common vision could be articulated (refer to slide 10, Section Three, Part B (2).

This whole process involved many staff development sessions over a period of months where teachers reflected on the consultation data, formulated draft frameworks, shared viewpoints, and articulated and defined their teaching beliefs. As pointed out in Section Three, Part A, providing an environment that supports the continual social construction of knowledge, providing opportunities for frequent reflection, group discussion and debate, and synthesis of new information could be considered important elements of teacher professional development, especially when developing a school vision and curriculum framework. The school community adhered to positive large group norms, and expected levels of trust to operate, whereby people could offer their views and opinions in a manner that was acceptable and valued.
In order to help the whole school community form an understanding of the framework, and to ensure a community articulation we decided to develop a visual metaphor of our framework (slide 11), that is, visual images representing the main concepts of the framework. As a result, the teachers and students together developed a banner to be hung in all classrooms. The students felt it should be easily connected to our local environment, unique to Central Otago, embodying all main elements of the curriculum delivery framework. In essence, the banner provided a visual image of the school’s vision. For example, the clock on the hill represented life-long learning and the bridge stood for the importance of having strong connections between home and school.

**Key Features**

In the following section of my presentation to the principals, I aimed to (slides 12-20) describe the main elements of the Alexandra Primary School Charter and curriculum delivery plan, of which self-regulated learning is a key competency component. The new Vision Statement read (slide 12): *Alexandra Primary School - My Pathway to the Future.* The vision was underpinned by the belief that education throughout life (life-long learning) is developed from the foundation of four pillars: learning to be, learning to know, learning to do, and learning to live together (we adapted these from the 1997 UNESCO report *Education for the 21st Century*). The four pillars encompass *learning for life*, the main aim of the school Charter (slide 13).

The main approaches to teaching and learning at Alexandra Primary School were (as summarised in slide 14): a child-centred approach, utilising an integrated inquiry curriculum, and incorporating a self-regulated learning programme. In hindsight, I now realise all of these approaches were integral aspects of this research study (refer Section Two, Chapters One and Two). The data collection for the research study, which had been completed, may have influenced and informed the approaches that the school community agreed on. The whole school community was aware of and had a broad understanding of these teaching and learning approaches.
I also now fully realise how interrelated my own research journey, the journey of the teachers, and the school’s developmental journey were. I believe the interrelated nature of the journeys enhanced the development of the school’s charter and curriculum delivery plan, ensuring it encapsulated the beliefs and vision of the main stakeholders. In essence, we created a learning community and as the school leader, I played a fundamental role in promoting this.

**Developing Clear Links**

The next step in the curriculum review and renewal process at Alexandra Primary School was to undertake a close examination of the New Zealand Draft Revised National Curriculum Statement, by myself and the teachers within my school, in order to develop clear links between the national statement and the school’s developing curriculum framework. In the presentation for the principals, slides 21, 23, 25, and 27, aim to show each pillar of learning linked to the appropriate key competency group. Slides 22, 24, 26, and 28, show a multi-level venn diagram naming the main interconnecting learning experiences that we hoped students would experience at our school.

The Alexandra Primary School Curriculum Delivery Framework, developed so far, had no clear links to specific learning themes. With the adoption of initiatives such as integrated inquiry learning (refer Section Two, Chapter One), schools in New Zealand no longer needed to adhere to a revolving three-year teaching topic/content plan. In-line with the revision of the National Administrative Guideline One (MOE, 2001a) schools were no longer required to cover all curriculum achievement objectives and could design curriculum content coverage at a local level. However, what did this localization of the curriculum mean? Flockton (2007) states that one of the main goals of the revision of the national curriculum was to strengthen school ownership of curriculum and warned that it was fundamentally important that the Revised New Zealand National Curriculum document itself makes very clear the scope available for localisation.

In the final version of the New Zealand Revised Curriculum released in November 2007, after the curriculum review and redevelopment process at Alexandra Primary School, the
national curriculum provides the framework and common direction for schools, regardless of type, size, or location. It gives school communities the scope, flexibility, and authority they need to design and shape their curriculum so that teaching and learning is meaningful and beneficial to their particular communities of students. In turn, the design of each school’s curriculum should allow teachers and the school community the scope to make interpretations in response to the particular needs, interests, and talents of individuals and groups of students in their classes. The New Zealand Curriculum sets the direction for teaching and learning in English-medium New Zealand schools (in New Zealand there are also separate schools that have Maori as the language of instruction). But it is a framework rather than a detailed plan. This means that while every school curriculum must be clearly aligned with the intent of this document, schools now have considerable flexibility when determining the detail. In doing this, they can draw on a wide range of ideas, resources, and models (MOE, 2007). Localising the curriculum, therefore, enables New Zealand schools to interpret and develop the curriculum in line with its unique school vision.

Through my professional reading at the time, I was aware that countries, such as Australia and England, used specific learning themes to underpin their national curriculum statements, as opposed to the New Zealand Draft Revised National Curriculum Statement which was underpinned by the key competency groups (refer to Section Two, Chapter One). The New Zealand Draft Revised National Curriculum Statement however, offered a very limited overview of learning themes, naming them as sustainability, citizenship, enterprise, globalisation, and critical literacies, with no detailed explanations or possible contexts (MOE, 2006d). By critically discussing the different models from Australia (The New Basics) and England (National Curriculum Programmes of Study) the teachers articulated what a ‘learning theme’ meant to our school, why we needed learning themes, and which learning themes would fit our school vision and teaching focus (For my presentation to the principals I summarised this step in slides 29-33).

Again, from undertaking the process, I was reminded how important it is to ensure that professional development is relevant, stimulating, directed and challenging. Providing
relevant articles to critique and meaningful tasks (as outlined in Section Two, Part A), for example, considering theoretical definitions and making connections to practice, may help to develop robust platforms upon which teachers can build knowledge and theory.

By the middle of the curriculum development process the school’s curriculum delivery framework now contained key elements but it was necessary to move from the philosophical to the practical – in other words, what would this framework mean for students?

The New Zealand Draft Revised National Curriculum statement suggested that the Key Competencies, such as Managing Self, should be developed ‘in combination’ and gave as an example, ‘when researching an area of interest’ (MOE, 2006, p. 29). The document then described, under bullet points, what appeared to be a typical inquiry learning process. This was a significant stage in the Alexandra Primary School curriculum development thinking. We perused the key points from the Draft Revised National Curriculum Statement and made clear links to the appropriate key competency group in brackets (slide 34). This research study is underpinned by the notion that self-regulated learning skills should be developed within a conducive learning environment such as an integrated inquiry approach to learning (refer Section Two, Chapter One). The Draft Revised National Curriculum Statement reinforced this notion.

Making clear links between one of our main learning approaches, that is, integrated inquiry learning, and the key competency groups, did not ensure a shared understanding or shared articulation of what the key competencies meant to our school. It was necessary to ‘unpack’ what a competency was, why they were labelled as groups and try to formulate a shared understanding.

Teachers read and reflected on recent New Zealand literature on the key competencies with the intention of developing an understanding of and a statement on the key competencies suitable for our school. Key ideas that we interpreted and adopted were from readings by Carr (2006) and Hipkins (2006, 2007) (slide35). Through discussions
during staff meetings we viewed key competencies as abilities to aspire to, and, more complex than skills. In contrast to the Essential Skills that the previous New Zealand National Curriculum contained, the key competencies were groups of skills which would continue to develop over time shaped by interactions with people, places, ideas and things. Key competencies needed to be seen as wholes and in combination would help students develop as life-long learners. This was a main focus of our school vision and mission.

We adopted Carr’s (2006) *Dimensions of Strength* (slide 36 summaries this) for the key competencies, as each of the criteria connected powerfully to our school vision and main teaching approaches, for example, *Mindfulness*, whereby the learner takes responsibility for, takes the initiative and develops the key competencies in strength, has clear links to the development of a self-regulated learner.

We were now able to articulate what the key competencies meant for our school and how we intended developing them (slides 37, 38). The next step was to define which key competencies we would be focusing on over the next three years

In the presentation to principals, slide 39 highlights the key competencies that we identified and which underpinned the teaching and learning foci. These specific key competencies have clear links to the school’s strategic direction and they underpin the main teaching approaches and all programmes. Under the key competency group *Managing Self* key aspects of self-regulated learning were described: setting and monitoring goals and self assessing. These were the intended main areas of development for the following two years.

This presentation encapsulated the school’s journey to define, articulate, and *live* its school vision. It was driven by my own learning journey and the input from teachers who participated in the study.
As stated above, one aim of my session was to help other principals explore the intersections and interrelationships between a professional research journey, the work that I did collaboratively with the teachers in the study, and how these, together, have impacted on developing a learning community in the school in which I worked as a principal. Feedback, gathered from presentation evaluation sheets and direct conversations, from principals and teachers who attended the sessions offered the following feedback:

- The seminar allowed participants to form a ‘big picture’ of a possible school redevelopment journey. Many had begun their journeys by undertaking school-wide professional development in literacy or numeracy, or by consulting their school communities on their school charter and strategic plan development, but none had made clear links between all the inter-related aspects to form one coherent vision or pathway;
- It offered ‘next step’ advice for many who were only beginning their journey;
- It included recent relevant research associated with teaching and learning which was directly related to school redevelopment. Showing clear links between theory and practice, led principals and teachers to remark on the value and impact of teacher classroom research;
- It challenged them to consider concepts such as ‘cultural competence’ which they had not previously encountered;
- It provided them with new resources to utilise within their schools, such as the ‘Effective Teacher Profile’.

I am always honoured when invited to present at teacher/principal conferences and seminars, and value any feedback. I am humbled and gratified by this professional recognition which has eventuated through undertaking this PhD study.

In February 2008 the Ministry of Education in New Zealand released the position paper Kiwi Leadership for Principals (the KLP) which provides leadership principles, especially suited to the distinctive contexts of Aotearoa New Zealand. The main purpose
of the KLP is to present national benchmarks for principals that reflect the qualities, knowledge and skills required to lead New Zealand schools from the present to the future. At the heart of the model is a clear focus on how a school community can work together to improve social and educational outcomes for all students. One main aspect of effective educational leadership is noted as developing and maintaining schools as learning organisations. Inter-weaving my learning journey with that of my teachers and the school community, enabled the school to be a learning organisation in the true sense. The next section describes how I have used the experience from undertaking this study and applied it to a practical situation.

The KLP describes four areas of practice a principal should employ to lead change in a school. One area is termed: Pedagogy: Knowledge about teaching and learning. The descriptors for achieving this aspect are: to participate in professional learning and be recognised as “leading learners” in their school; are regarded and consulted as professional leaders with significant knowledge about teaching and learning; have direct hands-on involvement with curriculum design and implementation; build a professional learning community that supports, challenges, and inquires into its own professional practice; and to encourage innovative practice. On reflection, my PhD learning journey has enabled me to achieve all of the above features. I ‘lead learning’ in my school as well as in other schools, I am regarded as a professional leader by my peers. For example, I have been asked in the past 12 months to present at three regional principal conferences as well as at a number of individual schools. I am presently involved in a combined New Zealand Principals Federation and Ministry of Education pilot project trialing a new form of principal appraisal facilitating 10 schools in my region. I encourage innovative practice both within my own school and in other schools by offering new approaches to teaching and learning, for example, the self-regulated learning intervention used in this study. I build professional learning communities both within and outside of my own school, and I have had direct hands-on involvement in designing curriculum delivery frameworks for a number of schools.
Over the past year, I have presented this seminar on several occasions to groups throughout New Zealand, and before each presentation, I review the slides and commentary to reflect recent changes in my journey. My journey has been and continues to be dynamic, ever changing and growing, affecting the journey of the teachers in my school as well as the whole school community. Presently, I am principal of a large (530 students) city school which is in the process of reviewing its curriculum delivery framework. I view the school as a ‘moving’ school (Stoll, 1999), that is, a community working together to respond to changing context, to keep developing and defining where we are going, and having the will and skill to get there. All school principals face an important task in interpreting any new national curriculum statements for their staff and school community. As Johnson (2008) states, the key difference a principal can make is in developing a combined school ownership of the particular vision that is appropriate for that community. This presentation set out to offer a practical example of how this could be achieved.
Part B (2): PowerPoint of Workshop for Principals on School Vision and Curriculum Delivery

Slide 1

PPLC Wellington Christchurch July August 2007
One School's Journey

Slide 2

Teachers’ Learning Journey
Principal’s Learning Journey
School’s Learning Journey
Slide 3

Significance of the NZ Draft Curriculum

• It was timely as we were about to develop a new 3 year Charter and strategic plan.
• Initial response – we are already doing it, only need to tweak things to fit …
• After consultation and development workshops a clear, meaningful, unique, curriculum framework was developed.
• Important point - surface versus deep commitment through action research project.

Slide 4

Surface versus deep commitment – What does this look like/mean?

How do we ensure we are child centred?
How can we cater for diverse learners?
How can we personalise learning?
Are we culturally competent?
Slide 5

Cultural Competence

- In theory, "cultural competence" in the classroom means being able to teach children from diverse backgrounds.
- Cultural competence is not composed of merely attitudes or sensibilities; cultural competence is defined by actions and altered behaviours that accompany respectful understanding.
- Developing cultural competence is a long-term process. Accordingly, cultural competence cannot necessarily be achieved through compartmentalized instruction sessions or interventions – it must be honed through perpetual individual and institutional efforts in order to be effectively employed.

Slide 6

Effective Teaching Profile

Te Kōtahitanga Effective Teaching Profile
(Bishop, et al. 2003)

Effective teachers of Māori students create a culturally appropriate and responsive context for learning in their classroom. In doing so they demonstrate the following understandings:

- they positively and vehemently reject deficit theorising as a means of explaining Māori students’ educational achievement levels (and professional development projects need to ensure that this happens);
- and teachers know and understand how to bring about change in Māori students’ educational achievement and are professionally committed to doing so (and professional development projects need to ensure that this happens);

Slide 7

In the following observable ways:

Manaakitanga: They care for the students as culturally-located human beings above all else.
(Mana refers to authority and āki, the task of urging some one to act. It refers to the task of building and nurturing a supportive and loving environment).

Mana motuhake: They care for the performance of their students.
(In modern times mana has taken on various meanings such as legitimation and authority and can also relate to an individual’s or a group’s ability to participate at the local and global level. Mana motuhake involves the development of personal or group identity and independence).

Whakapiringatanga: They are able to create a secure, well-managed learning environment by incorporating routine pedagogical knowledge with pedagogical imagination.
(Whakapirlingatanga is a process wherein specific individual roles and responsibilities are required to achieve individual and group outcomes).
Wānanga: They are able to engage in effective teaching interactions with Māori students as Māori.
(As well as being known as Māori centres of learning wānanga as a learning forum involves a rich and dynamic sharing of knowledge. With this exchange of views ideas are given life and spirit through dialogue, debate and careful consideration in order to reshape and accommodate new knowledge).

Ako: They can use a range of strategies that promote effective teaching interactions and relationships with their learners.
(Ako means to learn as well as to teach. It refers both to the acquisition of knowledge and to the processing and imparting of knowledge. More importantly ako is a teaching-learning practice that involves teachers and students learning in an interactive dialogic relationship).

Kotahitanga: They promote, monitor and reflect on outcomes that in turn lead to improvements in educational achievement for Māori students.
(Kotahitanga is a collaborative response towards a commonly held vision, goal or other such purpose or outcome).
**Slide 10**

**Consultation and Development through:**

- TOD & staff meetings – examining what is important, where are we headed, what does it look like …
- Community survey on teaching & learning
- Kid’s curriculum group meetings
  - Designed own survey
  - Surveyed students
  - Parent/caregiver phone survey
  - Collated results and reported the findings
- Staff/kid’s curriculum group developed visual metaphor
- Draft framework developed and shared
- Banner integrated into classrooms.

**Slide 11**

**Our visual metaphor**
Vision Statement:
Alexandra Primary School
My Pathway to the Future

We believe that education throughout life (life-long learning) is developed from the foundation of four pillars:

Education takes place throughout life in many forms in an all-encompassing fashion. Likewise the four pillars cannot stand alone. (UNESCO)
How we want students to learn
Our Approaches To Learning

- Child Centered
- Integrated Curriculum
- Self-Regulated Learning Skills
- Inquiry Learning Process
- Values HOM Programme

Our Approaches to Learning

**Child Centered:**
Children gain an understanding of the world around them by experiencing a curriculum that is meaningful. Children learn in a nurturing, motivating environment where a healthy attitude towards learning is developed. By providing a safe, secure and warm environment, children develop independence, confidence and a positive sense of themselves and the world around them.

**Integrated Curriculum:**
Providing meaningful contexts for learning enabling learners to make connections within & across key learning areas. As students investigate authentic real-world problems they develop sophisticated understandings of their world.

**Inquiry Learning Process:**
Students are actively involved in learning and continually reconstruct understandings in the light of experience. It encourages students to participate in active investigation, and to integrate, rather than separate knowledge, as they move from acquisition of facts to the development of deep understanding. To work collaboratively and independently to create new knowledge.

**Self-Regulated Learning Skills:**
Developing life-long learning skills - to set and monitor goals, make plans, act strategically, persevere, reflect, self-assess, plan next learning steps, learn how they learn best.
Values & Habits of Mind

Values are those things that really matter to each of us ... the ideas and beliefs we hold as special. Habits of Mind describe the kinds of "thinking habits" we need to have in order to be as successful as possible at solving all sorts of problems. Both Values and Habits of Mind need to be understood and practiced regularly in order to become "second nature".

At Alexandra Primary School we are currently focusing on developing the following Values and Habits of Mind:

**Programme**

**Term 1:**
- Respect & Listening to Others
- Honesty & Managing Impulsivity
- Citizenship & Thinking Interdependently

**Term 2:**
- Responsibility & Persisting

**Term 3:**
- Respect & Listening to Others
- Honesty & Managing Impulsivity
- Citizenship & Thinking Interdependently

**Term 4:**
- Responsibility & Persisting
Slide 18

Begins with students' prior knowledge and builds on this
Deep understanding
Construct their knowledge in many different ways

Slide 19

Inquiry Learning Process
(Inquiry Learning Process
(Kath Murdoch)

Tuning In
Making Conclusions
Taking Action
Finding Out
Going Further
Sorting Out
A Self-Regulated Learner

- Sets & monitors personal goals
- Controls their own learning environment
- Monitors their progress against models & exemplars
- Reflects regularly
- Can articulate their next learning steps

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4 Pillars of Learning (UNESCO)

encompassing the Key Competency Groups (KCG)

1. **Learning to Know (pillar)**
   Developing a broad general knowledge

   **Using Language, Symbols, and Texts (KCG)**
   Interpreting & using words, numbers, images, movements, & technologies in a range of contexts; making appropriate choices of language & symbols.
Through learning experiences in:

- English
- Numeracy
- Social Sciences
- The Arts
- Technology
- Science
- Languages
- Health & PE

4 Pillars + KCG

2. **Learning to Do (pillar)**
   Developing a broad range of skills & strategies.

**Thinking** (KCG)
   To think creatively & critically, reflect on their learning, actively seek knowledge, challenge assumptions.

**Managing Self** (KCG)
   To be self-motivated, set personal goals, make plans, be resilient, act appropriately.
Slide 24

Through developing skills in:

- Self-Regulated Learning
- Literacy
- Numeracy
- Thinking
- ICT
- PE
- The Inquiry Process
- Info-Literacy

Slide 25

4 Pillars + KCG

3. **Learning to Be (pillar)**
   Developing dispositions, intra-personal skills, physical capacities, aesthetic sense, communication skills, the ability to act with a better sense of judgement & responsibility.

   **Relating to others (KCG)**
   To interact effectively, listen actively, to negotiate, to share ideas.

Slide 26

Through experiencing programmes in:

- Values & HOM
- Multiple Intelligences
- Health Education (DARE; Life Education; Skills for Growing; Kia Kaha…)
- EOTC
- PE & Sports
- Inquiry Topics
- The Arts
4 Pillars + KCG

4. **Learning to Live Together** (pillar)
Developing the ability to work in a team & learn collaboratively

**Participating & Contributing** (KCG)
Responding appropriately as a group member, participating & contributing, creating opportunities for others to participate.

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Through participating in:

- Inquiry Learning Projects
- Buddy Programme
- School Council
- Cooperative Collaborative Learning Activities
- Thinking Tools Activities
- Leadership Training
- PE & Sports

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**Learning Themes**

- A learning theme is based on the idea that people acquire knowledge best when learning in the context of a coherent "whole," and when they can connect what they're learning to the real world.
- The four broad learning themes, while comprised of distinct essential knowledge, essential skills and activities, have overlapping aspects that work together to strengthen each theme.
- The learning themes are focused on the future global citizen ethos. That is, they encompass topics that will inform, challenge and enlighten students about their present world and their future world.
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**Sustainability**
Understanding the need to maintain & improve the quality of life now without changing the planet for future generations.

**Throughlines:**
- There are things we can all do to live more sustainably with the environment.
- People have different views and values related to the way we live with and manage the environment.
- There are laws, systems and cycles that govern the way the physical and natural environment works.
- We change as we grow – physically, mentally, emotionally and spiritually.
- The choices we make in our lives continue to impact on our identity and wellbeing.
- Events of the past influence the way communities live and the decisions they make about their future.
- There are many things we can do to look after our health and wellbeing.
- We can use a range of strategies and make choices to help keep safe.

**Possible Learning Contexts:**
- peace/war, wealth/poverty, environmental issues – extinction, pollution, recycling, ozone, fossil fuels, leisure activities, group dynamics, history, keeping ourselves healthy & safe.

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**Communication**
Making sense of and communicating with the world.

**Throughlines:**
- We express ourselves in many different forms, for many different reasons, for many different audiences.
- Narrative is a powerful form of communicating with the world.
- To understand gives the ability to respond appropriately.

**Possible Learning Contexts:**
- dance, drama, visual art, music, investigating, designing, media studies, cultures of the world.
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Diversity
Understanding & respecting differences with an open mind. Who we are.

Throughlines
There is great diversity in both the built and natural environment. The way we see and feel about ourselves has a profound affect on the way we live, behave and interact with others.

Possible Learning Contexts:
languages, world communities, world events, cooperative/collaborative projects.

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Citizenship
Learning how to become active informed and responsible citizens.

Throughlines:
People organize the way they live and work together in a range of ways. Structures, such as rules and laws are designed to help groups function well. With rights, come responsibilities. Each person has a role in and can make a contribution to his/her community. There are things we can do to make a positive difference to the lives of others at both a local and global level.

Possible Learning Contexts:
governments, local community life, global living, elections, Olympics/Commonwealth games.

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Developing the Key Competencies in Context Through the Process of Inquiry Learning

- Integration of ELAs & ICT tools to communicate knowledge (Using Language, Symbols & Texts)
- Self-Regulated Learning Skills (Managing Self)
- Thinking Tools (Thinking)
- Cooperative Collaborative Activities (Relating to Others)
- Inquiry Process Phases (Participating & Contributing)
Key Competency Development

Key Ideas


- We view KCs as 'capacities to aspire'.
- Competencies are more complex than skills.
- Competencies continue to develop over time, shaped by interactions with people, places, ideas and things.
- Key competencies are complex, have different intentions, interactions and learning opportunities. Because 'competence is a product of the interaction of attributes of individuals and the context in which they operate', scrutiny of the characteristics of individual key competencies alone is insufficient to explain effective performance in a range of settings.
- Because of their interactive nature, there is no universal and context-free range of competency-strength for any one learner in all contexts; it doesn't make sense to say, for instance, that a particular student has reached a particular level for 'Relating to others'.
- Key competencies need to be seen as wholes, not just as the sum of their parts.
- The learner who is to build rich connections across all five types of resources (the KC groups) is likely to become a lifelong learner.

Dimensions of strength for the key competencies:

- **Mindfulness** – whereby the learner takes responsibility for, takes the initiative and develops the key competencies in strength.
- **Breadth** – connecting the key competencies and transferring them to all aspects of school life (community life).
- **Frequency** – the key competencies will become more frequent over time, within the same intention. By providing robust platforms (Inquiry Learning, SRL skills, and the Values and Habits of Mind programme) the key competencies will be used in other situations.
- **Complexity** – recognizing the need to use the key competencies for different purposes. (Carr, 2006)
At APS we develop and strengthen the key competencies through particular learning programmes – Inquiry, Values and Habits of Mind, and Self-Regulated Learning - and develop formative information for teachers, learners and parents through the activities within these programmes.

The table that follows defines the key competencies which presently, underpin our teaching and learning foci. The key competencies are viewed as a map not a level progression. They will guide teacher planning, may be used as a class and or individual self reflection tool, and as a goal setting tool. They underpin our “being” at this particular time.
<table>
<thead>
<tr>
<th>Thinking</th>
<th>Managing Self</th>
<th>Participating &amp; Contributing</th>
<th>Inquiry Learning; SRL</th>
<th>Using Language, Symbols, &amp; Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can reflect on their learning to form a deep understanding of themselves as learners.</td>
<td>Can use a variety of reflective tools to think creatively, analytically to problem solve with effect.</td>
<td>Can communicate information, experiences, &amp; ideas clearly to produce a variety of texts, using language &amp; symbols with effect.</td>
<td>Can read, form an opinion, justifying why we use symbols, texts &amp; languages.</td>
<td>Always acts in a respectful manner in all situations.</td>
</tr>
<tr>
<td>Can use a variety of reflective tools.</td>
<td>Can reflect on their learning using specific reflective tools.</td>
<td>Can use simple thinking tools.</td>
<td>Begins to communicate information, experiences, &amp; ideas in simple ways.</td>
<td>Displays respect towards others.</td>
</tr>
<tr>
<td>Can cooperate successfully in a group situation undertaking a variety of roles with effect.</td>
<td>Can compromise their point of view to reach a consensus.</td>
<td>Can work cooperatively in a group.</td>
<td>Can work cooperatively in a group.</td>
<td>Can work cooperatively in a group.</td>
</tr>
</tbody>
</table>

**Thinking**
- Inquiry Learning; SRL
- Using Language, Symbols, & Texts
- Participating & Contributing
- Managing Self

**Slide 39**
Section 4 Folio Conclusion

While the reporting of action research has been described as “little more than picturesque journeys of self-indulgent descriptions” by Brooker and Macpherson (1999, p. 210), action research offers valuable knowledge and is a powerful means to transform both individual practice and ongoing school improvement. In order to substantiate this belief I will undertake an evaluation of action research, that is, examine action research as an enterprise (Bartlett and Pigott-Irvine, 2008, p. 9), consider the negative critique of action research, and respond using my experience from this action research study.

Bartlett and Piggot–Irvine (2008, p. 43) note that a great deal of literature relates to ‘how to do quality’ or ‘good’ action research but only a small number of writers describe the process of evaluating the quality of action research. In order to develop my own evaluation of this action research study I employed the ‘basics’ of quality and rigour as developed by Bartlett and Piggot-Irvine (2008, p. 44).

The first ‘basic’ is that action research fills a need for research that is practical and solves problems as compared to traditional research. When I first undertook this study I was unsure which methodological process to employ, however, as the study developed I realized that the very practical nature of the intervention and the need for teacher participant ownership, collaboration, and flexibility was best suited to action research methodology. Action research has a practical context-based focus and aims to improve practice for those involved, and to develop knowledge and understanding of one’s practice that can be shared with others. As a result of this study, many of the teacher participants benefited by the positive effects of the intervention and self-generated theory directly linked to improving their practice. They constructed knowledge and understanding around how to integrate self-regulated strategies and tools into class programmes and their insights may bring about change and development in knowledge among other teachers.
The second ‘basic’ is that action research includes a process of evaluative self-examination and constructive critique. Bartlett and Piggot-Irvine (2008) report that action research can be viewed as focusing on change while neglecting reflection. However, as discussed in Section Two, Chapter Three, action research is a reflective collaborative process in which participants examine their own educational practice systematically. The data gathering techniques used in this study offered the teachers opportunities to reflect on and constructively discuss their practice as they integrated the self-regulated strategies and tools, especially in regard to problems they faced and solutions they devised and implemented. As discussed in Section Two, Chapter Five, the case study one teacher experienced demanding rational and moral processes in making reasoned judgments about the classroom intervention he was trialing. It appears that the challenging experience led him to reflect ethically on his classroom practice and to develop meaningful conclusions. The action research process offered me, the researcher, multiple opportunities to reflect and examine my beliefs and practice. This is evidenced in Section Three, Part B, where I narrate and analyse the processes, intersections and interrelationships between my own professional research journey and developing a school vision and curriculum delivery framework.

Criticisms of action research, noted by Sarland (1995), include the validity of insider research methodology, the tendency of reports to rely too heavily on description, a tendency to be technicist and to ignore wider contexts, and an absence of reference to known research findings. To counter-act these criticisms, the third ‘basic’ of evaluating action research is to provide guidelines to achieve quality and rigour. Bartlett and Piggot-Irvine (2008) provide examples of guidelines from the literature which include epistemological, pragmatic and ethical criteria. By researching elements of ‘good action research’ and considering ethical issues (refer to Section Two, Chapter Three), achieving the criteria for ‘quality’ and ‘rigour’ in this study has been a priority.

Eilertsen, Gustafson and Salo (2008) state that action research is about negotiating and building coalitions as well as serving the interests of teachers by empowering them and giving them ownership. They argue however that action research merely serves as a vehicle aimed at improving either techniques or the efficiency of
practice and has lost at least some of its critical stance. They recommend that the ‘micropolitics’ of a school, that is the patterns of formal power and formal influence, be addressed and dealt with during action research. Eilertsen, Gustafson and Salo suggest that in order to do this the action researcher ought to have firstly become acquainted with the everyday life of the school in question.

As discussed in Section Two, Chapters One and Three, I was personally acquainted with both schools that took part in this study. However, I did not create a public arena in which the ‘micropolitics’ of both schools could be explicitly and openly discussed and reflected upon. This may have had a critical effect on the type of responses offered by the teachers. As discussed in Chapter Five, case study teacher two offered comments that I termed technically descriptive, that is, a recount of practical problems followed by a description of the solutions. The teacher included very little comments which revealed her thinking. As both her principal (she was a teacher within my own school) and the researcher I may have presented as a powerful influence which may have affected her and guided her unconsciously professional practices. By providing an opportunity to discuss and reflect upon the power relations within the school at the outset of the study, I may have encouraged the teacher to act in a way that enabled them to make the most of their professional experience and offer more critical observations and reflections. This could be an important point for action researchers to consider, especially researchers with an ‘insider’ facilitator role (refer Section Two, Chapter Three).

Pigott-Irvine (2008) states that commitment by action research to produce change in individual and complex settings is the fourth ‘basic’. One major criticism of action research findings is the lack of generalisability of the findings (Dick, 2000). I have alluded to this short-coming in Section Two, Chapter Six. Bartlett and Pigott-Irvine (2008, p. 38)) report the learning that takes place through the action research cycle transforms the practitioner, the social context, and the mediating tools involved, making generalization impossible. The authors refer to the comments of Meyer (2000, p. 9) who believes that action research acknowledges subjectivity, rather than seeking objectivity, and that trustworthiness of data can be achieved through triangulation and reflexivity. This study employed three different data collection methods in order to access multiple voices and
perspectives. Meyer states that readers can judge the relevance of the action research findings for their own social situations when it is reported in detail and in accessible language. This study fulfilled both these criteria by creating practical theory that makes sense to other practitioners.

The last ‘basic’ is that there are ethical issues to be observed as an aspect of quality in action research. Bartlett and Pigott-Irvine (2008) state that action research needs to demonstrate ethical awareness and accommodations in its planning, implementation, and reflection on action and research through the action research cycle. As outlined in Section Two, Chapter Three, I have demonstrated ethical awareness and accommodations within the design of this research study. From the outset I have implemented this study in a manner that was principled and consistent with the philosophy and values of the teacher participants. I have also acknowledged areas which need addressing in future studies, such as providing more informal opportunities for the teacher participants to meet and develop positive group norms before the study begins, and including multiple focus group discussions.

Utilising the five ‘basics’, developed by Bartlett and Pigott-Irvine (2008), to evaluate this action research study has been a valuable and productive exercise. This evaluation provides a rigorous case for the positive application and benefits of utilising action research as a methodology.

**Contributions to the profession**

On the basis of the many presentations and workshops I have delivered to principal and teacher groups throughout New Zealand, focused both on developing self-regulated learners, school visioning, and on implementing the revised national curriculum, it is apparent that I have become an integral part of the educational change process in New Zealand. In combination, my own professional journey and my extensive learning from undertaking this PhD study have resulted in recognition that I have developed particular expertise which has been used to up skill other principals and teachers. In November 2006 I was awarded a Ministry of Education Principal Sabbatical Award in recognition of the
fact that this study’s research questions were deemed of high interest and correlated to Ministry initiatives in New Zealand at the time.

In April 2007 the Ministry of Education invited me to take part in a select group to develop a web tool to help schools integrate the key competencies into their curriculum delivery framework. I believe this recognition is indicative that the focus and results of this study foreshadow future educational developments in New Zealand.

In September 2008 I was invited to be the Regional Director for a national pilot project for schools in New Zealand. This project is focused on developing a principal appraisal process based on professional conversations and reflective critique of evidence of practice. This initiative, developed by the New Zealand Principals’ Federation and Dr David Stewart of Edex Services, is funded by the New Zealand Ministry of Education. The project utilises a reflective group process whereby principal participants present evidence of their work in a forum which seeks meaning and validity. The project proposes that the clear questions for inquiry that arise will be about worthwhile actions and correlate between intentions and demonstrated learning outcomes. The project will offer principals a vehicle within which they can reflect on and question their role as a principal and leader.

This action research study provided a vehicle for the participating teachers to reflect on and question their role as a teacher. The New Zealand Ministry of Education may need to take measures to provide teachers with professional learning opportunities that help them to re-think or re-construct their role as a teacher. Zuber-Skerritt (2008, p. 107) endorses this sentiment by stating:

*Professional development is likely to be more effective if it involves a process of learning by experience, with active staff involvement in information gathering and problem-solving; and if it is personally and consciously initiated, thought out, and implemented on the basis of their own needs, rather than controlled from outside.*
As Robinson (2007) points out, providing effective professional development for teachers which leads to a change in teacher practice requires a high level of skill and understanding on the part of the professional development facilitator:

*Finally, the synthesis revealed important features of the learning processes involved in more effective professional development. When the new learning challenged teachers’ existing understandings, deep rather than superficial engagement with those understandings was needed, so that a co-constructed alternative theory of practice could be developed. This required leaders of the professional development to be highly skilled in their facilitation of teacher learning.* (Robinson, 2007, p.17)

This study has enabled me to reflect on, question and formalize ideas for improving future professional development opportunities that I will provide for teachers both within and outside of my school.

**Final reflections**

I have learnt from this study that action research is a powerful and valuable tool that requires teachers to be at the centre of the change process. It encouraged the teachers to be critical and collaborative and to improve their practice. If schools adopted an action research approach to school improvement the above characteristics would become a natural and meaningful way for teachers to develop and improve their practice, and become an embedded practice of school change. The impetus for change would no longer be driven by school leaders, or higher, teachers would have a voice, be respected for their reflections and ideas and schools would become true communities of learners.

However, how this action research approach is formulated and implemented will be crucial to its success. McGee (2008) reminds us that we need to ensure that action research is not reduced to a ‘method’ which has been removed from the theory and values that underpin it. As Zuber-Skerritt (2008) concludes, action research as a form of professional development may be problematic unless all participants are self-motivated and interested in improving their teaching practice.
Therefore, aspects of ownership, control and motivation need to be considered carefully in order for action research to become a powerful tool.

This study raised questions around the type of action research that encourages teachers to reflect deeply and change their practice. Technical action research, as noted in Section Two, Chapter Three, may produce changes in practice and may support teachers to develop their capacity as researchers but it may not necessarily be collaborative. Case study two teacher (refer Section Two, Chapter Five) offered more prosaic data, as compared to case study one teacher, which could reflect the more interventionist technical approach originally adopted. Adopting the participatory action research approach had the intention of ensuring collaboration but it did not necessarily create a community of learners. Teachers do have the opportunity to investigate problems, create solutions, reflect on their practices, but not necessarily on the practices of the wider educational setting. Schools should adopt the emancipatory approach to action research whereby teachers have the opportunity to not only reflect on their own practice but also become part of a ‘self-reflective community’ which aims to improve practice and involve all of those affected by the practices under consideration (Carr and Kemmis, 1986, p. 205). This wider focus will enable schools to approach the implementation of the Revised National Curriculum from not only the perspective of the impact on classrooms but its impact on the whole school community.

I now realize how my own journey as a researcher has evolved from an interest in utilising action research motivated by a personal interest in pedagogy to an interest in utilising action research as an approach to whole school improvement. This is evidenced in Section Three of the folio whereby I present professional writing and practice pieces focused on whole-school development through action research. On reflection, any utilisation of action research as an approach to whole-school development should employ the elements of good action research at two levels. On one level, the teacher participants would have the opportunity to employ the democratic elements of action research, that is, collaboration, participation, flexibility and responsiveness. They would have the opportunity to critically reflect, to solve problems and to create new theory. On another level, the principals of schools involved in action research projects should have the
opportunity to employ the same elements of action research (refer to Table 4: The Simultaneous Action Research Cycles Employed, p.84). This would enable them to critically reflect peer to peer in a supportive environment on the wider implications of the research findings. This could lead to the creation of knowledge for action that researchers and policy-makers could find useful.

Sandretto (2007) states that practitioners should be encouraged to engage in action research projects that engage them and enrich them professionally, as well as that strive for greater social justice. Encouraging principals of schools to share their action research findings in a collaborative, reflective manner and offering them opportunities to continue to explore school-wide issues further, could result in action research being used as a tool for enacting social change.