

PRECOCIOUS READERS:
CASE STUDIES OF SPONTANEOUS LEARNING,
SELF-REGULATION AND SOCIAL SUPPORT
IN THE EARLY YEARS

by

Valerie Gail Margrain

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ABSTRACT

This thesis reports 11 case studies of 4-year-old children with precocious reading ability in New Zealand. Precocious readers are an important cohort of learners because they “are able to read fluently and with understanding at an unusually young age before attending school and without having received any direct instruction in reading” (Stainthorp & Hughes, 2004, p. 107). The range in the children’s ages was 4:01 to 4:10.

Three perspectives informed the study: social constructivism, cognitive constructivism and the bioecological perspective. The mixed-method case studies included observations of children in early childhood centres and schools, interviews with parents and teachers, a range of standardised assessments, and the collection of a range of children’s writing and art. Four of the children were tracked as they transitioned to school on their fifth birthday.

The case studies illustrate four key findings. Firstly, exceptional early reading abilities of precocious readers are validated. Secondly, the role of adults in supporting the children is shown to be necessary but not sufficient to create precocious reading ability. Thirdly, the case studies illustrate the complexity of learning. Finally, parent, teacher and peer expectations for the children and responses to their special abilities are reported.

The data support three types of learning: socially supported, self-regulative and “spontaneous”. Spontaneous learning experiences were described by parents as occurring when their children learned without having been taught, and without deliberate metacognitive self-teaching. Theoretical links can be made to other studies that consider “implicit”, “induced”, “intrinsic”, “unconscious” and “non-conscious” learning.

Results of literacy assessments, using the *Neale Analysis of Reading* and the *Burt Word Reading Test* include reading abilities 7:0 to 12:0 years, comprehension in the range

6:03 to 8:03, and fluency between 7 and more than 13 years. Receptive language ability was more varied, with percentiles ranging from 58 to 99. The children were highly motivated and passionate readers. They persisted with tasks and enjoyed challenge and competition. Learning dispositions of this particular group of children are discussed within the framework of *Te Whāriki*, New Zealand's early childhood curriculum.

The children capitalised on a range of support and resources. Computers were a common factor mentioned as an important influence on literacy. Parents and grandparents provided positive support for the children, but the children and families experienced social negativity. Beyond the family, there was strong pressure on the children to conform and act "like a 4-year old". Many early childhood and school teachers had expectations of the children's potential that were significantly lower than their ability. The study suggests that the cognitive needs of young children with advanced academic abilities are not being met due to this social pressure on children to "normalise".

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WHAKATAUKI

Iti te kopara kai tarere ana I te puhi o te kahika.

Small though the bellbird may be, it swings on the topmost twigs of the white pine.

(Brougham & Reed, 1999, p. 132)

DEDICATION

To my grandparents Edward (Ted) and Kathleen Wilson who always saw the best in me,
to McKenzie Residential School for teaching me about advocacy,
and to my children Lisa, Annette and Timothy,
the most important treasures in the world to me!

MIHI¹

Tena koutou, tena koutou, tena koutout katoa
 Nga mihi nui kia koutou
 Ko Taranaki te maunga
 Ko Whanganui te awa
 No Wanganui au, engari ko Te Whanganui-a-Tara toku kainga inaianei
 Ko Hoskyn, ko Gullery, ko Wilson, ko Martin, ko Aslett oku whānau
 Ko Gordon toku papa, Ko Gwenyth toku mama
 Ko Ray toku hoa rangatira
 Ko Jarod ratou, ko Lisa, ko Annette, ko Timothy oku tamariki
 Ko Valerie Margrain taku ingoa
 No reira, tena koutou, tena koutou, tena koutou katoa.

Greetings, greetings, greetings
Warm greetings to you
Taranaki is my mountain
Whanganui is my river
I am from Wanganui, but now I live in Wellington
Hoskyn, Gullery, Wilson, Martin and Aslett are my families
Gordon is my father, Gwenyth is my mother
Ray is my esteemed partner
Jarod, Lisa, Annette and Timothy are my children
I am Valerie Margrain
Welcome, welcome, welcome.

¹ A mihi is a self-introduction that provides honour to where one comes from, one's ancestors and family. Mihi is part of Maori culture and I use it here to acknowledge my bicultural New Zealand heritage.

CHAPTER ONE

RATIONALE AND INTRODUCTION

Not everybody has a laboratory in their head. (Alistair, age 4, 2001)²

1.1 “Not everyone has a laboratory in their head”

This study is based upon 11 case studies of 4-year-old children who were able to read at an advanced level before beginning school. Each of the 11 case studies describes children’s strengths, interests, abilities and individual needs. The case studies highlight the importance of social support and environmental influences, and of individual thinking. In particular, the case studies illustrate that the innate ability of children is a critical factor and that learning may occur spontaneously.

One of the case-study children, 4-year-old Alistair, spontaneously drew a picture for his early childhood teacher, which he referred to as “The laboratory inside my head” (see Figure 1). He pointed out the areas where “creative things happen”, and also explained that there was more in the laboratory, but he could not draw it all. Alistair also told his teacher that “not everyone has a laboratory in their head”. However, during a research interview with his early childhood teacher, she mentioned her concern that Alistair’s comment may be elitist and might mean that he considered that he was better than other children. The importance of Alistair’s contribution includes his self-reflection on learning and on his own cognitive and creative abilities. Alistair was also aware of differences in ability and learning style between himself and other children. In this thesis, I assert that individuality needs to be acknowledged, including recognition of differing individual potential.

Each of the 11 case studies within this study could be considered “laboratories” within which ideas fermented and developed, although the thesis does not suggest that there is a formula or recipe for learning to read precociously.

² Quotes from participants are shown in single line space, Arial font. Quotes from literature are in 1.5 line spacing, Times New Roman font

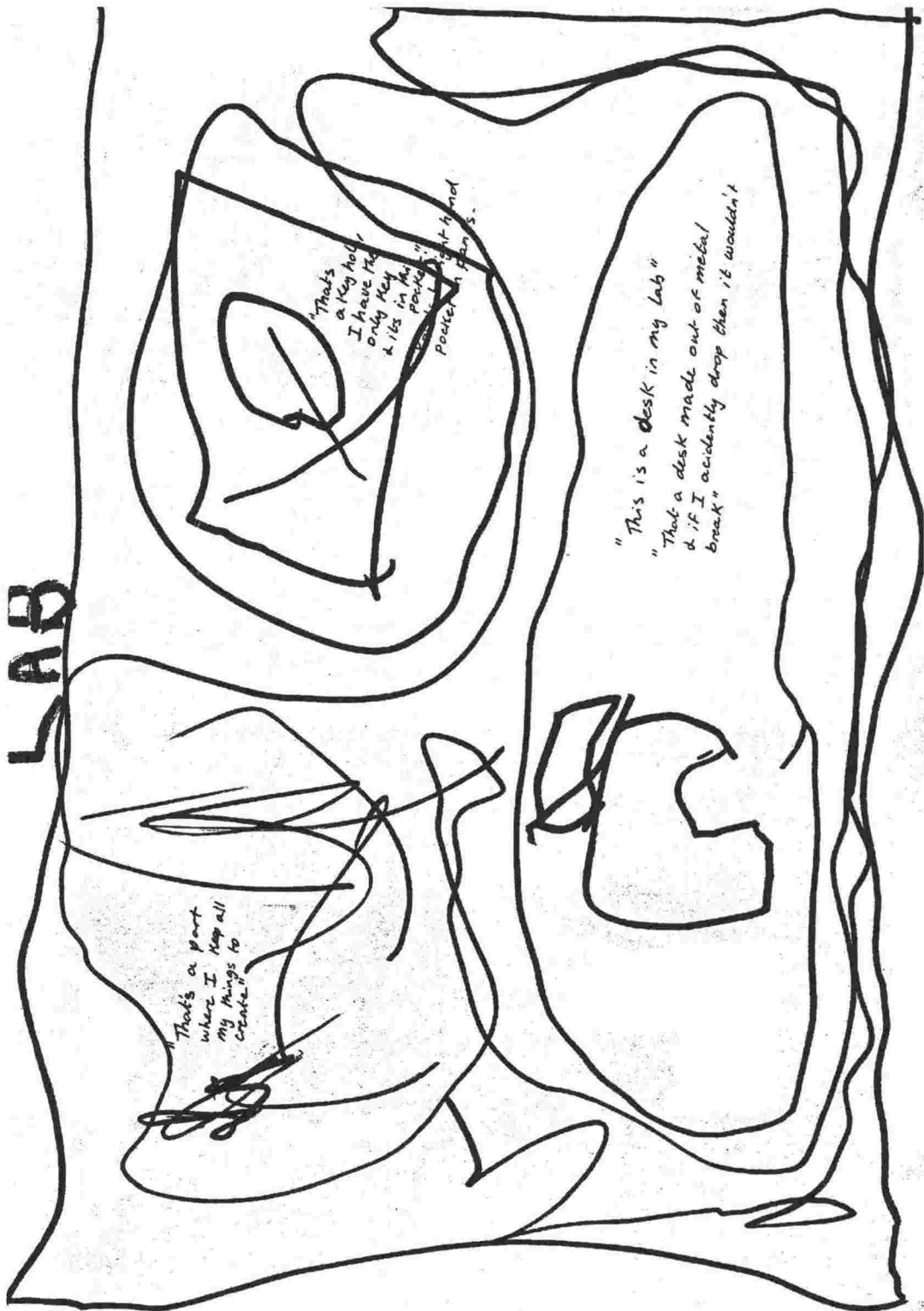


Figure 1. Laboratory.

1.2 Positioning the study

This study focuses on *children who are precocious readers and being a precocious reader* rather than *precocious reading* in itself. The children, who happen to have exhibited precocious reading ability, are central to the study. According to Stainthorpe and Hughes (2004),

We define “precocious readers” as children who are able to read fluently and with understanding at an unusually young age before attending school and without having received any direct instruction in reading. Precocious readers appear to have taught themselves to read (p. 107).

This study is linked to literacy and gifted education through acknowledgement of the children’s individual abilities.

Early childhood education perspectives on learning acknowledge social support and ecological contexts. Parents³ provide key role modeling and influence on their children’s early learning, and have made an important contribution to this study.

Early childhood education, literacy and gifted education have all been areas of national interest and policy development in New Zealand during the time of this study (2000-2005). Explanation of contemporary contexts and pedagogical debates in these three areas is relevant in order to illustrate the research position and the contribution the study makes. The importance of parent support for children’s learning is acknowledged within early childhood education, literacy and gifted education fields.

1.2.1 ‘Tall Poppies’: Gifted Education in New Zealand

Until recent years, in New Zealand an egalitarian approach and tall poppy syndrome negatively impacted on identification of and support for children with special abilities (Cathcart, 1996; Fraser, 1996; Moltzen, 1996a). Moltzen (1996b) stated:

Many writers have suggested that, in New Zealand, the needs of the gifted have been subsumed by the needs of the majority. There has been an almost uniform rejection of any measures that could be interpreted as offering the gifted anything that could be remotely described as special.

³ ‘Parents’, in this study, refers to all persons with primary caregiving interest and responsibility for the children concerned.

Such a position has its source in the somewhat misguided notion that the gifted are innately advantaged, so anything additional only tips the scales in their direction. Freeman (1981) believes that the New Zealand public, including teachers, being part of a strongly egalitarian society are wary of any *advantage* being given to one group over another. (p. 14).

The metaphor of “tall poppies” has been applied to gifted children in that society effectively acts to cut them down to size. While under-achieving children are supported and lifted to the ‘average’, there is less tolerance for anyone who appears to be “a cut above”. The very word *precocious* is used in New Zealand in a derogatory way to describe able children who behave in ways that are deemed to be socially inappropriate.

During the process of this study, however, initiatives that acknowledge gifted and talented learners in New Zealand began to be introduced. In 2000, the first national guidelines for schools were published (Ministry of Education, 2000), an on-line community for the gifted and talented established on the Ministry of Education website *Te Kete Ipurangi* (www.tki.govt.nz), an advisory group formed, and funding for some support initiatives set up. Contestable funding pools have called for applications, and the 2005 call for applications for early childhood centres of innovation acknowledges centres catering for special needs and abilities. In 2005, a resource for parents on meeting the needs of gifted and talented children was being produced and has included early childhood sector consultation (Ministry of Education, 2005a). However, children at the early childhood and early primary level may still be at particular risk of under-identification and under-resourcing (Holden, 1996). Identification of ability is an essential component of educational provision for gifted learners (Hollinger & Kosek, 1985). This study of precocious readers will enhance understanding of the abilities, needs and learning styles of one group of gifted learners.

Results of New Zealand’s 1990 participation in the International Association for the Evaluation of Educational Achievement (IEA) international reading survey highlighted increasing disparity between the highest and lowest levels of reading ability (Nicholson, 2002). IEA results showed that the high achieving children in New Zealand were

comparing favourably internationally but the low-achievers were amongst the lowest.

Nicholson (2002) explains:

In contrast to 1970, New Zealand in 1990 had the widest range of variation in the survey, indicating that it had more children at the bottom end of achievement and more at the top end ... In 1970 the range of variation in reading, that is the gap between the top and bottom readers, was similar to other countries, but in 1990 it was the highest in the OECD, showing in particular that Maori and Pacific Island children were worse off (p. 24).

The 1990 IEA survey results particularly influenced national policies that focused on closing the gaps, reducing disparity and levelling the playing field (Nicholson, 2002). A more recent shift in Ministry of Education language refers to “making a difference for all students”, a priority that “all students experience effective teaching” and that teachers should have “appropriately high expectations of all students” (Ministry of Education, 2005b) and “all students achieving their potential” (A. Alkema, personal communication, August 9, 2005). The semiotic shift in language links positively to the gifted education initiatives and is more likely to allow recognition of groups of children like precocious readers. This study of precocious readers will contribute to the understanding of the potential of young children in the area of literacy, and their broader learning potential.

1.2.2 Approaches to literacy learning

New Zealand celebrates an international reputation for quality literacy teaching; for example, in 1989 it was cited as “the most literate country in the world” (Griffiths, 1989, as cited in Openshaw, 2002) and because “international visitors flocked to see the New Zealand approach to reading in action” (Chamberlain, 1993). However, New Zealand research tends to focus on how we teach at school, how young children develop reading awareness and the provision of particular programmes such as *Reading Recovery*⁴.

⁴ *Reading Recovery* is a “quality” model of one-to-one early literacy intervention for children at age 6 (for most New Zealand children this is after one year at school), designed by Marie Clay (Clay, 1993a).

In October 1998, the government announced the goal that “By 2005, every child turning nine will be able to read, write and do maths for success” (Ministry of Education, 1999a). A Literacy Experts group was convened in 1998 to consider how best to meet this goal, considering best practice and advice based on theoretical and academic perspectives of literacy. The associated Literacy Taskforce highlighted the importance of “a culture of high expectations for all children” (Ministry of Education, 1999b, p. 2), yet no specific initiatives relating to the reading of gifted or precocious readers have been suggested.

The Literacy and Numeracy Strategy does not refer to the needs of, or challenges for, children who are able to read much earlier than expected or “best practice” suggestions for teachers of these children (Ministry of Education, 1999a). There appears to be an underlying assumption that able learners “already can” and we need to extend our energy toward those who “can’t yet”. The role of resource teachers of literacy in New Zealand is a good example, these specialist teachers throughout New Zealand have their energies exclusively directed toward remedial reading. Despite this bias in practice, Ministry of Education curriculum documents have always referred to the importance of all children having their individual learning needs met; for example, *English in the New Zealand Curriculum* (Ministry of Education, 1994, p. 15). The results of this study of precocious readers illustrates that children who show early literacy competence still have learning and support needs and also deserve “best practice”.

In 1999, *The Literacy and Numeracy Strategy* (Ministry of Education, 1999a) was broadened by the government from “every child turning nine” to the wider “focus on all levels from early childhood through to adults” (Ministry of Education, 2003). Although the Ministry of Education has provided few resources and little specific teaching guidance for the early childhood sector, emergent literacy is acknowledged as beginning well before school (Clay, 1967, 1979). Family storybook reading, songs and rhymes, environmental print experiences and symbolic play are all examples of literacy interactions that can occur from birth, or earlier (Roskos & Christie, 2000; Smith & Elley, 1997). Seventy-five per cent of parents participating in the New Zealand

Competent Children research said that their preschool child was read to every day, 85% of 5-year-olds could handle books appropriately, 81% could turn at least half the pages of a book one at a time, and 85% could identify the first letter of their own name (Wylie, Thompson, & Kerslake Hendricks, 1996). Literacy acquisition will be discussed in more detail in chapter 2, in the literature review.

1.2.3 *Early childhood in Aotearoa/New Zealand*

In New Zealand, early childhood care and education extends from “the years from birth to school entry age” (Ministry of Education, 1996a, p. 17). Children are not legally required to start school until they turn 6, but most begin on their 5th birthday⁵: “For most children in New Zealand, turning five is a milestone in their lives” (Jackson & Adams, 2002, p. 171). This thesis title includes reference to “the early years” as an acknowledgement that the study focused on 11 4-year-olds, but included following four children through to the first few months of school after their fifth birthdays.

A diverse range of early childhood options exists in New Zealand, including home-based, correspondence and centre-based services. Amongst the centre-based options are kindergartens, centres with Montessori, Steiner, Christian or other philosophies, language-based centres, full day and sessional centres. Participation is voluntary. However, in 2004, 102%⁶ of all 4-year-olds are estimated to attend early childhood education, 95% of all 3-year-olds, and 65% of all children younger than 5 years of age. The average number of hours attended by children in 2003 was 16 hours per week, meaning that the majority of children attend part-time. In 2001, when field work for this study began, 99% of 4-year olds attended early childhood education, 91% of 3-year-olds, and 60% of all children younger than 5 years of age. The average length of enrolment (hours) per week was similar in 2001, at 14.3 hours. This data illustrate that

⁵ “In New Zealand the compulsory [school entry] age is 6, but nearly all children start on or near their 5th birthday” (Ministry of Education, 2005c).

⁶ Double counting occurs when children enrol in more than one type of early childhood service. An alternative study of Year 1 children’s participation in early childhood education, which avoids double counting, affirms high participation (92.3% in 2002 and 94.3% 2005) but does not duration of attendance (Ministry of Education, 2005c).

most children in New Zealand attend early childhood education, but normally on a part-time basis (Ministry of Education, 2005c).

The national early childhood curriculum, *Te Whāriki* (Ministry of Education, 1996a), overtly acknowledges contextual influences, particularly the importance of family and community. “The curriculum builds on what children bring to it and makes links with the everyday activities and special events of families, whānau, local communities, and cultures” (Ministry of Education, 1996a, p. 42). *Te Whāriki*, “emphasises the critical role of socially and culturally mediated learning and of reciprocal and responsive relationships for children with people, places, and things” (Ministry of Education, 1996a, p. 9). The importance of partnership with parents is illustrated by the fact that promotion of collaborative relationships is one of three goals in the Ministry of Education’s (2002) 10-year strategic plan for early childhood education *Pathways to the Future: Nga Huarahi arataki: A 10-year strategic plan for early childhood education*, along with increasing participation and improving the quality of early childhood education services.

As a result of the strategic plan, reviews of funding, group size and ratio have occurred, initiatives to support the goal of a fully qualified sector⁷ introduced, an ICT strategy launched (Ministry of Education, 2005d) and research funding provided, including for a number of “centres of innovation”. Government investment in the sector has been substantially increased during the last few years, for example, in introducing “quality funding” and proposing “universal entitlement” to 20 hours free early childhood education for 3- and 4-year-old children from July 2007. These initiatives illustrate that investment in early childhood education in New Zealand has grown since this study’s 2001-2002 data collection.

⁷ By 2012, all New Zealand early childhood teachers counted in the ratio must hold at least a 3-year Diploma of Teaching (ECE).

The majority of early childhood centres in New Zealand provide a play-based programme with significant child choice and self-directedness. Literacy can be supported within this holistic approach. Hamer and Adams (2002) note, "There are many opportunities for embedding literacy into the everyday play and activities of children" (p. 122). Hamer (2002) adds, "It is more pedagogically sound to integrate, incorporate and infuse literacy practices more *holistically* throughout the whole early childhood setting (p. 132). Some of the centres in my study included reading, writing and handwriting lessons, but this is not representative of most early childhood education; "formal" teaching in early childhood is unusual in New Zealand. For example, the aspiration statement of the New Zealand early childhood curriculum *Te Whāriki* does not refer to academic achievement, but states that children should "grow up as competent and confident learners and communicators, healthy in mind, body and spirit, secure in their sense of belonging and in the knowledge that they make a valued contribution to society" (Ministry of Education, 1996a, p. 9).

Vygotsky's (1978) sociocultural theory is of particular influence in contemporary early childhood education in New Zealand and internationally. Hamer and Adams (2002) state, "The early childhood curriculum is underpinned by a sociocultural approach to pedagogy which complements, and to a growing extent supersedes, previous behaviourist and Piagetian conceptions of how children learn" (p. 120). The application of sociocultural theory in early childhood education influences the role of the teacher; rather than being a facilitator, the teacher's role is increasingly seen as co-constructor (Cullen, 2002; Jordan, 2003). Vygotsky's (1978) notion of the zone of proximal development explains that the teacher plays a critical role in assisting children to extend what they achieve alone to what they are able to achieve with support. This means that the role of teachers is seen as an active, involved one and children's learning as "reciprocal and responsive interaction with others, both adults and peers, who can respond to children's development and changing capabilities" (Ministry of Education, 1996, p. 20). A Vygotskyian application of early childhood literacy teaching, for example, promotes literacy as a cultural tool (McLachlan-Smith & Shuker, 2002; Williams-Kennedy, 2004).

1.3 Overview and Structure

In the remaining sections of this chapter, I further explain the relevance of research on precocious readers within a contemporary early childhood perspective and my own research interests. I also introduce myself as a researcher, mother, teacher and person passionate about learning about children's learning. These roles were all important for the building of relationships with people throughout my research.

A literature review follows in chapter 2, which is structured in four sections. Firstly, three theoretical perspectives informing the thesis are discussed. Secondly, previous research relating to precocious readers and literacy learning is presented. Individual perspectives are highlighted in the third section, which considers autonomous and spontaneous learning generated from the child, whether consciously or subconsciously. In the final section, the importance of social and environmental support is acknowledged, including the roles of whānau/family, teachers, peers and other people significant in the children's lives, and the key contexts of home, and early childhood and new entrant classrooms.

Participants from the case studies are introduced in chapter 3: 11 children, their families, 10 early childhood centres across three types of early childhood service, and four schools. Diversity of children, families, early childhood centres and schools is highlighted in the chapter. This study connects some key ideas about individual learning but does not suggest that the precocious readers were a homogeneous group. Recruitment and selection processes are also explained in chapter 3.

Research perspectives, position and paradigm are presented in chapter 4, as well as a specific explanation of the instruments. The multi-method approach of this study included several quantitative, standardised assessments, balanced with a range of qualitative observation and interview approaches, collection of writing and art samples, photographs and video and sound recordings. The data collection is complex, as each of the 11 case studies also explored multiple sites and contexts. Ethical issues are

considered; because the participants were all 4 years old, it was critical that research practices were age-appropriate. Description of the data analysis methods will complete the chapter.

Research results are mainly presented in three chapters. In chapter 5, information about the children as readers is presented. Quantifiable data includes reading ages, fluency, comprehension, and language assessments. Qualitative information reflects the children's engagement, passion and interest as readers. Reading in different contexts is considered, alongside other aspects of literacy: writing, oral language and resources. Teaching and learning issues are considered in chapters 6 and 7. Although there are obvious links between teaching and learning a division has been made in order to structure the data. In chapter 6, teaching is the focus, in terms of scaffolding, co-construction, socialisation and resourcing. *Teachers* include early childhood teachers, primary school teachers, parents, grandparents and peers. In chapter 7, the focus is more directly on the children's individual learning styles and cognitive processing, as well as spontaneous and non-conscious processing. Links between children's learning dispositions and New Zealand's early childhood curriculum, *Te Whāriki* are discussed.

Expectations held by the teachers, parents and children are examined in Chapter Eight, as well as related advocacy issues. Although the issues are derived from the case studies of precocious readers, the issues are applicable to other groups of children. Family selection of early childhood centres and schools, transition issues and adult expectations are also considered in chapter 8. Chapter 9 concludes the thesis with a summary of key findings, related commentary and suggestions for further research.

1.4 Research Focus

In this study, I challenge the notion that children's learning is *always* a result of their environment or what other people do. Zebroski (1994) describes a danger that "scholars in the field jump on the social bandwagon" (p. 238). Instead, my study includes a focus on individuality. Social and contextual supports are critical, but so too is a 'bioecological' or social-psychological consideration of the individual child

(Bronfenbrenner, 1979; Roskos, 2000). It may be the way that the child responds to, accesses and manipulates the environment that creates critical difference, rather than the environment per se. Previous research has established that supportive practices like storybook reading and resources are clearly *necessary* for optimum development, but no factors are *sufficient* to create precocious readers. The child, whether consciously or not, contributes ability, motivation and individual "X" factors, which affect outcome.

1.4.1 *Why precocious readers?*

Precocious readers are an exceptionally achieving group, constituting around one to two and a half per cent of the population (Jackson, Donaldson & Cleland, 1988). Because of the focus on children's learning, the thesis could similarly have looked at children with precocious musical or mathematical ability. By choosing reading, however, I had an immediate common interest with the children and families I met. My experiences as a mother and teacher meant that I was excited to be discussing books, parenting, and early childhood choices and that I had a common background with the participants.

However, precocious readers are first and foremost children, with families, friends, interests and routines. This study differs from other research on precocious readers because of the ecological aspects of data-gathering: observations in early childhood centres, visits to the children's homes and naturalistic work and language samples. Previous research on precocious readers has tended to focus predominantly on reading strategies, with data obtained through experimental testing (Coltheart, 1979; Fletcher-Flinn & Thompson, 2000; Jackson & Biemiller, 1985; Jackson, Donaldson, & Cleland, 1988; Jackson, Donaldson, & Mills, 1993; Jackson & Kearney, 2005; Jackson & Lu, 1992; Mills & Jackson, 1990; Stainthorp & Hughes, 1998).

Because precocious readers are all of preschool age, the likelihood of there having been any 'formal' teaching is minimal. The age of the children highlights the importance of home and early childhood settings. As children's first teachers, parents have enormous knowledge and experience, which teachers could use.

A study on precocious readers could contribute to the fields of early childhood education, literacy and gifted education. Precocious readers, indeed, able readers of any kind, are an ignored group deserving research and acknowledgement. In the field of gifted education, the youngest learners may be less likely to be identified and accommodated (Davis & Rimm, 1994; Holden, 1996). In early childhood settings teachers are often wary of practices that could be seen as inappropriately formal but do include emergent literacy experiences such as storybook reading, rhyme and name recognition. Often, in reading research, the focus is on what primary school teachers and remedial programmes do. There is, however, almost no research in New Zealand on *able* readers of any age, particularly on able readers in early childhood. *Learning to Read in Aotearoa New Zealand* (Adams & Ryan, 2002) did not acknowledge precocious readers once in the entire book. This study contributes qualitative and quantitative information grounded in Aotearoa New Zealand that will extend understanding of children who read competently at an early age, particularly contributing to the fields of gifted education, early childhood education and literacy.

1.4.2 Objectives of the study

I began this research with the premise that precocious readers do exist. Rather than questioning, “Are there precocious readers in New Zealand?” I aimed to find out more about *being a child* who is able to read precociously. My experiences with early readers had suggested to me that, amongst all the “experts”, it is their parents who know them best. I hoped that sharing more information on children and learning would be a positive vehicle for advocacy and support.

I was particularly interested to discover whether a notion of children ‘spontaneously’ learning to read could be validated. *Spontaneous* is a term that I have heard parents use when their child learns things that they haven’t been taught or assisted to learn. Therefore, this study also needed to include data on scaffolding and social support, in part for inherent interest, and in part to help clarify what may or may not have been taught. Children’s learning is considered broadly, but it is the learning that can’t be easily explained or sourced that is of particular interest to this study.

The key research question was: *How are social scaffolding and self-scaffolding demonstrated within the learning of precocious readers?* In addition, I considered that it would be interesting to see if data emerged that could *not* be explained by the question's focus on scaffolding: the examples of learning that could not be accounted for through scaffolding might link to a notion of spontaneous learning. There was, therefore, a second implicit question: *Can precocious readers provide evidence for the concept of spontaneous learning?*

Underlying the main research focus are other questions of importance. Who is it who supports or teaches the children in my study? What are the roles of parents, siblings, extended whānau, peers and early childhood teachers? In particular, how do parents teach, facilitate, encourage, support, respond, observe or react? Did young children have special abilities as a result of "pushy" parents who hot-housed their children? Other issues investigated in the study concern the extent to which children comprehend their reading, their self-directedness and metacognitive awareness, individual needs, school transition experiences and people's reaction to precocious reading ability.

Because of the paucity of research in New Zealand on gifted and able learners, this study may be of relevance not only to precocious readers and their families, but also to children with other special abilities. The study focus on ways in which individual able children construct learning and are socially supported may enable the construction of hypotheses about the experience of other children, especially those with different special abilities in Aotearoa/New Zealand. This study should, therefore, provide information of relevance to the following groups:

- Advocates for precocious readers, young gifted children and learners with special abilities. Contemporary research grounded in Aotearoa New Zealand has been minimal for these groups.
- Parents/caregivers and whānau of the above groups of children. Although policy has stated the importance of educational partnership with parents, the pedagogical expertise of parents is rarely acknowledged.

- Early childhood and school teachers. Professional educators would presumably want to enhance their understanding of the children they teach and advocate for the pedagogical practices that provide most support.
- The Ministry of Education and related agencies. Policy has often been worded affirmingly, but there needs to be accountability that the practices that occur in education reflect the policy initiatives, and that initiatives reach children in the early childhood sector.
- Researchers interested in precocious readers, learning, literacy, child development, gifted education, early years education and mixed-method research approaches.

1.4.3 Exclusions

Ecological factors – particularly parenting, early childhood education and the availability of resources – are critical influences to examine. However, I support a hypothesis that contextual and ecological factors alone are not sufficient to create precocious readers. Many parents will have taken their children to libraries or read their children stories, but not all children become precocious readers. Clearly, some children have particular abilities that others do not. This study focuses on eleven children who have clearly demonstrated precocious reading abilities and their individual experiences. It is not my intention to find a single reason or recipe for precocious reading, but narratives of “being” and “doing” within the case studies.

This study is an exploration of competent young learners with a domain-specific ability. However, it is also important to clarify the boundaries of the study by stating areas that the study will *not* include. This study is not experimental research on reading strategies. There will not be a resultant recipe for reading that can be followed to ensure other children read early or to assist unsuccessful older readers. Rather than being clinical, the perspective is inclusive of the child’s home and early childhood learning contexts, their engagement with text, their learning and social interactions. The research intent is to learn from all contributors, not to fault parenting or teaching methods. The focus of the study is on seeking qualitative meaning; however, some assessments are used to validate competencies and to link to wider samples. The expected outcome relates to

enhanced understanding of the experiences of *children who precociously read* rather than merely understanding the reading process of precocious readers. Findings may apply to other groups of children because the focus is on *learning*, demonstrated by reading, rather than solely on *learning to read*.

1.5 A Personal Passion

In 1988, my first year of primary school teaching, I marvelled at my Year One children's mastery of the reading process. There appeared to be more to the process of learning letters and words, more too than knowing about books, stories or even imagination. There was an "X factor" to learning to read that some children readily embraced. I was intrigued that while I was grappling with understanding the elements involved with the process most children readily found routes to success. I wrote to my mother about my intrigue, and she told me that I had never been taught to read; I learnt spontaneously, and "just could" read. When I was a preschool child, she had found me looking at the novel *A Town Like Alice* by Neville Shute. Not believing that I had read it, despite me telling her I had, she asked me questions about the book and I described the plot accurately. I had not been *taught* to read, but had clearly *learned* to read.

My primary and early childhood teaching experiences, and networks as a parent, introduced me to some special young children who were also reading before beginning school. The consistent message I heard from parents of early readers was that their children had not been taught to read, but "just could". The parents of early readers whom I had met tended to keep their child's reading achievement low-key, and worried about reactions of teachers and other parents. During this study, a number of people not associated with the research approached me with their own stories, usually also describing that their children or siblings had learned to read spontaneously.

However, as a teacher for many years I had heard disbelief and negativity from my teaching colleagues about children's early reading presented in three ways. Firstly, teachers suggested that the children probably couldn't "really" read, and that parents had exaggerated early skills. Secondly, if children really could read, then teachers proposed

that parents had been “pushy” and pressured the children. Finally, teachers shared stories of children who could read but couldn’t answer comprehension questions, which apparently invalidated their skills, since reading without comprehension was “pointless”.

Both my teacher and parent experiences showed me children who had a range of special abilities that were not recognised or accommodated. Literature on giftedness led me to reflect on the “tall poppy” syndrome, which seemed to be evident among early readers in New Zealand. Despite the fact that children were evidently gifted at reading, there was little celebration or even recognition of their abilities and achievement from teachers. This seemed reflective of the fact that New Zealand lacked national guidelines, policy or initiatives for gifted education before 2000.

During my Master of Educational Psychology studies (1996-8), I discovered the term *precocious readers* and began to gather literature on the topic. Most of the literature on precocious reading was from the United States and on the structure of the reading process. I found that a literacy perspective alone did not sufficiently explore my interest in relationships between parents, children and teachers. My master’s research project explored parental perceptions of young able readers (Margrain, 1998) and found that half of 58 early readers had miserable beginning school experiences. This coincided with several disappointing school experiences by children that I personally knew. I thus became convinced greater advocacy and local research was needed to support young children who have special abilities, including early reading.

1.6 Summary

The 11 case studies of precocious readers, their families, early childhood centres and schools provide case-specific information about precocious readers and more generalised consideration of learning, teaching and advocacy issues. The importance of social support and ecological contexts are acknowledged in the study; however, individual abilities of children are also highlighted.

My personal background demonstrates that parents and teachers have differing ideas about the emergence of precocious readers. The aim of my study was to highlight the experience of the children. 4-year-old Alistair's ideas about learning and his model of a laboratory, shown earlier in this chapter, illustrate the importance of acknowledging diverse individual perspectives on individual learning and potential. This study will include elements of children's voice alongside parent and teacher perspectives and standardised test results. Throughout the study, the children are positioned centrally to each case.

CHAPTER 2

REVIEW OF LITERATURE

When she [Maxine] was 28 months she suddenly started reading some of the stories from the Ready to Read series and other books fluently. This coincided with accurate one-to-one counting, which appeared at the same time. From this point on, she read voraciously and fluently with much expression, and good articulation, indicating that she understood and enjoyed what she was reading” (Fletcher-Flinn & Thompson, 2000, p. 8). Maxine’s results show that these explicit phoneme awareness skills are neither a necessary consequence, nor a necessary co-requisite, to rapid progress in learning to read, although implicit knowledge to phoneme identities surely is necessary. (p. 27)

Research informs any study. The work of researchers such as Fletcher-Flinn and Thompson (2000), sharing the story of Maxine (see above) provides a body of literature from which this study can build. The particular example of Maxine illustrates that precocious readers begin to read at an early age, read with passion, comprehension and fluency, and without deliberate phonological decoding. These aspects all relate to my own study. In addition, review of literature informs methodology and affords identification of research gaps.

2.1 Introduction and theoretical perspectives

My study connects three areas of personal interest: early childhood education, literacy and gifted education, and is informed by three theoretical perspectives: social constructivism, cognitive constructivism and bioecological. In this chapter I initially discuss the theoretical perspectives, then summarise key research about precocious readers, including literacy, family and gifted education perspectives. The discussion then moves on to consider related teaching and learning literature, including individualistic learning perspectives and environmental and social support.

The three theoretical perspectives that inform my study are relevant because individual *and* social/environmental factors are critically important within each of the perspectives: Vygotskian social constructivism, Neo-Piagetian cognitive constructivism and Bronfenbrenner and Ceci’s (1994) bioecological lens. Another common factor across

the theoretical perspectives is constructivism. These commonalities are as important as differences. While learning is “always embedded in the dynamics of particular systems of social interaction” experiences are also “deeply singular, for no two children have identical social histories” (Moll, 2002). Learning and development occur between people *and* within individuals, meaning it is necessary to consider contextual, cognitive and genetic factors (Elder, 1990).

In this chapter, and study, the importance of multiple perspectives is highlighted, with case studies of precocious readers providing examples to illuminate the different theoretical and learning perspectives. Figure 2 illustrates the way three theoretical perspectives (social constructivism, cognitive constructivism and bioecological) link my three domains of research interest (early childhood education, gifted education and literacy). These three theoretical perspectives, and how they inform my study, are explained in sections 2.1.1, 2.1.2 and 2.1.3. Other relevant issues and considerations, such as assessment and advocacy, surround the Figure 2 model. At the centre of the model are the children in my research, children who are precocious readers.

In this study I refer to social constructivism, cognitive constructivism and bioecological as *theoretical perspectives*. It could be argued that the *perspectives* I use are contextual and cognitive, and that cognitive constructivism, sociocultural⁸ and bioecological are *theories* within these two perspectives (Papalia, Olds & Feldman, 2004). However, because the theoretical dimensions of the model in Figure 2 (social constructivism, cognitive constructivism and bioecological) significantly inform my own ideas about learning, teaching, research design and analysis, I believe it is justified to refer to them as theoretical perspectives.

⁸ In this thesis, the term “sociocultural” is used only when discussing literature that uses this term. Otherwise, I incorporate Vygotsky’s theories within my reference to the social constructivist theoretical perspective, or broader contextual perspective. Section 2.1.1 elaborates this position.

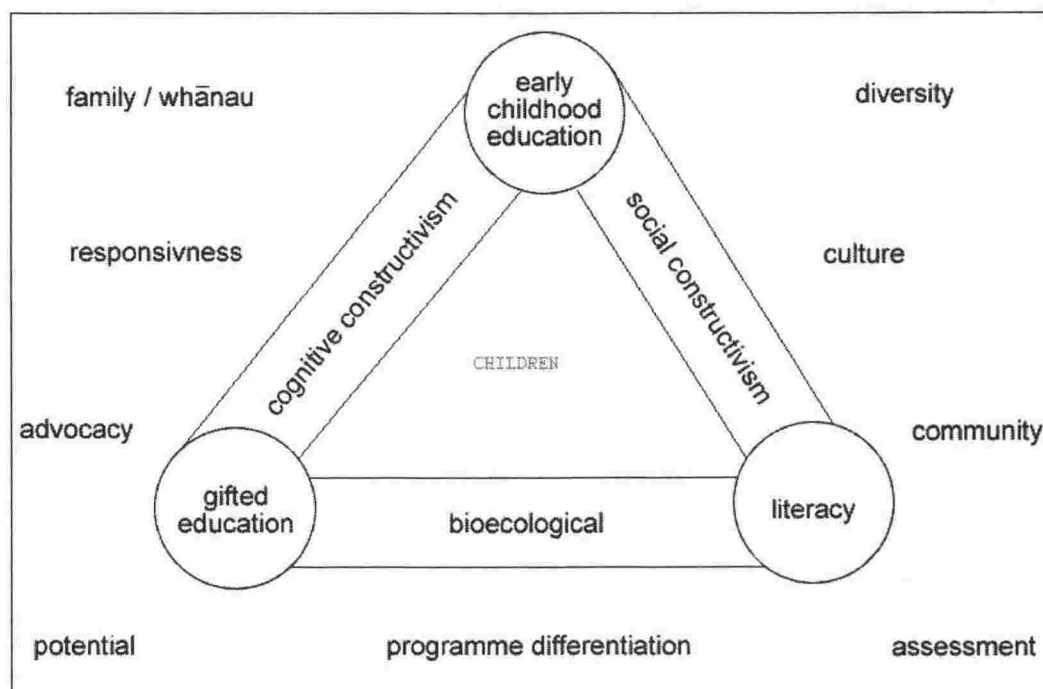


Figure 2. Research interests and theoretical perspectives: An overview.

2.1.1 Social constructivism

Vygotskian theories and perspectives have been referred to as *social constructionism* (Duran and Syzmanski, 1995), *social constructivism*, *sociocultural* (Papalia, Olds & Feldman, 2004) *dialectical constructivism* and *situated learning* (Woolfolk, 1998). Regardless of the label, these perspectives maintain Vygotsky's (1978) focus on learning as a social process of making meaning from the world, influenced by social and cultural contexts. My selection of the term *social constructivism*, rather than *sociocultural*, is deliberate in order to highlight the active construction of children's learning within social settings and the connections between Vygotskian and Piagetian perspectives, which will be elaborated in section 2.1.2.

Vygotsky's theories of human development and learning have been interpreted as children actively constructing their view of the world by interacting with others exploring their own environment (Bodrova & Leong, 1996; Edwards, 2003; Flear, Anning, & Cullen, 2004; McNaughton, 1995; Rogoff, 1990; Smith & Elley, 1994,

1997). Marshall (1996a) positions “social constructivist and sociocultural approaches” together because they take into account “the classroom, school, and larger cultural contexts and the reciprocal interactions among these contexts as they affect the learning process” (p. 237). Vygotsky’s theories relating to the zone of proximal development, scaffolding⁹ and internalised language all link to my research and will be discussed in more depth later in this chapter.

Vygotskian theory firmly asserts that adaptive learning begins through social experience. However, interpretations that suggest that learning occurs *only* as a result of external influence upon children may be challenged. Vygotsky himself (1962) stated:

Verbal thought appeared as a complex, dynamic entity, and the relation of thought within it as a movement through a series of planes. Our analysis followed the process from the outermost to the innermost plane. In reality, the development of verbal thought takes the opposite course: from the motive which engenders a thought to the shaping of the thought, first in inner speech, then in meanings of words, and finally in words. It would be a mistake, however, to imagine that this is the only road from thought to word. The development may stop at any point in its complicated course; an infinite variety of movements to and fro, of ways still unknown to us, is possible. A study of these manifold variations lies beyond the scope of our present task. (p. 152)

The psychology of the individual is, according to Rohrkemper (1989) “a multiplicative product” of social encounters (p. 147). Differences in social and instructional environments, as experienced by students, are important to consider “because they not only make demands on students, but they are also simultaneously sources of empowerment as students internalise and mediate their experiences” (Rohrkemper, 1989, p. 154).

Contemporary interpretations of Vygotsky’s work have tended to focus on the critical influences of social interaction and environment (Rogoff, 1990, 1998, 2003). Despite subsequent interpretation of his work, Vygotsky never discounted the individual abilities of learners; he recognised that both ecological and biological aspects are fundamental to learning (Vygotsky, 1993a, 1993b; Wenger, 1985):

⁹ Although the term *scaffolding* was introduced by Bruner, it effectively describes the Vygotskian approach to facilitation and support, for example, assisting learners to learn within the zone of proximal development.

Within a general process of development, two qualitatively different lines of development, differing in origin, can be distinguished: the elementary processes, which are of biological origin, on the one hand, and the higher psychological functions, of sociocultural origin, on the other. The history of child behaviour is born from the interweaving of these two lines. (Vygotsky, 1978, p. 46)

Although learning is directly related to the course of child development, the two are never accomplished in equal measure or in parallel. Development in children never follows school learning the way a shadow follows the object that casts it. (Vygotsky, 1978, p. 91)

New Zealander Stuart McNaughton (1995) applies Vygotsky's concepts to a theory of co-construction, stressing that children's own mental constructions constantly interact with those of his/her family and cultural group. New Zealanders Smith and Elley also highlight the joint construction role of personal and social activity (1994, 1997). Social constructivism is relevant to my study for two reasons. Firstly, it influences current theory and practice with young children and is "impossible to ignore". Secondly, and more importantly, Vygotsky's theories, and the work of contemporary Vygotskian researchers, offer important perspectives. When mediated with the combined emphasis of social and individual factors, social constructivism strongly influences my study with precocious readers.

Social constructivism informs my study because of the focus on social interaction and co-construction within this theoretical perspective. The participating children learn and live in social contexts, interacting with other people. They are talked to, read to, listened to, played with and supported. It is important that these aspects are acknowledged in the study.

2.1.2 Cognitive constructivism

The case study approach of this study acknowledges the importance of individual children's thinking, and is influenced by a post-Piagetian perspective. Construction of knowledge "in an individual's mind" (Marshall, 1996, p. 30) is relevant to this study of precocious readers because of their independent thinking and learning.

One of the common critiques of Piaget is that he *overly*-focussed on the individual and gave insufficient credence to context. Yet Piaget's original work, while interested in the individual, does acknowledge that individuals are within a social context. Piaget's earlier work also acknowledged interdependence:

That is, that adaptation – intellectual and biological, hence adaptation of intelligence to 'things' as well as of the organism to its 'environment' – always consists in a balance between accommodation and assimilation. ... To put it still differently, the object only exists, with regard to knowledge, in its relations with the subject ... The object is not a 'known quantity' but the result of a construction. Now this interaction of intelligent activity and experience finds its counterpart, on the biological plane, in a necessary interaction between the organism and the environment. ... Consequently there is interdependence between the organism and the entire universe, on the one hand, objectively, because the former results from the latter while completing and transforming it, on the other hand subjectively, because the adaptation of the mind to experience presupposes an activity which enters as a component into the play of objective relationships. (Piaget, 1953, p. 375)

Piaget remains known as one of the key theorists in educational psychology, despite criticism for a rigid stage model, underestimation of children's abilities, and some methodological approaches. Even texts that focus on Vygotskian perspectives tend to spend considerable time discussing the contribution of Piaget. Post-Piagetians accept criticism of the structural aspect of stage theory, but instead focus on the constructivist elements of Piaget's work: generation, elaboration, and revision (Inagaki, 1992).

McNaughton (1995) summarises part of Piaget's contribution to education:

Another legacy of Piaget's work is the idea that learning takes place as children confront and solve problems. They act on problems in that they are motivated to make sense of their worlds, to reduce ambiguity and uncertainty, and to become more expert in their immediate environments. (p. 13)

Fleer (1995) reminds us that "socially constructed learning views learning as not *simply* being constructed independently by the child, but in conjunction with the adult through scaffolding" (p. 27, italics added). This comment also acknowledges that some learning *is* constructed independently by children. Understanding children's cognitive abilities is an important aspect of reading education (Perfetti, 1995). Cognitive constructivism

supports understanding of independent learning, while acknowledging social contexts; it is for this reason that cognitive constructivism informs this study of precocious readers.

In addition, because individual and intellectual elements are sometimes ignored in contemporary early childhood literature, an overt reference to the cognitive constructivist perspective within this study helps to mediate a more balanced perspective. This study proposes that individuals play a key role in learning; many young children are read to and socially supported, but only a few children precociously learn to read. This suggests that, while the social and contextual elements are important, individual child characteristics influence the extent of individual achievement.

2.1.3 Bioecological perspectives

Bronfenbrenner is most well known for his model of the ecological environment as “a set of nested structures, each inside the next, like a set of Russian dolls” (1979, p. 3). Bronfenbrenner’s theory proposes that development occurs through interaction between a developing person and the surrounding, inter-connecting systems of influence (microsystem, mesosystem, exosystem, macrosystem, chronosystem). The theory has a strong influence on current education practice owing to acknowledgement of critical contexts of influence for children and communities. However, the hub of Bronfenbrenner’s model needs to be equally highlighted: the individual. Not only do systems influence individuals; individuals also influence systems.

One contemporary researcher who seeks to connect biological and social aspects of literacy learning is Kathleen Roskos. She notes that, although unintended, the ecological lens may result in “losing sight of the individual as a contributor to context creation” (Roskos, 2000):

Traditionally, interaction has been treated under the more inclusive category of environment in developmental research with two less than fortunate consequences. It has tended to cut the individual’s contribution out of considerations of context, emphasizing more so what is done to the individual in terms of environmental ‘press’ (Serpell, 1993). It has also underestimated the profound ways processes are affected by the biopsychological characteristics of the developing person as well as changes in human activity over time. (Roskos, 2000, pp. 128-9).

The bioecological perspective (Bronfenbrenner & Ceci, 1994), as opposed to the earlier contextual ecological model (Bronfenbrenner, 1979), seeks to ensure that *both* person characteristics and social context are considered. For example, Roskos (2000) states, “genetic beginnings do not determine developmental ends. This is not to underestimate the power of innate knowledge structures, however. Nature certainly provides humans a ‘leg up’ in cognition; supplying biological assists that guide attention to relevant environmental inputs” (p. 128). This contemporary discussion of the bioecological model aligns the theory to aspects of Wilson’s (1975) *sociobiological* theory. Wilson’s (1975) consideration of predispositions for learning and social adaptation means the sociobiological theory also relates to my study. Bioecological theory is more frequently cited in contemporary early childhood and literacy literature than sociobiological theory. My interpretation of bioecological theory in this study is informed by Roskos (2000) and has a broader application than solely ecological.

Neither a psychological nor an ecological model fully illuminates interaction between children’s minds and play. Assessment of metalinguistic verb use, for example, may explain little without understanding of context. On the other hand, “the preoccupation with what children were doing – their behaviours – overlooked their mind, that is, what they were thinking and learning. We obtained description after description . . . but lost sight of the developing child” (Roskos, 2000, p. 133). The bioecological approach provides a lens through which to examine cognitive and contextual influences on literacy learning, both of which are important.

Bronfenbrenner and Ceci’s (1994) perspective can also be described as constructivist. Bronfenbrenner (1979) referred to “the child’s evolving construction of reality” (p. 11). The bioecological theory has been described as “another attempt to integrate cognition and context, taking into account what happens both inside and outside the head” (Sternberg, 1990, p. 283). This integration of cognitive and contextual perspectives is why the bioecological approach fits well with my research philosophy.

The bioecological perspective informs this study with precocious readers because of the balanced emphasis of dimensions: individual and social, psychological and ecological, cognitive and contextual. This study proposes that these aspects must be holistically considered. The bioecological approach essentially integrates elements of the social constructivist and cognitive constructivist perspectives outlined earlier in this chapter.

2.1.4 Constructivism and Connection between Perspectives

The preceding discussion shows that both Vygotsky and Piaget were constructivists. Bruner noted that both Piaget and Vygotsky were “full of awe at the cognitive constructions of the growing child” (as cited in Wink & Putney, 2002, p. 24). There is no single constructivist perspective or theory of learning. Cole and Wertsch (1996) assert that the perspectives of both Piaget and Vygotsky are still useful, and are complementary rather than contradictory.

Despite differences, many constructivists agree on four characteristics that influence learning, according to Eggen and Kauchak (2004). Constructivism is characterised by beliefs that a) learners construct understanding that makes sense to them, b) new learning depends on current understanding, c) social interaction facilitates learning, and d) the most meaningful learning occurs within real world tasks (Mayer, 1996).

Figure 3 illustrates the two major forms of constructivism: cognitive and social. Although the figure illustrates some differences in perspective, my rationale for including it is also to illustrate the commonalities. For example, the cognitive constructivist perspective includes acknowledgement that children learn through interaction with others and the environment. The social constructivist perspective focuses on children learning in collaboration with others through the social/cultural setting. Each of the perspectives shares constructivist acknowledgement of social, ecological and individual factors. These factors provide important consideration for precocious readers, and therefore form key aspects of this study.

	<i>Cognitive constructivism Endogenous Constructivism (Piaget)</i>	<i>Social constructivism Dialectical Constructivism Situated Learning (Vygotsky)</i>
<i>How is knowledge viewed?</i>	Changing body of knowledge that is individually constructed in a social world. Built on what the learner brings.	Knowledge is embedded in culture and cultural symbols. Always changing. Built on what participants contribute and construct together, mutually constructed with others.
<i>What is learning?</i>	Active construction of knowledge and reconstruction of prior knowledge.	Internal use of cultural symbols; collaborative construction of socially and culturally defined knowledge, concepts and values.
<i>How do you learn?</i>	Multiple opportunities and diverse processes to connect to what is already known. Exploring and making sense of the environment.	By co-constructing knowledge and concepts with others and then internalising this knowledge. Socially constructed opportunities.
<i>Where do you learn?</i>	In interaction with others and the environment.	In collaboration with others through the social/cultural setting.
<i>What is the role of the learner in the learning process?</i>	To actively construct their own understandings and meanings. To actively think, explain, interpret, question and generate. Active construction (within mind).	Social apprenticeship; to actively co-construct knowledge and concepts with self and others, negotiating meaning. Explainer, reformulator, interpreter, questioner, thinker, co-generator, co-creator, reformulator, social participant.
<i>What motivates the learner?</i>	Being a sense-maker and problem-solver	Being a sense-maker, problem-solver and socially appropriate member of collective.
<i>What is evidence of learning?</i>	Performance: explanation of reasoning. Ongoing assessment. Process of inquiry.	Performance: explanation of reasoning, social performance over multiple sites. Assessment ongoing, multiple sites. Process of inquiry. Socially competent participation in collective.
<i>What are the key motivators?</i>	Self-development, competence	Collective and individual development through collaboration.
<i>What is teaching?</i>	Challenging and guiding thinking toward more complete understanding.	Co-construct knowledge with students.
<i>What is the role of the teacher?</i>	To facilitate and guide the learner (guide on the side).	To collaborate, co-construct, co-participate, mediate, and guide by sharing expertise and understanding (actuator of learning).
<i>What are the main methods of teaching?</i>	Facilitating opportunities to engage with materials, ideas and others, asking open questions.	Scaffolding, co-constructing, guiding, modeling and listening. Construct with students opportunities for interacting with meaningful ideas, materials, others.
<i>What is the key role of early childhood education?</i>	To construct new knowledge and learn strategies for ongoing learning.	To create new knowledge and learn strategies for lifelong learning. To support children in becoming fully capable and competent members of society, with expanding repertoires of appropriate ways of interacting.
<i>What is the role of peers?</i>	Not necessary, but can stimulate thinking and raise questions.	Ordinary part of the process of knowledge construction.

Based on The Open Polytechnic of New Zealand (2003, pp. 59-60); Woolfolk (1998, p. 281); Wink & Putney (2002, pp. 33-34).

Figure 3. Two perspectives of constructivism.

Constructivism has often been “misunderstood and misinterpreted” (Eggen & Kauchak, 2004). For example, guiding children to discover concepts and ideas themselves does not mean that teachers cannot also inform, support or advise. Constructivism is a theory of learning rather than a specific teaching strategy. Whether particular teaching strategies are effective partly depends upon the skill of the teacher and the needs of the child. This study includes the role of teachers, parents and peers as well as individual learners.

Piaget (1972a) clarifies constructivist cognitive processing by individuals of social and environmental experiences,

I would like to say a final word on the role of experience. It is clear there is an undeniable role played by experience in cognitive development; however, the influence of experience has not resulted in a conception of knowledge as a simple copy of outside reality. In external experience, knowledge is always the product of the interaction between assimilation and accommodations; i.e., on equilibrium between the subject and the objects on which the knowledge rests. (p. 8)

2.2 Precocious Readers

Precocious readers are a group of young children who have specific literacy, linguistic and self-regulatory skills. They differ from other readers in terms of fluency, voracity and engagement. Parents assert that precocious reading appears “spontaneously” and is led by the child. Key research by Thompson and Fletcher-Flinn (1993; Fletcher-Flinn & Thompson, 2000) points to induced or implicit understandings gained as a result of earlier book experiences. The role of parents as facilitators of shared book experiences and literacy conversations is therefore critical to consider. Within the literature on precocious readers, three particular dynamics that influence the development of precocious reading are highlighted: social support, self-regulation and spontaneous learning. Individual characteristics and innate ability are also critical. Use of case studies and parent interviews in this study maintains a focus on the individual children and their families and peers rather than on strategies. The study will further add to the literature through its early years focus, primarily in early childhood and including the first few months of primary school.

In this section of the chapter, precocious readers will be defined and described, and links to gifted education discussed. Three particular aspects of learning will then be explored, illustrating learning competencies of precocious readers: acquisition of literacy skills, language, and metalinguistic competency.

2.2.1 Definition and Description

Writing within the United States' context, Jackson, Donaldson and Cleland (1988) state that precocious readers can be identified because they "have made substantial progress in reading comprehension before entering first grade", and their achievement is important because "these children have had little or no exposure to standard reading instruction" (p. 234). Although Jackson and Klein (1997) define "young children" as ranging in age from approximately 2 to 6 years, other researchers have discussed precocious readers as being 3- to 5-year-old children. In New Zealand, children generally begin school, and "formal instruction" on their fifth birthday, so precocious readers in New Zealand would therefore normally be no older than 4 years old. The children in my research were all aged 4 at the time I met them, but parents reported that they had begun to read at a much younger age.

Jackson, Donaldson and Cleland (1988) surmise that, because precocious readers have had little or no exposure to standard reading instruction, their individual strengths and weaknesses may be clearer than those of older readers. This premise is not only useful for analysing particular reading sub-skills and strategies, but also more general self-regulatory strategies and skills. Because precocious readers have not yet entered school, abilities will have been developed primarily within home and early childhood contexts. Therefore, this study on precocious readers provides a particular opportunity to consider self-regulation in the early years.

Several researchers have examined particular skills and strategies of precocious readers, including phonological decoding skills (Henderson, Jackson, & Mukamal, 1993) and phonological recoding based on sublexical relations (Fletcher-Flinn & Thompson, 2000). Verbal ability, auditory short-term memory span, and name retrieval speed have

been correlated both with reading ability and disability (Jackson & Myers, 1982). The key case studies of Anbar (1986), Clark (1982) and Durkin (1966), however, investigated the broader impact of environment, motivation, social support and scaffolding for precocious readers.

Children's diverse strengths and interests mean that literacy learning is an individual learning process (Clay, 1996; Daneman, 1991; Fehrenbach, 1994). However, the young fluent readers in Clark's (1982) study shared strength in verbal rather than non-verbal aspects of tests, and all had additional characteristics. These included: good auditory discrimination, cognitive skills to grasp the nature of the task quickly, interest in tasks and word games, motivation to sustain concentration on task without distraction, clear articulation, extensive vocabularies, and fine discrimination evident through reading. In addition Clark notes her group to be "well adjusted" with "powers of concentration" and self-sufficiency. The most striking feature found by Jackson and Klein (1997) and Jackson and Roller (1993) was a tendency to read very rapidly. Jackson (1988) groups the subskills within a hierarchical model. Precocious reading is perceived to be a superordinate general factor with three specific factors linked. These are decoding and word identification skills, text reading speed and accuracy, and the ability to make inferences from context. Widdowson, Moore, and Dixon (1999) suggest that voracity and fluency indicate that reading is not just an academic activity, but demonstrates the "purely pleasurable aspects of reading" (p. 215). These aspects were considered in my selection of research methods and affirmed in my results.

Descriptions of precocious readers link to the factors influenced by notions of self-regulated learning, which will be discussed later in this chapter; precocious readers appear to have a clearly established self-concept, motivation, cognitive and metacognitive skills. Strength in linguistic processing aligns to Vygotskian and Piagetian perspectives, highlighting thought and language (Piaget, 1959; Vygotsky, 1962). Self-concept and motivation are aspects of self-regulation that link to the affective dimension of precocious readers. Precocious readers are reported to have voracious appetites for reading (Anderson, Tollefson, & Gilbert, 1985), particular

responsiveness (Jackson & Roller, 1993), passionate motivation (Anderson, Tollefson, & Gilbert, 1985; Margrain, 1998), and be completely involved in the reading experience (Margrain, 1998; Wigfield, 1997).

Jackson and Roller (1993) note, "No formula for creating a precocious reader has been identified by researchers" (p. xviii). What has been consistently noted in the literature is that precocious readers play an active role in initiating and extending their literacy learning (Teale & Jeffries, 1982). According to Jackson and Roller (1993), "the most sophisticated precocious readers are children who have driven their parents and teachers to keep up with them" (p. 32). Anbar (1986) affirms that children are the critical "success factors", with parents responding to their children's interest in reading rather than deliberately teaching. In Clark's (1976) study, parents repeatedly asserted that the children created the conditions for their own success; the children were insistent on reading activities, not the parents. These research perspectives validate my own research position in this study.

Although they can demonstrate, model and facilitate, adults cannot actually "teach" children how to read and write if they are not ready (Weaver, 1994) in the same way that an infant cannot be taught to make sentences. The child interacts with the supports, both people and the environment, in order to develop and regulate their learning. Thus, precocious reading is considered as "self-taught" or "self-learned" to varying degrees because of the role of the child in the process (Backman, 1983; Fletcher-Flinn & Thompson, 2000; Henderson, Jackson & Mukamal, 1993).

The "natural" process of the reading development of precocious readers (Anbar, 1986; Henderson, Jackson & Mukamal, 1993; Smith & Elley, 1997) "develops within each child as a result of something internal to him or her" (Anbar, 1986, p. 78). Learning to read spontaneously is validated by reports that, in some instances, precocious reading appears with complete surprise to the parents. Some parents also expressed "bewilderment and even embarrassment" (Clark, 1982, p. 49). Others wanted to hide

their children's reading achievement because they feared (and received!) negative reactions from others (Clark, 1982; Margrain, 1988).

2.2.2 *Links to giftedness*

Jackson and Roller (1993) deftly reply to the question: "Are precocious readers gifted?" with the retort, "It depends what you mean by 'gifted' and what you mean by 'reading'". Precocious reading is moderately associated with general intelligence. Nearly half of Terman's 1925 highly gifted students learned to read before beginning school (Jackson, 1988; Tresize, 1978). However, some highly intelligent children do not read early, and some precocious readers achieve only average or even subnormal scores on general intelligence tests (Jackson, 1988). The IQ mean of Jackson's 1992 precocious readers was 130, meaning that half of the sample would not have been eligible for gifted programmes based on the intelligence test criterion (Jackson & Roller, 1993). Careful consideration and justification is required before intelligence tests are used with young children (Bracken & Walker, 1997; Harrison, Flanagan & Genshaft, 1997). In my study, I did not include IQ testing.

Precocious reading is, however, recognised as a *gifted behaviour* and the child is considered to demonstrate *gifted performance*. Jackson and Roller (1993, p. 33) note, "By definition, any precocious reader has passed a major developmental milestone at an unusually early age. The United States' Jacob K. Javits Gifted and Talented Student Education Act of 1988 recognises beginning to read early as an instance of high performance capability in a specific academic field (Jackson & Roller, 1993). Key New Zealander educationalist Hill (1977) focused on performance with his assertion that "gifted is as gifted does". The performance perspective can, however, mean children who have potential or ability, but who choose not to "perform" are not identified. Ericsson and Charness (1994) continued the emphasis on "expert performance".

Sternberg (1990) suggests that gifted "performance" should have four facets. The performance should be (i) excellent related to age peers, (ii) rare among peers, (iii) demonstrable on a reliable and valid assessment instrument, productive, and (iv) have

societal value. These factors can all be applied to precocious reading behaviour in Western societies. Level of performance can be considered precocious in terms of development (slope) or ultimate level (asymptote), with precocious reading identified in part by virtue of exceptional timing (Sternberg & Davidson, 1985). Sternberg, Ferrari, Clinkenbeard and Grigorenko (1996) reinforce the criterion of rarity for gifted children.

The criterion of rarity has clear relevance to precocious readers, who are identifiable because of their exceptionality (Morelock, 2000) or “abnormal” skill (Pressley, 1998). Jackson (1992) suggests Durkins’s 1976 estimate of the prevalence of precocious readers as being between 1 and 3.5% of the population is still an appropriate figure and links to findings in my study. Rarity of precocious reading and of self-regulation in learners under 4 or 5 years of age appears to be generally acknowledged (Biemiller & Meichenbaum, 1992; Jackson & Biemiller, 1985; Pressley, 1998).

Performance behaviours that typify gifted students include advanced vocabularies, the ability to think abstractedly (Hotere, 1998; Moltzen, 1996c), intellectual creativity (Cropley, 1993a, 1993b) higher academic self-concepts (Chapman & Tunmer, 1995), verbal fluency and self-reflective problem solving (Jackson & Klein, 1997). These gifted behaviours match the descriptors of precocious readers. In Hanlon’s (1982) study, teachers defined superior readers by describing reading abilities, language skill, and interest and attitudes. These specific abilities and motivation also link to behaviours of self-regulated learners, as will be discussed in section 2.3.

Outcomes for generally gifted students and “spontaneous” precocious readers can be similar. Although “taught” readers tend to even out by the age of 8 years (Hendy-Harris, 1990; Jackson & Klein, 1997), “naturally occurring” precocious readers appear to maintain their advantage (Durkin, 1976; Jackson, 1988; Jackson & Klein, 1997; Juel, 1991). Unfortunately, “boredom” is a catch phrase when the school experiences of able readers are reported (Clark, 1982; Hendy-Harris, 1990; Margrain, 1998). As they do with most gifted children, schools can find it challenging to support the needs of able readers.

Gifted students have been described with a variety of terms. These include *children with special abilities* (McAlpine, 1996), *children with exceptional abilities* (Cathcart 1994), *bright buttons* (Hotere, 1998), *able* (George, 1990, 1997), and *gifted and talented* (Colangelo & Davis, 1997; Davis & Rimm, 1994). Even precocious readers have had varying terms, including *young fluent readers* (Clark 1982), *young early readers* (Stainthorp & Hughes, 1998, 1999) and *young able readers* (Margrain 1998).

Regardless of the label, or the concept of giftedness, it is important to consider the individual child. This consideration influences the research approach to this study.

2.2.3 Acquisition of Literacy Skill

The field of emergent literacy recognises that literacy development begins at least at birth (Jackson & Roller, 1993; Nicholson, 2000; Pressley, 1998; Sulzby & Teale, 1991). Sulzby and Teale (1991) note, "in a literate society, young children . . . are in the process of becoming literate", with the child viewed as "an active constructor of concepts" (p. 728). Thus, all children are on an emergent reading continuum and do not begin to learn to read only when they start school. Precocious readers are not "learning to read"; they *can* read competently.

Although the reading acquisition process is accelerated in precocious readers, it does not appear to be to be in any way different from the process for conventional readers. It can be argued that all readers use self-regulated learning. The assumption in much of the literature appears to be that precocious readers, by virtue of their early acquisition of skills and strategies, are particularly effective as self-regulated learners. The process of reading acquisition is viewed theoretically as a series of stages (Anbar 1986; Bus & van IJzendoorn, 1995; Juel 1991; Sulzby & Teale, 1991). Concepts of stages inevitably mean that there are links between models and theories, particularly to Piaget (Juel, 1991). However, Jackson and Klein (1997) pertinently remind us that there is no "right" way of learning to read.

Fluency and rapid decoding were noted earlier as characteristics of precocious readers. The relevance of this particular skill to reading acquisition is that fluent readers are able to employ decoding processes in an “automatic” approach, without requiring conscious attention (Juel, 1991). As fluent readers, they can deploy their attention selectively (Juel, 1991). Fletcher-Flinn and Thompson (2000) describe the automatic reading of several precociously reading children. Kimio, for example, read unfamiliar words quickly, without sounding out individual letters or phonemes. Patel and Patterson (1982) also reported a limited degree of “sounding out” combined with accurate word recognition for their sample of kindergarten precocious readers. They suggested that the skills involved in word attack were acquired automatically as a result of familiarity with spelling patterns common to words that the child had experienced seeing in print.

2.2.4 Language, Learning and Literacy

The importance of speech in thinking, and organisation of thinking, has been a crucial tenet of Vygotsky and other soviet researchers (Pressley, 1998). Language is a critical example of socially interactive learning that subsequently becomes internalised.

Vygotsky recognised the relevance of internal speech for planning, problem solving and inner control (Vygotsky, 1966, 1978, 1993a, 1993b). It is also recognised that both language ability and learning are important components of cognitive development (Piaget, 1953, 1959; Sternberg & Davidson, 1985).

Unsurprisingly, children who are good readers tend to score well on measures of language proficiency, such as vocabulary tests (Hemphill & Snow, 1996) and rhyming skill (Bryant, Bradley, Maclean & Crossland, 1989). Stanovich (1986) notes “a reciprocal bootstrapping interaction between vocabulary and reading” (p. 379). The “cumulative advantage phenomenon” (commonly referred to as “The Matthew Effect”) is presented as being “almost inextricably embedded within the developmental course of reading progress” (Stanovich, 1986, p. 381). Mastery of oral language is presented as “one of the most critical factors in a child’s success in reading” (Jackson & Roller, 1993). However, although reading precocity and achievement in tests of “verbal intelligence” are related (Jackson, 1988; Jackson & Roller, 1993), verbal precocity is

neither necessary nor sufficient for precocity in reading and verbal precocity is not, on its own, a guarantee of high phonological awareness (Healy, 1982). My selection of research methods in this study included consideration of expressive and receptive vocabulary, but did not measure verbal “intelligence” or specific phonological awareness tests.

Children’s home context and community are an important influence on children’s learning. Four home factors are repeatedly associated with early conventional reading. These are availability of printed materials, reading modelled by adults, accessibility of writing materials, and positive feedback provided to children as they read and write (Pressley, 1998; Sulzby & Teale, 1991).

One way in which parents support their children’s language and literacy development is through storybook reading. Reading aloud often establishes routines and develops language skills, print awareness and reading comprehension (Arnold & Whitehurst, 1994; Chomsky, 1972; DeBaryshe, 1995; Pressley, 1998; Sulzby & Teale, 1991). Strong language skills, print awareness and comprehension are correlated with children having been read to (DeBaryshe, 1995). However, it is *interactive* storybook reading that is most effective (Nicholson, 2000). As Pressley (1998) clearly states, “Not all storybook reading is ideal; the quality of storybook reading very much affects a child’s cognitive development” (p. 2). Critical components of this cognitive development have been variously described as linguistic awareness (Backman, 1983), verbal intelligence (Jackson & Klein, 1997; Tunmer 1990), metalinguistic awareness (Pratt & Grieve, 1984a, 1984b) metalinguistic ability (Gombert, 1992; Herriman & Myhill, 1984; Tunmer & Grieve, 1984; Tunmer & Herriman, 1984; Tunmer, Herriman, & Nesdale, 1988) and linguistic skill.

It is the *responsiveness* of the interactions rather than simply the number of interactions that is critical (Jackson & Roller, 1993). Optimal storybook reading is interactive, with frequent questions (particularly open-ended questions), responsiveness and feedback at children’s contributions, rich discussions and animated conversations (DeBaryshe, 1995;

Jackson & Roller, 1993; Pressley, 1998). Considerable talk between adults and children is positively associated with early reading success according to Jackson and Roller (1993). At times, talking may exceed reading in a shared book experience. Types of talk include directing, responding, discussing, recounting, sharing and inviting; thus linking cognitive and affective domains (Jackson & Roller, 1993; Pressley, 1998; Sulzby & Teale 1991).

In “ideal” situations, parents respond to the child’s lead, and allow the child to set the pace (Anbar, 1986; Jackson & Roller, 1993; Weiss, 1985). Moss (1992) has highlighted the connection between early interaction and metacognitive development of gifted preschoolers. Brenna’s (1995) research on five early readers also noted the importance of responsive interactions. In Brenna’s research, “The caregivers of the five children seem to have facilitated the development of metacognitive strategies through scaffolding activities as well as providing good models of language” (p. 60).

Even more important than reading skill is fostering the love of reading (Baker, Scher & Mackler, 1996). Bus and van IJzendoorn (1995) present the assumption that reading is “evoked by the pleasure of sharing a book with the parent” (p. 998). Ensuring both high interest and cognitive challenge is necessary (Jackson & Roller, 1993). Part of the interest factor relates to the importance of book choice (Jackson & Roller, 1993). As the children’s age, knowledge and experience changes, social interaction and support also change (Snow, 1994; Sulzby & Teale, 1991). Interactive reading ensures that as the child’s capabilities develop they take over more of the interaction. Eventually, internalisation of skills developed within the interactive experience results in the child’s independent functioning with books. Storybook reading is therefore a powerful example of scaffolding (Baker, Scher & Mackler, 1996; Pressley, 1998).

The literature in this section highlights that parent perspectives on storybook reading are important aspects of research for a full understanding of the emergence of reading in general, and for precocious readers. Even when children have reportedly spontaneously learnt to read (without being taught), they did so within an environment of particular

social interactions. This study gathers information from parents about family reading, social support and key contexts as well as tests of the children's ability.

2.2.5 *Metalinguistic factors*

Metalinguistic awareness refers to the ability to play with, and think about, language and to think about it as a system (Bowey, 1988; Tunmer & Bowey, 1984). Metalinguistic awareness involves knowledge of the grammatical and pragmatic rules of language, and of the component sounds or phonemes (Nicholson, 1999; Tunmer & Bowey, 1984). There are four general types of metalinguistic ability. Tunmer and colleagues (Tunmer & Bowey, 1984; Tunmer & Chapman, 1993; Tunmer & Herriman, 1984; Tunmer, Herriman & Nesdale, 1988) note the types of metalinguistic ability to be syntactic, phonological, word and pragmatic awareness. The active nature of metalinguistic ability is evident in definitions of each type. Phonological awareness, for example, involves reflection and manipulation of phonemic speech segments, and syntactic awareness involves the "deliberate use of language prediction skills" (Tunmer, 1989, p. 10). Tunmer and Bowey (1984) viewed the types of metalinguistic awareness as operating on four levels – phonemic, word, form and pragmatic awareness. All forms of metalinguistic awareness are important components of becoming literate.

Metalinguistic awareness is of particular importance to research involving precocious readers owing to the child's thinking and development of insights, and also demonstration of active engagement. Tunmer (1990) notes, "Metalinguistic operations require the ability to *decenter*, that is to shift attention from message content to the properties of language used to convey content" (p. 111). The higher level metacognitive operations such as decentration and control processing are considered necessary to the development of both metalinguistic ability and concrete operational thought (Tunmer, 1990). Ehri (1991a, 1991b; Ehri & Wilce, 1985) affirms the position that reading acquisition facilitates phonological awareness. However, not all readers are equally skilled in metalinguistic awareness. A minimum level of metalinguistic competence is obviously required in order to be a reader, but competent readers would presumably be able to demonstrate greater skill in this area.

The metalinguistic skills developed by competent readers do not necessarily need to be explicitly understood by them. *Implicit* knowledge and *induced* understanding is hypothesised by Fletcher-Flinn and Thompson (2000) to be more critical. Development of implicit and induced theories strongly link to self-regulation, as will be discussed further in section 2.3.1. Cognitive and metacognitive skills are clearly related. Self-concept and motivation can also be justified as factors of relevance to metalinguistic internalisation. Fletcher-Flinn and Thompson (2000) note the additional dimension of context and parental support as being relevant to the three precocious readers whom they discuss in depth. Development of an internal lexical base from which induced sublexical relations (ISRs) can be derived may be facilitated through “extensive practice in contextual (book) reading with support from their parents” (Thompson, 2000, p. 202). In other words, metalinguistic ability fits within a multi-dimensional perspective of literacy acquisition, related to self-regulated learning and social context. In this study with precocious readers, metalinguistic skills were not specifically probed, but implicit knowledge, induced understandings, self-regulation and social support were considered.

2.3 Individualistic Learning Perspectives

This section considers learning within individuals. Self-regulation is defined and then linked to the process of learning. Metacognition and “self-scaffolding”, as deliberate self-directed learning processes, are discussed. Related discussion on motivation, learning dispositions and “spontaneous” or unexplained learning will follow in later sections. The discussion provides broader consideration and explanation of some of the concepts introduced in the previous section on precocious readers. Self-regulation, motivation and spontaneous learning are not characteristics exclusive to precocious readers. The case studies may clarify the concepts for broader consideration of learning.

2.3.1 Self-regulation

A discussion of self-regulation is important because social environments and individual cognition are linked through the process of learner internalisation (Rohrkemper, 1989). Bruner (1988) notes “the existence of a crucial match between a *support system* in the

social environment and an *acquisition process* in the learner” (p. 93). Viewing self-regulation as a process rather than a concrete skill relates to individual empowerment (Rohrkemper, 1989). Self-regulation necessitates competence with cognitive and metacognitive sub-skills, but, as a general over-arching concept, it relates to internalisation and engagement (McCombs, 1989; Rohrkemper, 1989; Zimmerman, 1989, 1994). The importance of self-regulation is that individuals are not merely replicating taught behaviours, but are able to show “adaptive learning – the facility to take charge of one’s self and one’s learning” (Rohrkemper, 1989, p. 148). Self-regulated learners can be distinguished from other learners through “their perception of academic learning as something they do for themselves rather than something that is done to or for them. They . . . become controllers rather than victims of their learning experiences” (Zimmerman, 1998, p. 1). Ridley (1991) asserts that antecedent attitudes, intentions and goals are as important as observations of behaviour in developing an accurate picture of self-regulatory capacity.

An important component of self-regulation is the notion that learners *actively* play a role in their own learning. Ridley (1991) refers to self-regulation as “the extent to which the student is an active agent in his or her own learning process cognitively, motivationally and behaviorally” (p. 32). It is also viewed as “an ongoing interactive process” (Ridley 1991, p. 34). The notion of active participation links to McCombs’ (1989) phenomenological examination of the role of the “self” in self-regulation. Corno (1989) similarly considers that a definition of self-regulated learning needs to include “an effort put forth by students” (p. 111). This was illustrated by the reporting of the parents of precocious readers that their children “took the lead”.

In describing “active learners”, Stuart McNaughton (1995) refers to their actions as strategic (adaptable and flexible), regulated (controlled) and knowledgeable. The concept of self-regulated learning presented in this review is broad enough not to be seen merely as *part* of the function of being an “active learner”, but synonymous with it. Elsewhere in contemporary research, similar perspectives of the active, skilled and

empowered learner describe “strategic learners” (Cullen, 1998) and “the autonomous learner” (Betts, 1985, 1992; Davis & Rimm, 1996).

Although all young children learn “actively”, some children are more focused, independent and knowledgeable (Kanevsky, 1992). Many of the children in Clarke’s (1982) study of precocious readers “seemed well able to absorb themselves in activities with a high level of concentration . . . were self-sufficient enough to occupy themselves . . . [and were] described as “tending to do things on their own” by parents and teachers (p. 42).

During observations of New Zealand children at indoor and outdoor play in early childhood settings (Cullen, 1998), strategic early childhood learners were characterised by a number of behaviours. These include persistence, use of alternative strategies to extend activities, use of self-directing language, use of and response to language that directs others, purposeful use of resources, use of adults and peers as resources. Higher order strategies observed in early childhood by Neuman and Roskos (1997) similarly included seeking information, correcting and giving feedback to others, self-correcting, checking a product against a standard, and gathering up resources before beginning a task. Early childhood programmes are able to provide meaningful contexts in which children are able to practise self-regulatory skills, according to Cullen (1998).

Biemiller and Meichenbaum (1992) define self-regulated learners and strategic learners as high achieving children who demonstrate “mature” use of mature metacognitive abilities. Pintrich and de Groot (1990) argue that there are three important aspects of self-regulated learning: metacognitive strategies, management and control of effort on learning tasks, and actual cognitive strategies. Paris and Byrnes (1989) add a fourth dimension (1989) referring to a “general, over-arching theory of self-regulation, which is composed of four component theories: self, effort, academic tasks, and instrumental strategies” (p. 174). These four factors are correlated to early reading acquisition and thus relevant to studies of precocious readers.

Henderson and Cunningham (1994) suggest, “The acquisition of self-regulation skills is not distinct from the development of other higher order conceptual knowledge” (p. 256).

They further clarify a sociocultural connection of self-regulation, stating:

From a Vygotskian perspective, self-regulation includes the co-ordinated exercise of several higher mental functions, such as memory, analysis, evaluation, synthesis, and planning, forming a psychological system within the context of interaction ... individual knowledge constructed within social context ... within the sociocultural perspective. (p. 256)

Research investigating how learners acquire the capacity to self-regulate learning is grounded in varying paradigms. Operant views focus on external factors, phenomenological views consider self-concept, self-worth and self-perceptions, social cognitive views consider learning, volitional views examine the ability to commit, cognitive constructivist views highlight Piagetian developmental changes, and Vygotskian views discuss internalisation (Zimmerman, 1989). Each of these paradigms provides valuable perspectives, with a holistic approach influencing this study’s design.

Self-regulated learning involves the learner in systematically orienting skills and behaviours toward learning goals (Schunk, 1989). Goal-directed cognitive activities that demonstrate self-regulated learning processes include: attending to instruction, processing and integrating knowledge, rehearsing, believing in capability and anticipating outcomes (Schunk, 1989), elaboration, organising, monitoring, goal-setting, persistence (Pintrich & de Groot, 1990), selecting, planning, modifying/constructing, and implementing and evaluating tasks (Biemiller, Shany, Inglis, & Meichenbaum, 1998). The behaviours of strategic learners can be observed as being focused, task-specific, flexible, adaptable, generative and generalisable, deployed in different settings, with different people, resources and content (McNaughton, 1995). These various behaviours and processes are all pertinent to precocious readers, as able learners in the domain-specific area of reading.

2.3.2 *Metacognition*

Metacognition has been described as “thinking about thinking”, and referred to by Papalia, Olds and Feldman (2004) as “awareness of what is going on in one’s own

mind" (p. 331). Metacognition involves both awareness of and use of cognitive strategies, such as rehearsal, visualisation, elaboration and organisation, and regulatory learning strategies, such as goal setting, planning, monitoring and self-testing about thinking and learning strategies, including interest, attention, preoccupation, visualisation, prediction and cues (Alexander & Schwanenflugel, 1994; Flavell, 1979; Garcia & Pintrich, 1994; Siegler, 1998). It has been suggested that most children between the ages of 7 and 11 years develop understanding that their their own thoughts can interfere with the ability to attend to a message (Miller & Weis, 1982). During reading, children develop understanding of the importance of structural cues in directing attention (Brown, Armbruster & Baker, 1986; Calfree, Chapman & Venezky, 1972; Schwanenflugel, Stevens & Carr, 1997).

Cullen (1998) notes that self-regulation "whether consciously carried out or not, is an indication of metacognitive ability" (p. 30). The reverse is surely evident; metacognitive strategy use provides an indicator of self-regulatory ability. Metacognitive dimensions of self-regulated learning suggest that students comprehend "not only the 'what' of cognitive strategies, but also the "how" and "when" to use strategies appropriately" (Pintrich & de Groot, 1990, p. 38). Metacognition is considered by many researchers to consist of three related aspects: declarative metacognitive knowledge, cognitive monitoring, and strategy regulation and control. Research has also generally, although not necessarily in all cases, supported the view that gifted children possess greater metacognition than the general cohort (see Alexander, Carr & Schwanenflugel, 1995, for a review).

Cognitive and developmental perspectives suggest that certain operations, including systematic and metasystematic thinking, are beyond the attainment of young children (Sternberg & Davidson, 1985). Metacognitive skills related to the adequacy of their own thinking have generally been considered difficult for young children (Bandura, 1997; Cullen, 1998). However, earlier "deficit" views of young children's abilities have been challenged, and recent ecologically based research "has yielded more positive findings about young children's metacognitive development (Cullen, 1998, p. 30).

There is little research on metacognition and young gifted children (Alexander, Carr & Schwanenflugel, 1994). Schwanenflugel et al. (1997) discuss the difficulty of separating individual and ecological influences on metacognition:

Theoretically, the metacognitive differences between gifted children and the general cohort are thought to emerge early because parents notice and support the advanced information processing capabilities of their gifted children. Mothers of gifted preschoolers were more likely to make comments that were metacognitive in nature during dyadic problem solving compared to mothers of nonidentified children. Thus, mothers of gifted children may provide early scaffolding of higher level metacognitive thinking skills that will assist children later on in school performance. (p. 26)

Basically, then, it appears that when gifted children have an insight regarding metacognitive knowledge, they are more likely to infer situational and causal attributions as well. (p. 34)

Schwanenflugel et al. (1997) also note that educational implications for teachers include acknowledgement that use of metacognitive comments and strategies by young children may be indicators of giftedness. "These are the children who are likely to be more strategic, and therefore 'smart', in their cognitive processing" (Schwanenflugel et al., 1997, p. 34). Shore (2000) proposes that there are qualitative differences in how gifted children think.

Brenna's (1995) research with five early readers described metacognitive strategies that included distinguishing between different strategies for different purposes, analysing effectiveness, variation of strategies when tired and utilising a "knowledge of self to regulate employment" (p. 57). Brenna categorised metacognitive reading strategies of the early readers by considering a) self-knowledge, or knowledge about cognition, b) task-knowledge, which includes self-regulation and c) metacognitive reading strategies, encompassing text-knowledge.

The importance of environmental factors and interpersonal interactions is fundamental to the socio-cultural perspective. However, the way *individuals* mediate situations and available resources and reflect and use strategies has been less consistently linked to

Vygotsky. Brenna (1995) linked self-regulation and metacognition with Vygotskian perspectives on learning in her work with early readers.

. . . a knowledge of self supported active decision-making in terms of what, as well as how, these children read. They applied knowledge of themselves as readers to create situations in which they would be successful. In this way, they were able to modulate their own zones of proximal development (Vygotsky, 1978), creating situations in which they would be able to guide themselves as readers and solve problems independently. (p. 57)

Thompson (1999) also acknowledges the critical role of the individual within literacy learning, stating that repeated associations with print are necessary, and “may be provided by teachers, peers or parents, *or self-generated by the child*” (p. 28, italics added). Thompson (1999) further discusses “self-teaching” of reading vocabulary and *untaught* instances of the alphabetic principle (p. 30). Thompson’s research highlights the connection between metacognitive abilities and precocious reading. The results of my study affirm individual thinking and cognitive abilities and “self-teaching” and “self-generation” characteristics in precocious readers.

2.3.3 Motivation

Ridley (1991) states, “Motivation can be understood as a dynamic, self-determining dimension of the self-regulatory process”, emanating from interaction between self-conception, self-processes, and the environment (p. 47). Motivation is self-determining and a “process of initiating, sustaining and directing activity” (Gambrell & Morrow, 1996, p. 116). Although Deci, Vallerand, Pelletier, & Ryan (1991) perceive self-determined behaviour to be the penultimate in motivated human behaviour, the reverse is also true; intrinsic motivation and action is a critical component of self-determined behaviour.

Environmental and social links with motivation tie concepts to contextual perspectives because learning activities are motivating when embedded in a social system (Henderson & Cunningham, 1994). Social interaction, goal orientation and self-efficacy are linked in concepts of motivation discussed by Guthrie and Alao (1997), McCombs (1997) and Wigfield (1997). However, although behaviours are learned and beliefs

developed in a social context, motivation is an internal process influenced by personal beliefs (McCombs, 1997; Pintrich & de Groot, 1990). Individual differences are fundamental; what is intrinsically motivating for one person differs from what is motivating for another (McCombs, 1997).

Intrinsic motivation is perceived as task-involved rather than ego-involved (Oldfather & Wigfield, 1996). Wigfield (1997) defines *intrinsic* as being motivated and curious to do an activity for its own sake (thus linking to dispositions for learning), and *extrinsic* as being motivated in an activity as a means to an end or as a result of being told to. Intrinsic motivation links strongly to self-regulated learning through concepts of: continuing motivation (Sorenson & Maehr, 1976), the continuing impulse to learn (CIL) (Oldfather and Wigfield, 1996; Wigfield, 1997) and the 'flow experience' (Czikzentmihalyi, 1990). Each of these approaches is strongly linked to social constructivism, as the characterised intense involvement, curiosity and search for understanding do not exist in a vacuum.

Motivation is discussed here in the most general terms; a vast body of research exists that expands motivational and volitional concepts. Motivation promotes the *intention to learn*, and volition controls *intentions and impulses* (Corno, 1989). Oldfather and Wigfield (1996) refer to "humans at their most intrinsically motivated when their behaviour is self-determined, under their own volition, and related to their broader sense of self" (p. 93). Strictly speaking, therefore, it is volition that has the most significant role to play in self-regulated learning. For my research with precocious readers, volition or application of interest is clearly relevant. Descriptions of gifted readers note that they do not generally need to be motivated by others; they generally have voracious appetites for reading and intrinsically enjoy reading (Howell, 1987; Schlichter, 1989). However, a significant body of contemporary literature in educational psychology does not distinguish between motivation and volition (Corno, 1989). The term *motivation* is used globally to include both intention and action stages. For this reason, my research discussion uses the global notion of motivation to encompass volition.

Wigfield (1997) suggests that it is useful to consider motivation at a domain specific level, for example, reading motivation. A multidimensional approach would tap the competency and efficacy beliefs of students, including reading efficacy, reading work avoidance and reading challenge. Intrinsic aspects would consider achievement values and goals, reading curiosity, reading involvement, and the importance of reading. Extrinsic considerations include competition, recognition and grades. Examining social reasons for reading and reading compliance would represent social aspects of reading (Wigfield, 1997). Self-beliefs about reading competence positively correlate to reading frequency (Tunmer, Chapman, Prochnow, & Ryan, 1997; Wigfield, 1997), which in turn relates positively to achievement (Stanovich, 1986). The “Matthew Effect” applies here, wherein the rich get richer: being motivated enhances the experience, which supports motivation (Stanovich, 1986).

Whereas cognitive models investigate the *how* of learning, motivational research models consider the *why*. As both factors operate simultaneously, it is important to consider both perspectives (Ehrlich, Kurtz-Costes & Loridant, 1993; Garcia & Pintrich, 1994). It is critical to consider the motivational factors of precocious readers. If reading is externally encouraged rather than generated from young children’s genuine interest, then academic achievements may have only short-term gain (Smith & Elley, 1994, 1997).

An example of a strongly self-motivated precocious reader was Maxine, reported by Fletcher-Flinn and Thompson (2000):

Most reading related activities ... were initiated by Maxine getting out the material and bringing it to her parents. She never left the house without some books, and often slept with them as security objects. It is her parents’ belief that she was self-motivated and largely taught herself to read (p. 8) ... “All of her [Maxine] storybook reading was self-initiated, and since it was her favourite activity, she read books periodically during the day. Her reading behaviour and choice of books were consistent with our formal analysis of her reading level. (p. 10)

My study of precocious readers contributes additional case studies of precocious readers, and will consider the motivation of each child.

2.3.4 *Self-awareness and Self-concept*

Self-esteem refers to a sense of perceived self-worth; self-confidence refers to a belief by an individual in their own ability to produce results or accomplish tasks competently (Schunk, 1991). Self-efficacy is defined by Bandura (1986) as people's judgements of their *own* organisational competence and performance. Self-efficacy and self-concept develop as a result of internalised, individual reflection and motivation (Craven, Marsh & Debus, 1991a, 1991b). It seems evident therefore, that self-efficacy clearly links to self-regulation, as there is a necessary component of reflection, awareness of associated cognitive strategies, and evaluation. The relevance of self-efficacy to self-regulated learning includes positive correlation with academic achievements, social skills, persistence, motivation (Schunk, 1991) and performance (Pintrich & de Groot, 1990). Zimmerman (1989) affirms, "Students' perceptions of themselves as learners and their use of various processes to regulate their learning are critical factors in analyses of academic achievement" (p. 1).

Some researchers have hypothesised that concepts of self-worth and efficacy lack consolidation below 8 years of age (Chapman & Tunmer, 1995; Paris & Byrnes, 1989). Paris and Byrnes (1989) suggest that children under the age of 7 to 8 years of age having exaggerated expectations of their own learning abilities. McCombs (1989) refers to global self-system development; self-regulation is considered to develop naturally with development of self-concepts and such self-processes as self-awareness, self-monitoring and self-evaluation. However, if particular individuals can attain cognitive and metacognitive skills earlier than expected (Rawlinson, 1996), precocious development of self-efficacy is not surprising.

As self-concept and related constructs develop through social interaction, the link with Vygotskian theory is strongly evident. Interaction with the environment and people help to shape "collective self-perceptions" (Schunk, 1991). As previously noted, self-regulation involves internalisation of concepts learned in a social context.

Reading provides an interesting domain-specific context within which self-concept issues can be explored. Books can be effective tools to support the affective/ emotional needs of children (Davis & Rimm, 1994). Powerful affective experiences are gained through “the excitement of reading wonderful books” (Oldfather & Wigfield, 1996, p. 102). Even when adults may initially choose the material, readers take increasing self-control over the choice of literature. Self-determination is reflected by the research finding that, when asked about the most interesting book they had read for pleasure, 88% of the children reported that they had self-selected the book (Gambrell & Morrow, 1996).

2.3.5 *Dispositions to learn*

Dispositions have been referred to in various ways throughout literature: *good thinking* (Perkins, Jay & Tishman, 1993), *good habits of mind* (Dewey, as cited in Perkins et al.), *habits of mind* (Katz, 1999a), *habitus* (Bourdieu, 1993), and *spirit* (Siegel, 1988). Perkins et al. (1993) describe three aspects of dispositions: inclination, sensitivity and ability. Carr (2001) uses the terminology of being “ready, willing and able” to learn. Katz (2003) also reminds us of children’s “inborn disposition” (p. 16) and “inborn quest” (p. 15) to learn. She also reinforced the need to support “basic intellectual dispositions” (Katz, 1999b). Dispositions contribute to children’s intellectual thinking and academic development, alongside social responsibilities and participation. Links to the work of Perkins, et al., and New Zealander Margaret Carr are particularly important to this study.

The New Zealand early childhood curriculum, *Te Whāriki* (Ministry of Education, 1996a), includes the statement, “Dispositions provide a framework for developing working theories and expertise” (p. 45). Alongside the publication of *Te Whāriki*, the Ministry of Education funded a research which would develop and trial approaches that would link the strands and goals of the curriculum to the needs of practioners. The *Project for Assessing Children’s Experiences* (PACE) was funded to holistically consider ways that teachers could be supported to assess children’s experiences, using an “empowering, holistic, transactional, and ecological” approach (Carr, 1998a). The

project identified five domains of learning dispositions that could be linked to *Te Whāriki*:

- courage and curiosity
- trust and playfulness
- perseverance
- confidence
- responsibility (Carr, 1998b).

These five dispositions were re-explained as children's learning "decisions" (Carr, 1998b, p. 22), and teachers' "criteria for observing" (p. 29)

- taking an interest
- being involved
- persisting with difficulty, challenge or uncertainty
- communicating with others (or expressing a point of view or feeling), and
- taking responsibility (or taking another point of view) (p. 22).

The New Zealand work on dispositions reflects a social constructivist philosophy, with "belonging" and "responsibility" highlighted. The dispositions have become widely used by early childhood teachers, with one assessment tool linking observation to the curriculum via dispositions known as "learning stories" (Carr, 1998b, 1998c, 2001). The dispositions also became linked to "teaching stories" through research on teacher evaluation in early childhood (May & Podmore, 2000; Podmore & May, with Mara, 1998). These projects on teaching and learning dispositions have provided consistent messages about the importance of the early childhood curriculum (Carr, May & Podmore, 1998; Carr, May & Podmore, with Cubey, Hatherley & Macartney, 2000). The importance of dispositions continues in New Zealand (Carr, 2004), including through the recent publication of early childhood exemplars showcasing learning story narratives (Ministry of Education, 2005e).

Perkins, et al. (1993) focus on "thinking dispositions", defining these as "tendencies toward patterns of intellectual activity that condition and guide behaviour specifically"

(p. 6). The seven dispositions, proposed by Perkins et al., have some links to those used by Carr, but also maintain a particular focus on intellectual thought. These dispositions are:

- to be broad and adventurous
- toward sustained and intellectual curiosity
- to clarify and seek understanding
- to be planful and strategic
- to be intellectually careful
- to seek and evaluate reasons
- to be metacognitive (Perkins, et al., 1993, p. 6).

Katz endorses the importance of supporting the development of intellectual dispositions for children.

Intellectual dispositions include the dispositions to make sense of experience, to theorize about causes and effects, to hypothesize explanations to account for observations, and to analyze and synthesize whatever information is available. These dispositions can be seen when children are engaged in investigations of things around them in the course of which they persist in seeking answers to their questions and solutions to the problems they encounter (Katz, 1999c, p. 2)

As a framework for development of working theories and expertise, consideration of dispositions provides an important contribution to holistic understanding of the children in this study. Commonalities and differences between the dispositions referred to by Carr and by Perkins et al. will be re-considered in chapter 7, in terms of the dispositional data from the children in my study.

2.3.6 *Spontaneous Learning*

This section discusses learning that cannot be accounted for through social scaffolding or metacognitive self-scaffolding. Spontaneous learning implies a rapid and unexpected acquisition of knowledge; it does not mean to suggest that the learning “comes from nowhere”. Although some colleagues have debated with me the validity of spontaneous learning, I have been able to link the concept to Piaget and Vygotsky. After reading

excerpts from the posthumous publication of Vygotsky's *Thought and Language*, Piaget (1962) responded,

In all of my pedagogical writings, old [*Encyclopédie française*, article *Éducation nouvelle*.] or recent, [*Le Droit à l'Éducation* dans la collection *des Droits de l'homme*, UNESCO] I have, on the contrary, insisted that formal education could gain a great deal, much more than ordinary methods do at present, from a systematic utilization of the child's spontaneous mental development . . . it should be clear that to my mind it is not the child that should be blamed for the eventual conflicts, but the school, unaware as it is of the use it could make of the child's spontaneous development, which it should reinforce by adequate methods instead of inhibiting it as it often does.

The second problem, which is really an extension of the first on a more general level, is the relation between spontaneous concepts and scientific notions as such. In Vygotsky's system, the "key" to this problem is that "scientific and spontaneous concepts start from different points but eventually meet." On this point we are in complete accord, if he means that a true meeting takes place between the sociogenesis of scientific notions (in the history of science and in the transmission of knowledge from one generation to the next) and the psychogenesis of "spontaneous" structures (influenced, to be sure, by interaction with the social, familial, scholastic, etc., milieu), and not simply that psychogenesis is entirely determined by the historical and the ambient culture. I think that in putting it thus I am not making Vygotsky say more than he did, since he admits the part of spontaneity in development. It remains to determine wherein that part consists.

The concept of spontaneous learning appears to be an area within which Vygotsky and Piaget were in agreement, with Vygotsky (1962) stating, "Piaget's characterization of the child's spontaneous concepts as nonconscious and nonsystematic tends to confirm our thesis" (p. 92). Vygotsky (1962) suggests that "spontaneous" concepts may originate from a situation or event, but the child is not consciously attending to the concept; on the other hand, "scientific" concepts may be overtly mediated and require conscious reflection. Psychological abilities of precocious readers extend the influence of socially constructed learning experiences and environment. At the first annual symposium of the Jean Piaget Society, Piaget himself commented,

The title "Equilibrium" refers to one factor that I think is essential in cognitive development. In order to understand the role of this factor we must relate it to the classical factors that have always been understood to be pertinent in cognitive development. There are three such classical

factors: (1) the influences of the physical environment, the external experience of objects; (2) innateness, the hereditary program; and , (3) social transmission, the effects of social influences. It is clear that all three are important in cognitive development. (Piaget, 1972a, p. 1)

Spontaneous learning acknowledges that psychological abilities of children include use of strategies and *discovery* of strategies (Siegler, 1991). When testing memory performance, Perez, Peynircioglu and Blaxton (1998) found that explicit memory performance improves with age, but *implicit* learning abilities were available at a young age, with little difference between preschoolers, elementary school children and adults. Ehri (1991a) also discounted memory as a plausible explanation for literacy competence. Experiments demonstrated that where analogy and processing of contextual cues could be discounted, “spontaneous induction may be demonstrated by default” (p. 384). This study of precocious readers will consider implicit learning of the participating children.

Torrey (1979) described spontaneous reading as reading that “comes naturally”. Smith and Elley (1997) confirm that ‘we also know that it is possible for readers to go directly from print to meaning, without lessons on sounding out’ (p. 143). Thompson, Cottrell and Fletcher-Flinn (1996) explain the implicit processes:

As the reader’s stored print word experience changes, the sublexical relations expand. Induction of these relations will be updated continuously and spontaneously by the reader and stored in the updated form. While the information for all the simple independent grapheme-phoneme correspondences can be provided through direct teaching, this is not the case for sublexical relations. It would be implausible for a teacher to point out all such relations for each new word as it is acquired. While the large number of interrelationships is within the capacity of nonconscious processing, the explicit attention to all of them would be overwhelming for both teacher and child. (p. 194)

Thompson and Fletcher-Flinn’s work with precocious readers has supported their “Knowledge Sources” theory of literacy acquisition (Thompson & Fletcher-Flinn, 1993). According to Thompson (1999), precocious readers rarely attempt overt “sounding out” of words. Instead, they utilised an implicit mechanism of phonological recoding. Induced sublexical relations (ISRs) are implicitly formed as a result of the

child's accumulating reading vocabulary "which means that the child is largely unaware that the learning is occurring" (Thompson, 1999, p. 31).

Induced sublexical relations (ISRs) provide one type of phonological recoding; an application of implicit knowledge of the alphabetic principle. ISRs comprise relations between orthographic components of words and corresponding phonological components in memory which the child learns largely implicitly and hence unconsciously. These relations are common to print words which have become part of the child's reading vocabulary" - the child unconsciously induces implicit knowledge (p. 13). "Unlike taught sounds for letters, it is clear that most of the induced sublexical relations cannot be directly taught. There are too many and some are too complex for that. Most are acquired through the nonconscious processing that constitutes implicit learning (p. 29).

Thompson's model illustrating the difference between the knowledge source theory and other forms of learning to read (Thompson, Fletcher-Flinn & Margrain, 2002, p. 2) is illustrated in Figure 4. Thompson's model applies specifically to learning to read. In this study, I consider whether the model is applicable more broadly. For example, Góncú and Katsarou (2000), and Neuman and Roskos (1989) discuss the concept of "spontaneous play".

Theories of learning to read:

- Share (1995): (a) \longrightarrow (b)
(a) is necessary
 - Thompson ('93, '99), Thompson et al. ('98, '90), Knowledge Sources theory
 \longrightarrow (b)
(a) is optional
-

Figure 4. Knowledge sources theory: A comparison by Thompson (2002).

The importance of spontaneous learning can be illustrated with Piaget's (1972b) work on genetic epistemology. Innovation, or "the creation of novelty" (p. 85) is important

for hereditary variety. It is important that children are encouraged and supported as unique individuals and celebrated as innovative and novel thinkers and learners.

2.4 Teaching-and-Learning

The section begins with definitions and models of learning, which are then followed by key concepts: scaffolding, “zones” of learning, co-construction, and the use of mediating artifacts. Where possible, examples of teaching and learning are literacy-related, for example, storybook reading as an example of interaction using books as artifacts. While the previous sections considered individualistic perspectives on learning, this section more directly considers environmental and social influences.

2.4.1 Defining Teaching-and-learning

Microsoft Thesaurus (Microsoft Word Thesaurus, Version 2002) provides the following similes for a *teacher*: tutor, instructor, coach, trainer and lecturer. These are all directive terms, which do not include the supportive and responsive nature of early childhood or home-based teaching. As noted in Figure 3, a social constructivist perspective of a teacher is as “Collaborator, co-structor, mediator and guide”. The interconnectedness of teaching and learning are clearer in several languages other than English. The Russian word *obuchenie*, the Māori word *ako* and the Norwegian/Swedish word *lära* mean both teaching and learning. Mercer (2002) suggests use of the phrase “teaching-and-learning” (p. 152). In this study, teaching and learning are discussed separately, but with the intention that each term simply provides a different window through which to explore teaching-and-learning influences. Elements of both social constructivism and cognitive constructivism are drawn on in the consideration of teaching-and-learning discussed in this chapter.

New Zealander Barbara Jordan provides a useful teaching continuum (2003, p. 242, modified from Bredekamp and Rosegrant, 1995), replicated in Figure 5 below. Jordan’s model highlights that teaching approaches range from non-directive to directive. A change Jordan made from the previous version of the continuum (Bredekamp & Rosegrant, 1995) was to position scaffolding as more directive than co-construction. I

have drawn on Jordan's model when presenting results of this study, using the term "responsive" to describe the non-directive elements of the model. Responsive teaching is informed by contextual approaches to literacy education; for example the belief that "children benefit from instruction that is embedded in spontaneous activities that are meaningful to children such as play" (Göncü and Katsarou, 2000, p. 221).

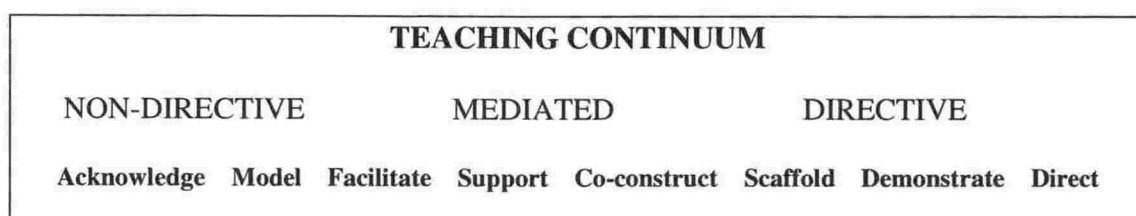


Figure 5. Teaching continuum (Jordan, 2003).

Hughes and Hughes (as cited in MacNaughton & Williams, 2004) provide a metaphor of teaching as "lighting a fire". This metaphor links to concepts of learning as fired by catalysts, and descriptions of precocious readers as being driven by an "internal fire".

In some respects teaching is like lighting a fire. We bring heat to paper to enable it to start combining with oxygen in its environment. In the classroom our function is similar; we bring to bear various teaching devices with a view to producing a 'flash' between each child and some part of his [and her] environment. (MacNaughton & Williams, 2004, p. xiii)

The metaphor of fire relates to this study on precocious readers through consideration of what "sparks" early learning and what fuels the ongoing fire.

The American Psychological Association (APA) taskforce on psychology in education considered a model of factors affecting learning, including intellectual (cognitive and metacognitive), motivational, developmental, personal (including self-assessments) and social factors (McCombs, 1997). Positive interrelationships between intra-individual, environmental and historical forces and time frames are described in Feldman's coincidence theory (Colangelo & Davis, 1997). Chance and environment are considered within Tannenbaum's model of interrelating factors (Sternberg & Davidson, 1985). Schunk (1989) presents behaviours, environmental variables and cognitions and other

personal factors in a three-cornered reciprocal arrangement. McCombs' (1996) model of skill, will, and social support elegantly combines factors of self-concept, cognitive and metacognitive competency and interpersonal context. Rohrkemper (1989) claims present day attempts to integrate "will" and "skill" factors were "anticipated" by Vygotsky. Self-concept, motivation, cognition and metacognition have all been identified as critical contributing factors to self-regulation of learning. An important way of viewing these factors is not only as contributing, but also as interrelating. No single focus or factor provides any complete answer; therefore, diverse and dynamic perspectives of learning are important to consider (McCombs, 1996, 1997; Wink & Putney, 2002; Zebroski, 1994). The multi-method nature of this study reflects the importance of a broad perspective of learning.

2.4.2 Scaffolding and the Zone of Proximal Development

The metaphor of scaffolding describes what happens when a more competent person supports the learning of a "less competent" person (Cazden, 1988, 1992; Wood, Bruner, & Ross, 1976). Scaffolding is both an action and a process; Flear (1995) states, "Scaffolding is used to describe quality interaction over time between an adult and a child" (p. 24). There are three main stages to scaffolding. Firstly, the adult (or peer) instructs, models, or guides. Through guided practice, the child is then increasingly empowered and accepts responsibility: "The adult hands over responsibility for the task to the child: the adult does less and less as the child does more and more" (Flear, 1995, p. 24). Finally, the child is encouraged to complete tasks independently. The scaffolding analogy thus highlights that the support should be temporary (Smith & Elley, 1994, 1997).

The zone of proximal development (ZPD) links to scaffolding because it is important that scaffolding occurs in the "zone" where it will be of most advantage. Vygotsky (1978) describes ZPD as being beyond what the child can independently achieve, but within reach when the child is supported.

The zone of proximal development . . . is the distance between the actual developmental level as

determined by independent problem solving and the level of potential development as determined through problem solving under adults guidance or in collaboration with more capable peers. (p. 86)

ZPD has also been referred to as the “zone of potential development” (Brown & French, 1979), which is perhaps clearer and links well to the concept of potential discussed within literature on giftedness.

The concept of ZPD has been hugely influential in pedagogical practice as it has provided teachers with a rationale for actively engaging, and an obligation to actively engage, in collaboration with their students. A misinterpretation of Piaget’s work, for example, led to teachers providing resources for children then standing back to observe the children’s independent exploration. An example of ZPD in practice is where a child can pull the zip up on his/her jacket, but only if it is first started by an adult. Teachers can scaffold the child’s development in this skill by providing lots of practice with fine motor skill activities.

A difficulty with ZPD is how to know where the real limits of the “zone” are (Valsiner, 1987). For example, in New Zealand the *School Entry Assessment* (Ministry of Education, 1997) and *Observation Survey Of Early Literacy Achievement*¹⁰ (Clay, 1993b) purport to gather information on the child and assist the teacher in working with the child. Yet the ceiling for these assessments is so low that little useful information can be gathered about an academically able child (other than all letters are known, dice can be read, and so on). Clay’s word test is included in the (1993b) *Observation Survey Of Early Literacy Achievement* (after a full year at school for most children), the test being one of three lists, each of 15 words such as “I”, “me”, “am”, “not” and “too”. Correctly reading all 15 words on a list will simply result in a score of 15; the test will not illustrate the competency level of children who can read beyond this word list level.

¹⁰ Colloquially referred to as the “6 year net”

Language used when discussing children and their learning is important to consider. Although Vygotsky's terminology of "normal", "primitive", "mental", "retarded", and so forth (1966, 1993a, 1993b) could be attributed to the age of his original work, it can be argued that the language surrounding scaffolding (more capable/less capable) also reveals a deficit view of learning. Furthermore, Litowitz (1993) has concerns that the ZPD is

an adultocentric view of the child's behaviour ... too exclusively concerned with what is being done by the dispensers of knowledge ... A child performing in the zone of proximal development with an adult believes himself to be accomplishing the task and that the adult's organization of the task ... permits that illusion or fantasy. (p. 190)

The relevance of adultocentricism for this study with precocious readers is to consider the extent of and necessity for scaffolding support and ZPD teaching for the precocious readers.

2.4.3 *Teaching-and-learning zones: ZFM, ZPA, IZD, ZEF*

The zone of proximal development is the best known and best referenced "zone". However, it is not the only zone referred to in broader educational psychology literature. Valsiner (1987) considers that children's learning is explained through three mutually interacting zones: the zone of proximal development, the zone of free movement and the zone of promoted action. Mercer (2002) positions his concept of the intermental development zone as a Vygotskian approach, and Berk and Winsler (1995) acknowledge the zone of executive functioning as originating directly from Vygotsky. The varying zones highlight diverse aspects of learning, and the need for diverse teaching approaches.

The "Zone of Freedom of Movement" (ZFM) originated with Kurt Lewin's field theory (Valsiner, 1987). ZFM structures (or limits) the child's access to areas in the environment, and availability to, accessibility of, and interaction with, objects. Limits, or boundaries are negotiated with (or imposed by) caregivers. Although there may well be negotiation, Valsiner (1987) describes the child's caregiver as ultimate "gatekeeper" of ZFM. Limits also change as the child develops or moves into an area with a different physical structure. For example, the ZFM of a young child may include some children's

books but exclude encyclopaedias. The ZFM could include a community library and children's bookstores but could be limited by family income and transport.

The "Zone of Promoted Action" (ZPA) "focuses on the promotion of new skills" (Valsiner, 1987, p. 99). Parents may make special efforts to promote a child's particular interactions with objects or other actions; therefore, the ZPA reflects social expectancies. However, "the important characteristic of ZPA is its *non-binding nature*" (Valsiner, 1987, p. 100). Parents may, for example, promote children's interest in the alphabet and books. Children may, or may not, actually engage with the promoted zone. Valsiner (1987) notes, "It is more accurate not to separate the two zone-concepts from each other, but to consider them as parts of the same whole: the ZFM/ZPA complex" (p. 101).

"For a teacher to teach and a learner to learn, both partners need to use talk and joint activity to create a shared framework of understanding from the resources of their common knowledge and common interests or goals" (Mercer, 2002, p. 143). As a co-constructive framework of understanding, the intermental development zone (IDZ) is a zone within which dialogues continue, misunderstandings are minimised and motivation maximised. Mercer also notes that the adult-child interaction inherent within ZPA means that it is both dynamic and transformative. When interactive participation for mutual advantage occurs within the IDZ, capability and understanding will improve and learners will "transcend their established capabilities. ... If the dialogue fails to keep minds mutually attuned, however, the IDZ collapses and the scaffolded learning grinds to a halt" (Mercer, 2002, p. 143).

Berk and Winsler's (1995) description of the zone of executive functioning (ZEF) indicates that there are both social and cognitive constructivist elements informing ZEF:

Another goal of scaffolding is to foster self-regulation by allowing the child to regulate joint activity as much as possible. This requires the adult to relinquish control and assistance as soon as the child can work independently. It also meant that adults should permit children to grapple with questions and problems and intervene only when the child is truly stuck. When adult

intervention has these characteristics, the child stays in what has been called the *zone of executive functioning*, a mode in which he or she is largely responsible for making decisions and determining joint activities – in other words, the child is much like a manager in an ‘executive’ role. (Diaz, as cited in Berk & Winsler, 1995, p. 30)

For self-regulation to effectively develop, adults must withdraw support and children actively take over management, as soon as possible. While this would appear to be a fundamental tenet of scaffolding, a crucial difference may be that ZPD requires working toward independence of tasks and skills while ZEF supports the *process* of learning. Including consideration of motivation and power issues highlight that the child is not only *able to* take over, but *chooses to*.

This study will consider any examples of “zones” in action from the case studies of precocious readers, as part of the focus on social support and individual learning.

2.4.4 Co-construction

Co-constructivism (or co-constructionism) is defined by McNaughton (1995) as “a theory of psychological development which explains development as a product of dynamic, mutual and interdependent constructions of an active learner and social and cultural processes” (p. 199). When children go to the library and choose books with their parents, for example, there are shared understanding and values, and expressions of social and cultural identity.

Jordan (2003, 2004) discusses the critical difference between “scaffolding for” and “co-constructing with”. She states, “The teachers and I in three of the four centres ... came to view the scaffolding metaphor as a limiting one when applied to encouraging the use of a full repertoire of teachers’ interaction skills” (2003, p. 249). Instead, the co-constructive experiences described in Jordan’s (2003) research were deemed to be authentic, participatory, meaningful, empowering and enjoyable.

Both contributors are considered to be experts . . . the child’s understandings are as valid as the adult’s and on many occasions the child will be acknowledged as more of an expert than the adult. Each participant listens to the other’s ideas, contributes from their own, and together they develop their unique ‘shared meaning. (Jordan, 2004, p. 37)

Jordan's social constructivist perspective thus focuses on the adult as a fundamental contributor to the child's learning. This study with precocious readers acknowledges the importance of co-construction, while also highlighting the individual learning factors.

Lawrence and Valsiner (1993) describe a "bidirectional" model of culture transmission, in which cultural "input" is transmitted *to* individuals, but also actively *transformed by* individuals. Alongside this individual transformation of meaning, a reciprocal process of contribution occurs. "What has become part of the conceptual system is injected back into the environment ... thus becoming the source of a cyclical influence of the social on the individual domain, and the individual on the social" (Lawrence & Valsiner, 1993, p. 262).

An example of co-construction with a precocious reader is when the parents of "Maxine" (Fletcher-Flinn & Thompson, 2000) tried pointing to the words of books as they read to her. "Maxine had no interest in this activity, so it was discontinued" (p. 184). The parents then reportedly read the Ready to Read books to Maxine *at her request* "like any of her other storybooks (without any pointing)" (p. 184). This example illustrates that her parents were responsive to Maxine's interests, supporting her learning rather than directing and instructing. Fletcher-Flinn and Thompson state, "Although her parents provided early informal instruction in reading, it was primarily *in response* to Maxine's exceptional interest in letters and words" (p. 184, italics added). The case studies in this study provide an opportunity to consider whether this responsive parenting approach is a more widespread trend in families of precocious readers.

Peers provide important co-construction. In a busy early childhood setting, the number of peer-peer interactions is likely to greatly exceed the number of teacher-child interactions. In addition, unwritten social codes may mean that the opinions of peers are particularly powerful, even in early childhood. Peers may have a shared vocabulary and interests that excludes adults (Pokemon is one example). Eggen and Kauchak (1995) affirm, 'Learners co-construct more powerful understandings than individuals can construct alone' (p. 298). In this study, observations in early childhood centres and

school settings provided an opportunity to gather data relating to social interaction, including peer interactions.

There are a number of differing definitions of peers; for the purposes of this study, peers are defined as similar age children sharing early childhood, school or play contexts. Peers are important for two reasons: for social partnership in collaborative activity and for participation in expert-novice mediated learning. In New Zealand, a model of peer support is referred to as “tuakana-teina” (one translation is big sister-little sister). The model builds on notions of collective/ whānau (extended family) responsibility, and also values reciprocity. Tuakana-teina is not a “top-down” model of directive teaching, but a collaborative contribution to the group (Royal-Tangaere, 1997). This study of precocious readers is a New Zealand study, influenced by a range of New Zealand perspectives including the importance of partnership.

2.4.5 *Mediating Artifacts*¹¹

Smith and Elley (1997), when considering preschool literacy development, describe access and mediation as Vygotskian concepts that essentially support learning. They define access and mediation in the following way: “Access means having suitable materials in the environment which will allow the child to develop concepts that literacy requires. Mediation refers to having someone who is a more skilled person to lead the reader through the material” (p. 9). Mediation is, more broadly, the introduction of auxiliary devices or objects into activities that enable links between human activity and intellectual thinking (Cole, 2005; Daniels, 2005).

It is the mediating aspect of artifacts and tools that provide relevance to learning (Cole, 2005). Vygotsky emphasised that symbolic tools, or signs, are a critical link between social and psychological planes of functioning (1978). Sociocultural theory discusses the critical role of tools, artifacts, resources and the environment as mediation, mediated

¹¹ Two spellings (artifact and artefact) are variously used in literature and appear to be used with the same meaning. In this thesis, *artifact* is used.

activity and mediational means (Bakhurst, 1995; Vygotsky, 1978; Wertsch, 1991; Wertsch, Tulviste, & Hagstrom, 1993).

Tools for learning include resources, scaffolds and collaborations. In numerous sources, both Vygotsky and Piaget discussed the most important human tool: language. Semiotic tools such as language influence culture; symbolic tools also enable, mediate and shape mathematical thinking (Sfard & McClain, 2002).

A refinement of Wartofsky's mediating artifacts hierarchy (Engeström, 2000; Engeström, Miettinen & Punamaki, 1999) identifies four classes of artifact: what, how, why and where-to. Books and computers are particular literacy artifacts that cannot only provide a means of achievement (*what*) and contribute to understanding *how* to achieve, but can also motivate achievement (*why*) and motivate evolution (*where-to*). Consideration of literacy artifacts, particularly books and computers, will be considered within this study on precocious readers.

2.4.6 *Critical contexts*

This section considers social support from parents, teachers and peers and within the contexts of home, early childhood, and beginning school. These contexts reflect Hamer and Adams' (2003) sociocultural model of literacy learning, which refers to four environments: a) home and family, b) early childhood centres, c) schools, and d) other community settings. In the Hamer and Adams model, children connect with each of the four contexts, within an overall notion of community (and the child's place in it) and the broader influence of society (and contextual influences). The major "other" settings discussed within this study are libraries and community examples of environmental print; however, because they relate to literacy, these aspects are discussed in chapter 5.

School, home, early childhood and community contexts are all critically important in the young child's life experience. Within each context, the child will interact with the environment and experience social relationships. It is appropriate that research from contextual and cognitive perspectives consider the "interaction of innate and experiential

factors” (Papalia, Olds & Feldman, 2004, p. 31) across many contexts. I have deliberately chosen a multi-site and multi-participant approach within this study in order to be able to discuss key contexts for precocious readers.

Literacy acquisition is an example of learning with a clear connection to environment and social experience. McNaughton (1995) affirms, “Literacy activities are embedded in family practices [and] . . . part of the fabric of everyday life” (p. 64). However, the environment itself cannot create a reader; it is the way that parents involve their children in literacy experiences that is fundamentally important (Bus & van IJzendoorn, 1995; Sulzby & Teale, 1991). As it is with other self-regulated learners, the literacy engagement of precocious readers is notably self-directed.

Although the child is affected by environmental factors, it is important to remember that the child also has an effect *on* the environment. Stanovich (1986) refers to “active and evocative organism-environment correlations” (p. 382), explaining that children who become better readers actively influence the environment in order to enhance opportunities for further reading. Interestingly, the number of social and instructional environments a child is involved with tends to increase “at about the same time that they become capable of being *in control* of themselves rather than *controlled* by the stimulus properties of the social/instructional environment” (Rohrkemper, 1989, p. 153). This study will consider to what extent, despite their young age, the interests and abilities of precocious readers guide learning.

Rogoff (1990) used the term “appropriation” to describe the process of learning from social context. She argues that individuals change through involvement in activity and also acknowledges that learners also affect their environment. Learners shape the understandings derived from any experience and also drive choice. In other words, children (and any learners) are not merely passive recipients of experiences given to them; individuals make choices that shape their own destinies. Rogoff (1990) asserts:

This book is built on the premise that the child and the social world are mutually involved to an extent that precludes regarding them as independently definable. Even when we focus attention separately on the roles of the individual and of the social milieu, these roles are

defined in terms that take each other into account ... development involves individual effort or tendencies as well as the sociocultural context in which the individual is embedded and has been since before conception. Biology and culture are not alternative influences but inseparable aspects of a system within which individuals develop. (p. 28)

Rogoff's perspective pertinently applies to precocious readers, and this study will consider the ability of these learners to drive choice.

All families are individual, and generalisations may not always be useful. Although families with precocious readers may have some frequently occurring traits, the existence of these traits will never assure precocious reading ability in a child. Given this caution, there do appear to be some commonalities. Parents in Clark's (1982) study of young fluent readers tended to be avid readers: A few of the parents had been early readers themselves. The age of the mothers on birth of the fluent readers was higher than normal. Mothers were cited as helping their child with reading twice as often as fathers were, and mothers tended to be "stay-at-home mothers [who] found absorption in their family a satisfying role" (Clark, 1982, p. 93). Re-examination of these latter factors will be useful, given that this research is almost twenty years later, and in a different country.

In Brenna's (1995) research, the home environment of early readers was acknowledged as critically important. Homes of early readers

while ranging on a socio-economic spectrum, were child-centred, rich in children's books and games, with caregivers who spent time talking with, and structuring learning experiences for, their children. Patterns which appeared in the home environments of these children are listed as follows: significant adults who valued reading; continual exposure to new books; collection of children's books which had been read often; caregivers surprised by child's early reading ability; caregivers who stressed independent problem-solving. (p. 56)

Sulzby and Teale (1991) suggest that research has

swung away from the use of proxy variables like SES to focus on actual home activities. Thus the trend has been to look more at what families *do* with children that promotes literacy development than at who the families *are*. (p. 743)

Of course, socio-economic factors mean that not all families have the same choices and opportunities. The effects of genetics and environment become tangled as parents work

toward creating positive environments for learning and thinking. Characteristics associated with reading practices in the home, according to DeBaryshe (1995), include social class, literacy skills and parental belief systems.

Although Morelock and Feldman (1997) and Durkin (1966) suggested that families of able children were more committed, expressive and supportive than regular families, an alternative perspective suggests that precocious readers are simply leading their parents along at a faster pace (Jackson, 1992; Jackson & Roller, 1993). It does appear clear that the children's abilities and interests shape the behaviour of parents as much as parents lead their children (Henderson, Jackson & Mukamal, 1993; Jackson & Roller, 1993).

The parent is the most important person in a young child's life and the child's first teacher (Oldfather & Wigfield, 1997; Weiss, 1985). Precocious readers typically have parents who have interacted positively with them and supported their literacy development (Jackson & Roller, 1993). However, many parents provide the same kinds of support, but do not have children with exceptional abilities (Jackson & Klein, 1997). Thus, environment and support are necessary but not causal.

The role of parents is also critical beyond the home learning environments. Parents have important roles to play with regard to transition to school or early childhood and supporting their child's progress in these contexts (Neuman & Roskos, 1993). As noted earlier, the early childhood curriculum *Te Whāriki* and the government's strategic plan for early childhood education have a strong commitment to partnership with parents. Anning (2004) refers to "the co-construction of a shared knowledge and discourse about the education of young children" (p. 77). Mony (2004), in turn, reminds that it is us of the imperative that early childhood teachers maintain "an attitude of total listening" (p. 122). This study of precocious readers will discuss parents' roles and liaison between parents and teachers.

Active learning and engagement with the environment are important components of contemporary early childhood education. *Te Whāriki* (Ministry of Education, 1996a)

supports a socially constructed perspective on learning (Cullen, 1998). *Te Whāriki* states, "This curriculum emphasises the critical role of socially and culturally mediated learning and reciprocal and responsive relationships for children with people, places and things" (p. 9). Pramling (1990, 1996) affirmed the notion of active engagement, noting that children see learning as "doing." However, even with a philosophical commitment to active, independent learning, higher-level cognitive and academic needs of precocious learners are rarely met, according to Jackson, Donaldson, and Cleland (1988). Families play a particularly important role in supporting this area of need. Alexander, Entwisle, Cardigan and Pallas (1987) refer to parent regulation and transfer of behaviours as "the hidden curriculum".

School is, obviously, another critical context to consider with reference to the autonomous, internalised learning experiences of young children. Cognitive and emotional needs of students have been systematically and comprehensively connected with characteristics of classroom contexts (Guthrie & Alao, 1997). In positive learning situations, students and teachers both come to believe in self-regulated or student-supported learning, providing students with increasing responsibility for their learning (McCombs, 1997). Thus, the teacher's role ideally changes from controller to co-creator and resource.

Several New Zealand researchers have considered the effect of continuities and discontinuities on transition between early childhood and school (Cullen, 1991, 1998; Dalli, 1999, 2000, 2001; Foote & Hurst, 2000; Ledger, Smith, & Rich, 1998; Margetts, 1997; Peters, 1999a, 1999b, 2000). Although there are differences between settings and sectors, children's resilience is also highlighted positively in recent research. Margaret Carr has described children who can successfully operate in multiple settings as 'bi-mondial' and 'trimondial' (1998d).

The child who spends time in a quality early childhood setting away from home is operating in two worlds, is a 'bi-mondial' child: like a bilingual, who understands two languages, the bi-mondial child is one who can operate in two worlds, and has many advantages because of that. By the time children are at school, they are (at least) tri-mondial: they can figure out the rules and relationships, and the roles associated with being a school child. They have learned the

ropes in several places, and are coming to understand the activities in each place as well. They can make connections across from one place to another, just as a bilingual child can make connections from one language to the other. (Carr, 1998d, p. 21)

The New Zealand literature considers the increasing pressure on early childhood to justify their contribution to “educational development” (Peters, 1999a) and “readiness for school” (Education Review Office, 1997). The *Competent Children* studies (Wylie et al., 1996; Wylie & Thompson, 1998; Wylie, Thompson, & Lythe, 1999, 2001, Wylie, 2004) discussed the lasting effect of quality early childhood experiences on later school achievement. Cullen (2001a) stated, at a conference for early childhood teachers,

I would like to see early childhood educators stand tall and responding ‘Yes, we *do* prepare children for later literacy achievements at school. We help build on children’s foundational learning in homes and communities; we provide literacy programmes that are based on children’s meanings and embed skills within these. AND these are the strategies we use, and these are the skills we are teaching . . . (p. 9)

In Clark’s (1982) study of young able readers, few parents had advised schools of their child’s reading ability. Parents were initially embarrassed to report special abilities, but also “the rebuff which some met when they did seem matters of concern” (p. 55). Clark (1982) suggests that parent “diffidence at the thought of contacting the school uninvited” was due to fear that it would appear that they were asking for exceptional treatment, and a perhaps realistic appreciation of the limits of the teachers’ time (p. 67). The *Tracking Talent* research currently in progress from Dunedin College of Education [A. Allen, personal communication, October, 2005] suggests that there are still opportunities to improve the transition experience for children.

2.6 Summary

This chapter has reviewed a wide range of literature, including theoretical perspectives on literacy acquisition and wider learning processes. Both contextual and cognitive perspectives contribute to our understanding of learning. My research position is grounded in the belief that both cognitive and contextual influences must be considered.

Literature of relevance to this study has included research from the fields of both early childhood education and educational psychology. Educational psychology research has focused on quantitative experimental research, providing detail of such aspects of learning as self-regulative skills, language abilities and reading strategies. Much of the educational psychology research has included attention to reliability, for example the studies of precocious readers by Jackson and colleagues (Jackson & Biemiller, 1985; Jackson, Donaldson, & Cleland, 1988; Jackson, Donaldson, & Mills, 1993; Jackson & Kearney, 2005; Jackson & Lu, 1992; Mills & Jackson, 1990). However, the quest for reliability has meant that few of these studies claim to understand the personal experience of being a learner. Contextual factors are sometimes acknowledged, and sometimes used to explain threats to reliability, but rarely form the primary focus in educational psychology studies. Furthermore, research findings conducted within experimental contexts are not necessarily applicable in “real” contexts.

Educational psychology literature has indicated that individual factors, including individual skills, abilities and potential, are a fundamental dimension of children’s learning. This means that, while adults, and peers, play an important role in supporting children’s learning, children’s abilities and competencies cannot be fully accounted for by considering adults contributions. My study maintains a focus on the children as learners to avoid “adultocentrism” (Litowitz, 1993). Self-scaffolding, linked to metacognition, is one process through which individual learning is extended. This involves deliberate awareness and reflection from the learner (Marton & Booth, 1996). Where learning is not externally scaffolded, or self-scaffolded, explanations for learning involve induction or spontaneous learning. My research questions (see section 1.4.2) hypothesised that spontaneous learning was a source of learning that warranted further exploration and research.

Early childhood education by contrast (for example Carr, 1998a, 1998b; May & Podmore, 2000), has embraced qualitative research approaches because of the acknowledgement of contextual perspectives, diversity, personal experiences and voices, ethics and the rejection of positivism (for example ideas of what might be ‘right’

or 'correct'). Many New Zealand studies have included an emphasis on communities of learning, contribution and social responsibility. Research on literacy in early childhood has often focused on the environment and social context which can support language and early literacy development (Hamer & Adams, 2000; Roskos & Christie, 2000). However, there are too few early years studies that include measures of individual competence, achievement and skills in the early years.

Research studies in gifted education contribute important data about individual abilities and performance and have the potential to inform advocacy and practice. Contextual factors, for example the "tall poppy syndrome" can serve to limit potential achievement. Therefore, it is important that research includes consideration of authentic approaches which capture *potential* as well as performance. This study of precocious readers combines individual and ecological factors, acknowledging the importance of social support, self-regulation and spontaneous learning. In addition, this study adds to the available literature through its focus on young children, the least considered within gifted education literature and practice.

It has been important to fully discuss all of the various aspects of teaching-and-learning to clarify which aspects of learning might be scaffolded externally, which might be self-scaffolded, and which could potentially be spontaneously acquired. Although learning cannot always be attributed to environmental and social factors, the literature indicates that these factors are clearly fundamental. In this chapter, the important scaffolding and co-constructive role of adults and peers, artifacts and key contexts of home, early childhood and school have all been discussed and are acknowledged throughout this study. This study of precocious readers draws on educational psychology literature, but contributes a contextual early years focus to understanding of precocious reading, previous studies of which have been predominantly psychological.

Key points from the literature are summarised below as propositions; these propositions influence my research and the remaining chapters in this thesis, in relation to children's

literacy skills, how they were taught, and how they approach learning, and in terms of expectations that adults have for children.

- Proposition 1: learning occurs in a social context, influenced by relationships, interactions *and* individual construction.
- Proposition 2: The interactive nature of learning must acknowledge the learner as an agent and source, not just a recipient (being of influence as well as influenced).
- Proposition 3: social support and environment are necessary factors, but not sufficient to “create” learning.
- Proposition 4: power relations are inherently unequal in co-consturction. If they are to be minimised, adultocentrism must be acknowledged and minimised.
- Proposition 5: Learners are able to self-scaffold their own learning within their zone of proximal (potential) development.
- Proposition 6: Induction and spontaneous learning describe learning that occurs without clear social scaffolding or co-construction and without deliberate self-scaffolding.

CHAPTER THREE

RESEARCH PARTICIPANTS

We ended up deciding we had to look at the whole of Henry – reading and giftedness is not as important as being supported, making friends, in a nurturing, caring place. He can become a vulcanologist or surgeon – (but) if he's not happy then it's a waste of time. (H: Parent interview, D10)

The key participants in this chapter and study are the children; however, family, early childhood and school settings are the key research contexts (see Figure 6). As the parents acknowledge in the above quote, social support and the environment have a key impact on children's well-being, which in turn is tied to the ability of children to reach their individual potential. The case studies provide opportunities to consider the individual and ecological factors influencing learning, as introduced in chapter 2.



Figure 6. Participant self-portrait.

The chapter has three purposes: firstly, to describe the processes of recruitment and selection, secondly, to position the children as central to the thesis, highlighting individuality and heterogeneity and, finally, to describe ecological contexts of key importance for the children. Although participants are described, this is not a 'results' chapter. Information regarding children's reading abilities, socialisation, expectations and other aspects of teaching and learning are included in subsequent chapters.

In this chapter, 11 children and their families, 10 early childhood centres and four schools will be introduced. The information is drawn from semi-structured parent interviews, informal teacher interviews, school and centre visits. Pseudonyms have been used throughout, based on the chronological order of entry to the research project. When quotes are used from the data, a tracking code is noted, except where this would compromise anonymity. "H: Parent interview, D10", for example, refers to case study H (Henry), and reply to section D, question 10 of the parent interview schedule. Other interview data includes "ECE teacher interview" and "School teacher interview". Observations at early childhood centres and schools are recorded as "ECE1" or "School1" for the first visits, and "ECE2" and "School2" for second visits. An additional source of data is referred to as "Field Notes".

In the tradition of Rousseau, nature has been used as the theme to name early childhood centres (for example, Lakeside Kindergarten). Schools have the names of women from famous Māori stories (Hinemoa, Mahuika, Papatuanuku and Rona). Where there are risks to confidentiality, I have changed the names again to that of New Zealand trees (Kowhai, Pohutukawa, Rimu and Totara) or nature themes (for example, Hilltop School).

The first section of this chapter describes the processes involved in finding, recruiting, selecting and initially assessing precociously reading children. Brief descriptions of each of the participating children follow. In the third section, the children's families are described, including demographic factors such as age and family size. The 10 early childhood centres are grouped and discussed within three categories of service:

kindergartens, private preschools, and Montessori preschools. Finally, because four children were “followed” as they transitioned to school, the four schools involved are described.

3.1 Recruitment and Selection

A major task at the beginning of the research fieldwork phase was to find children who were precocious readers. I was confident that the combination of personal contacts and use of fliers would lead to nominations but, if necessary, I was prepared to travel. Having received nominations was no guarantee of the children’s reading level; it was important to include a measure of reading ability early in the research. It was also ethically important to ensure participants knew they could exit at any time they wished.

3.1.1 Recruitment of children and families

Recruitment of precocious readers was made through two main approaches. Firstly, fliers (see *Appendix A*) and information sheets (see *Appendix B*) were mailed to individual centres, early childhood associations¹² and public libraries. The use of fliers in early childhood centres and libraries had been an effective approach for Stainthorp and Hughes (1998). Secondly, personal approaches were made to early childhood centres, fliers and information sheets being directly provided, and by contact through personal networks. A third form of contact resulted from a local newspaper article about my study. This resulted in several people contacting me directly with questions, although no children were accepted into the study from the article contacts.

Recruitent fliers and information sheets were mailed to public libraries and community branch libraries and Montessori preschools, with multiple copies sent to two kindergarten associations, one playcentre¹³ association and two home-based care organisations¹⁴ (one of which also had a nanny service) as part of the recruitment process.. Telephone contact was made with the kindergarten and playcentre

¹² Associations included two kindergarten associations and one playcentre association. The association had between 15 and 45 individual centres, regionally grouped and within a larger national organization.

¹³ Playcentres are a parent-led cooperative, with a focus on families learning together. Sessions generally have group licensing, with sessions run by groups of parents who have completed playcentre training.

¹⁴ At the time, home-based care was referred to as “family daycare”.

associations, home-based early childhood education co-ordinators and one of the Montessori centres prior to the posting of recruitment material. Liaison with associations was partly to provide individual centres with the confidence that their association approved of the study. Distribution through associations was also financially efficient for me; one association distributed papers to their 49 kindergartens, for example.

The second recruitment approach used was to personally approach 13 individual early childhood centres, through visits or telephone calls, and informally liaise with early childhood teachers through personal networks to further seek potential research participants. For example, teachers from two “private preschools” stated that they were happy to display the information sheets and fliers, and also specifically sent information home to several families that they identified as potential participants. In all circumstances, potential participants were provided with the information sheet and verbal explanation of the project.

Diversity of children, families and early childhood centres was sought by the targeting of fliers at centres with varying backgrounds. Recruitment was within the greater Wellington area of New Zealand, and included a range of socio-economic regions. It was hoped that both gender and a range of socio-economic backgrounds and ethnicities would be represented amongst the participants. However, selection was based solely on reading ability.

The various recruitment strategies meant that project information was circulated to organisations supporting around 3500 3- and 4-year-olds. A summary of the recruitment approaches is provided in *Appendix C*, showing the extent of contacts and strategies that successfully led to recruitment. The approaches were not as neat the graphic may imply, however. For example, a playcentre contact recommended a family whom they knew, not knowing that were already involved in my study through an alternative recruitment source. Other children whose parents first read about the research in a flyer at a library also attended early childhood centres that I had contacted.

The recruitment procedures led to parents, or sometimes early childhood teachers, contacting me at home by telephone or e-mail. I explained to parents that during the first research session I would be testing the child on a standardised reading measure. Although I would try to make the child feel as comfortable as possible, I did not think it fair to formally test reading unless their child was already a confident and independent reader. This gave an exit opportunity for the (occasional) family who may not fit the criteria for example, a mother who then explained that her daughter wasn't reading, but would probably pick up reading quickly if my research involved teaching her. Following the initial telephone conversations with parents, information sheets and permission forms (see *Appendix D*) were posted to families, with self-addressed stamped envelopes. Initial visit times were arranged by telephone or email. Occasionally, families and teachers gave verbal permission for me to work with the children and had the permission forms signed and ready for me at the first visit.

3.1.2 Selection

In addition to written parent permission, there were two criteria for entry to the study. Firstly, children needed to be aged 4:10¹⁵ or less at time of entry to the study. Secondly, they needed to be able to attain a reading age of *at least* 6:0 years on the *Neale Analysis of Reading* (Neale, 1999) using either form A or B. Some reading research projects have included comprehension criteria in order to eliminate children who read without understanding (for example hyperlexic readers or idiot savants). Children with these traits would still have been included in my study if they had met the age and reading age criteria.

From the 3500 3- and 4-year old children associated with organisations contacted, fifteen children were nominated and tested with a reading assessment. All of the 15 children were aged 4 and could read beyond a 6-year ability level, but only 11 were recruited into the main study: those that were reading beyond a 7-year ability level.

¹⁵ The convention 4:10 refers to 4 years, 10 months. 4:05 Refers to 4 years, 5 months; 4.5 refers to 4 ½.

3.1.3 *Recruitment of early childhood centres and schools*

Once children had been successfully recruited and initially assessed, parents were asked for permission for me to approach early childhood centres and schools. Parents gave suggestions of who to contact and the most helpful times at each early childhood centre. All of the early childhood centres were provided with information letters and permission forms (see *Appendix B* and *Appendix D*). The early childhood centres for all of the children involved in the study agreed to participate, signing permission forms, although if they had declined I would still have worked with the children in home settings.

The final phase of the study involved following four of the children to school. Four children were chosen who began school at the same time: two girls and two boys, two at private schools and two at state or state-integrated schools. The four families invited to participate in the transition-to-school phase all agreed to continue to work with me, and signed supplementary parent consent forms (see *Appendix D*). All of the four schools approached agreed to participate. I contacted schools more formally than I did for the early childhood sector, writing to the principals or syndicate leaders with school permission forms (see *Appendix D*) and a revised information letter (see *Appendix B*). This approach was less successful, with mail and faxes often being lost and ignored. When parents spoke directly to teachers to introduce the research, my access was more easily negotiated. All class teachers signed permission forms, sometimes supported by school management. I provided teachers with a letter to class parents, describing my role in their child's classroom (see *Appendix B*), but left the class teacher to decide if he or she would distribute this or not.

3.1.4 *The first meetings*

The first visit involved dual objectives of assessment screening and rapport building. I believed that a complete stranger thrusting a formal test at a 4-year-old was unlikely to ensure a keen participant for the duration of the study! Some of the initial activities involved

- sitting on the lounge floor and listening to the child read a book they had on loan from the public library

- visiting the back garden and admiring chalk drawings (prompted by a conversation about the blue marks on his face)
- looking at pet budgies and kittens
- playing 'peek a boo' with a child in a box and accepting her wish to do all her reading inside the box
- looking at catalogues of *Star Wars* Lego.

For all but two of the children the initial visits occurred at their homes. In the remaining two cases, the parents requested that I undertake the initial assessment at the child's early childhood centre, and the teachers agreed.

The first reading assessment involved the child reading from the *Neale Analysis of Reading* (see chapter 4, for an explanation of this instrument). Children were given the option of reading the practice passage to their parents if this made them feel more at ease; however, they nearly always chose to read only to me. Once the difficulty criterion was reached, or the child no longer wanted to read, they were given a sticker book and allowed to choose stickers. All children and parents were given positive feedback, and parents were told preliminary results. I let parents of 11 of the 15 families know that I would like to continue with further research assessments, and they all agreed to continue. The children were told that I would like to come back and visit again, and that I would bring different activities and stickers with me on each visit.

Once the children were accepted in and accepting of the research, subsequent research visits were arranged. The particular order varied, but for most children the second visit involved language and problem-solving assessment, with additional reading assessment scheduled for the third visit. A comprehensive semi-structured parent interview and two visits to early childhood centres followed, with informal interviews with parents and early childhood teachers occurring in the final stages for each case. With many of the families, there were additional telephone calls, e-mail, and letters. An example of the elements involved with a single case study is provided in *Appendix E*.

General feedback was provided at each visit, although an effort was made not to talk “over the top” of the children¹⁶. Usually on subsequent visits to families, I gave additional feedback, resulting from my analyses of information gained at the previous visit. As I completed the early childhood research phase for each child, I provided each family with a full portfolio of notes and data that I had gathered relating to their child. I discussed general observations of the children with teachers, but I did not disclose assessment results of family information unless requested to do so by the families. Some families asked me to give detailed feedback to teachers, which I did at their request. At the conclusion of my main data-gathering phase, I sent families and teachers a brief summary report (*see Appendix F*). I will also provide each family with a copy of my thesis.

3.2 Participating Children

Recruitment and selection processes resulted in the inclusion of 11 children in the study. This section aims to provide a very brief picture of the participating children, and a glimpse of their personalities. The children were all aged between 4:2 and 4:10 at the time they entered the study (see Table 1), and only two of the children knew each other before the research began. Further demographic information, including information on siblings and parents, can be found in the next section on children’s families. In this section, types of early childhood centre referred to only when integral to the story. The focus of this section is to highlight the children as a heterogeneous group of individuals.

3.2.1 Alistair: “It’s always been natural in our family”

Alistair’s mother asserted that early reading was a “natural” phenomenon. She was concerned that her son not be viewed as different from other children, considering that his social skills were as important as his academic achievement. As an example, she said she was delighted that he had been at his early childhood centre for 6 months before the teachers realised he could read: “The reason the [teachers] took so long was because he was busy doing boy things outside – which pleased me” (A: Parent interview, E6).

¹⁶ Couch & Firth (1999) warn against ‘tree top’ talk occurring over the heads of children.

Alistair's mother stated that key influences for Alistair were within their own nuclear family: he spent extensive time with his mother, his father was his "role model", and his older sister, Aimee, had "taught herself to read like Alistair" (A: Parent interview, A6).

Aimee is his major playmate – imaginary games, computer, art, drawing, making cards, his main companion. Alistair wants to share with Aimee – a contemporary in his mind despite the 4-year age gap. [His Dad] is his role model. Daddy is the epitome of what he hopes to be (big and strong), for example, they push the wheelbarrow together. If [his Dad] does something, then it holds a glamour. We spend a lot of time together – he's my baby, though can be irritating. Now he's getting cheeky – may be a sign he needs stimulation. We do a lot of cooking together – good for reading, maths, consequences. A lot of time reading. (A: Parent interview, B2)

Table 1

Overview of Participating Children.

Pseudonym	Age (entry to study)	Gender	Parent comments
Alistair	4:08	Boy	'It's always been natural in our family'.
David	4:02	Boy	'He has a way of analysing what the problem is'.
Erin	4:07	Girl	'She's an individual, wants to be left alone'.
Gillian	4:03	Girl	'Quite thoughtful'.
Henry	4:09	Boy	'A sensitive wee character'.
Isla	4:09	Girl	'A fiery determination'.
Julia	4:01	Girl	'I don't think she realises she's only 4'.
Lewis	4:08	Boy	'Help me in my studies, keep me safe in my play'.
Matthew	4:03	Boy	'He wants to know'.
Nathan	4:07	Boy	'If he shows an interest we'll try and feed it'.
Oscar	4:10	Boy	'I don't know if he likes the reading or he likes the learning'.

3.2.2 *David: "He has a way of analysing what the problem is"*

David's mother described a constant battle with children's organisations that had age-entry criteria. She described her usual initial difficulty, and often eventual success, in convincing people that David could academically and emotionally manage programmes assumed to be for older children. One example was with entry to an early childhood centre before the usual age of 3 years for that centre:

At first, the teachers thought he had a photographic memory, that he had memorised. So [his preschool teacher] tested him. They realised the kid was reading, so they proposed he move at a more advanced pace at preschool. (D: Parent interview, C12)

David's main passion was computers. His older sister was attending an after school computer extension class, and David's mother had difficulty convincing the coordinators that a 4-year old could cope with a formal learning programme for an hour. However, a trial was negotiated and the organisation subsequently allowed him to participate. When I met David, he talked animatedly about his achievements at the math-based computer class and spent a significant portion of his early childhood centre time on the computers. After he started school, he even told me that the reason he preferred preschool to school was that there were more computers at the preschool!

David's mother talked about his learning by stating:

He has a way of analysing what the problem is . . . probably putting a grown-up context onto it. He has the ability to think a problem through and think of a way to fix it. I never thought about it [before]. A very quick learner. It took him no time at all to pick up things like the computer. I bring laptops home from work and he gets through the passwords, I almost have to ask him how to do things. (D: Parent interview, B4)

See Figure 7 for David's self-portrait.



Figure 7. David's self-portrait.

3.2.3 Erin: *“She’s an individual, wants to be left alone”*

Erin had previously attended a free local early childhood centre. However, her grandmother had offered to pay the fees for her to attend a fee-paying early childhood centre as the family felt this would give her needed extension as an early reader: “I don’t know what we would have done otherwise” (E: Parent interview, p. 9). Erin’s mother described her daughter as solitary. When she was asked what activities Erin did with her family, Erin’s mother stated:

Nothing in particular – she’s an individual, wants to be left alone. She’s learning to play the piano, trying to get her started. She shut me off – very much an individual. (E: Parent interview, B2)

Erin’s interest in reading was something that other members of her immediate family did not share with her. She was possibly the only child whose parents were not enthusiastic readers themselves:

She loves reading. She’s continually got her nose in a book. Not so much now, but when she was younger she would disappear in her room, constantly with her nose in a book. (E: Parent interview, E1)

[She reads] Books about dinosaurs, books that she can learn new things from, a book about wetas and possums. She’s got too many books. She loves to read on her own, goes to her room. So I haven’t paid much attention to what she’s reading. (Parent interview)

3.2.4 Gillian: *“Quite thoughtful”*

Gillian’s mother looked for ways that her daughter was “typical” of her age group: “fairly stable ... a normal 4-year-old ... fairly easy-going” (G: Parent interview, B3). Gillian had frequent contact with extended family. She described some of the ‘normal 4-year-old’ activities that Gillian, her mother and grandmother enjoyed together:

The zoo, Lollipops (playland), the park, Toyworld. If we’re going shopping we make sure there’s time to go into a shop she likes. Playing on the swings, [City] Park, [Beach] Park. She loves the trains at [City and Beach Parks]. (G: Parent interview, B2)

See Figure 8 for Gillian’s self-portrait.

When I asked Gillian’s mother if she had noticed any special abilities or talents, she highlighted Gillian’s considerate personality. Another anecdote illustrates how clearly Gillian’s mother understood her daughter’s learning style and personality:

I find her quite a considerate little person – quite thoughtful. She said, “Mummy, what would *you* like to do for your birthday? Where would you like to go?” (Parent interview)

A great mimicker – will copy things she’s seen others do. A great watcher in a new environment. She will watch, and look around the whole place, sussing around and stay near Mum until comfortable. People comment that she’s reserved and shy – I don’t think she is, just took a while to sort out in her mind what it was like (G: Parent interview, B4).



Figure 8. Gillian’s self-portrait.

3.2.5 Henry: “A sensitive wee character”

Henry had a wide range of practical interests, as his father described:

Playing with toy cars and trains. Climbing all over me. Bouncing on the trampoline with me. Drawing roads on the concrete with chalk. Helping me work on things in the garage – or getting in the way – playing card games, board games, correcting my spelling on the computer. (H: Parent interview, B2)

Henry had a best friend whom he spent a lot of time with. However, when not with this friend, Henry sometimes found relationships with other children to be difficult. His

parents described his character as sensitive, giving anecdotes of television programmes or advertisements and books that he had been frightened of. One of the stories that I brought when visiting had a picture of a dragon, which subsequently worried him, and he refused to read from that book again on my later visits. His parents noted:

His sensitive character. Not strong when it comes to this. If another child teases him he crumbles. Some social things to overcome with his peers. (H: Parent interview, B9)

How sensitive he is – a sensitive wee character who cries about disappointment quite easily – big on the tears readily. A sensitive person. (H: Parent interview, G1).

Henry's reading ability of over 11 years age-equivalent, and scores on a range of cognitive assessments within the top 3% of the population, exposed him to different situations from those other children of his age experienced. A vivid example of this was when the family visited hospital with the new baby for a checkup. Henry read some information on the wall about cot death, and for a long time afterward worried about his baby brother dying of cot death.

3.2.6 *Isla: "A fiery determination"*

Isla was described as "very, very sensitive – almost hyper sensitive" (I: Parent interview, B3), with a fiery determination. She was also described as creative and it was noted that she "adores anything to do with animals" (I: Parent interview, A5):

She is very impatient and intolerant. If there's any difficulty, she'll throw up her hands in horror. For example, with cutting out – the number of times the scissors were fired across the room because she couldn't do it. She says 'I can't do that!' and the scissors were fired. I walked out of the room, knowing if I was in the room she wouldn't do it. But yesterday the new librarian had the gingerbread man activity [and Isla cut out the gingerbread man beautifully for her then] She's very strong-willed, determined, stubborn, and a baiter . . . I tell him not to let her know she's rattled him. She's very quick to perceive a chink in any armour, a tease. She's sensitive and can't take teasing . . . If she's bored in any way you'll get nonsense, hi jinks. (I: Parent interview, B4)

[She's] proving to be very methodical – 'you have to do this and this and this'. On her own she's organised and wants to lead - 'I'll be the teacher.' She tells them what to do, takes charge forcefully. (I: Parent interview, B7)

3.2.7 *Julia: "I don't think she realises she's only 4"*

Julia's mother highlighted a self-set determination of Julia's to extend her own learning. She observed older children, noted their skills, and determinedly tried to emulate their achievements. When she was aged 2, the family visited friends who had a 4-year-old

and Julia copied the older child's knowledge of alphabet and nursery rhymes repeatedly until she too had mastered them (reference). When asked to suggest a motivation for Julia's completion of tasks, her mother stated:

I think she has to do it, she has to get it done. For example, we went to the library. A boy of 6 or 7 was looking at numbers on a chart. She brought it home and said, 'Teach me the numbers' – she got it in 2 or 3 days. At preschool she is with children aged 3 to 6. She wants to do anything they can – I don't think she realises she's only 4. (J: Parent interview, B5)

The way that Julia enjoyed learning, and the way that both parents enjoyed spending time with their daughters was described by Julia's mother:

If she talks about something from [early childhood centre] we talk, look in books, look on the Internet – a learning experience for us too; we've forgotten what we did in school. She enjoys books with witches and fairies now. I read stories to her about that. She enjoys story writing – she saw other children doing this when she started school and wanted to do that too. She has gotten a lot better with spelling. Generally, whatever she talks about we read about it and talk to her about it. And she enjoys reading chapter books – thinks she's very big. 'I can read a chapter book' – likes to say that. Generally getting the books she enjoys – fairies, witches, funny stories. When 3 ½ I don't think she saw the humour – now she does. Now in [early childhood centre] they have short plays and so now in reading when she comes across short quotes she knows she has to change her voice. (J: Parent interview, D1)

3.2.8 Lewis: *'Help me in my studies, keep me safe in my play'*

Lewis's parents said that Lewis had a friend about 3 years older who lived nearby, and they enjoyed riding bikes and scooters, playing on the trampoline, water play and other outdoor play. His parents also enjoyed spending time with Lewis themselves - playing with him - and enjoying telling stories each night. They said that they "coached" him on reading and writing, but this appears to have been responsively rather than in the directive teacher interpretation of the word "coach". Lewis reportedly would ask to work on literacy activities, saying, "Mummy, I want to write, I want to read". On the other hand, Lewis's father repeatedly reminded him that if he didn't work hard he might end up "on the streets". These comments may have been a reflection of their cultural values. Prayers reinforced and reflected family values.

One thing that's good is he prays every night, "Help me in my studies, keep me safe in my play" – he's a good boy, he really believes in prayer. (L: Parent interview, D11)

He wants to be a pilot, so I said 'If you want to be a pilot you have to know the world so because he wants to be a pilot he knows how to read maps, knows continents, what's about. It depends on his interest, the more he knows. He likes *Bob the Builder*, so knows parts of the house. (L: Parent interview, A5)

3.2.9 *Matthew: "He wants to know"*

Although both parents worked full-time, his mother's work days varied across weekdays and weekends. Matthew attended early childhood education sessions three full days and two additional mornings per week. A nanny cared for Matthew and his sister at their home after school and on the two remaining afternoons.

Matthew's mother described his self-generated interest in learning. She attributed his motivation to a combination of family values and his own personality. Like Gillian's mother, Matthew's mother appreciated her child's considerate nature:

He's ... a little bit more – I don't want to say intellectual, but he wants to know – what 12 and 18 add up to, and 65 and 66, and 110 plus 200. He wants to know the meaning of different words I or [his father] have used – he would ask 'what did you say? – I didn't understand.' – not switch off, which I think is probably remarkable – curiosity maybe. He's a lot more mature than other children of his age. He's a bit more understanding – I suppose that goes with increased maturity. He's considerate – for example if I'm on the 'phone he will wait until I've finished and then he'll start talking – generally kids his age would say 'Mum'. (M: Parent interview, B7)

Just his determination. He is strong-willed. I guess we [also influenced him] – from the time they were little – we've already said you can't leave it half completed, it's become habitual. For example, if they were eating an apple they can't change and eat a mandarin. It's the same philosophy. (M: Parent interview, B5)

3.2.10 *Nathan: "If he shows an interest we'll try and feed it"*

Nathan was an only child living with his mother and father, and his parents attributed some of his personality to his being an only child:

Mother: [He's] A sensitive child, eh.

Father: Yes, very sensitive.

Mother: Content.

Father: Not physical or boisterous.

Mother: But then he has no siblings to do that with. (N: Parent interview, B3)

Nathan attended the local kindergarten 5 mornings per week. Nathan and his mother also had a regular day with his paternal grandparents. When Nathan's parents were asked to describe some of the activities that he enjoyed, they invited Nathan to contribute to the discussion:

Mother: Oh, anything. Love going on trips like on a train. Visiting favourite shops. Having lunch. As long as he knows what the game plan is he goes along.

(Nathan's parents then asked him what his favourite shops were.)

- Nathan: Lots of them. Toyworld, The Warehouse, Tiddypom, the new Toyworld, Edex, lots of the toyshops. McDonalds, that's my favourite.
 Mother: Starbucks.
 Nathan: Yep [but] not all the time. (N: Parent interview, B2)

3.2.11 Oscar: "I don't know if he likes the reading or he likes the learning"

Oscar enjoyed playing with friends, although there were sometimes differences between activities that Oscar enjoyed and those that his friends were interested in:

He loves to read the weather. He's very interested in the weather. He had friends over – he broke off to come and watch the weather [on TV], then ran back to tell them, but they're not interested. Weather channel on Sky. (O: Parent interview, E8)

See Figure 9 for Oscar's self-portrait.

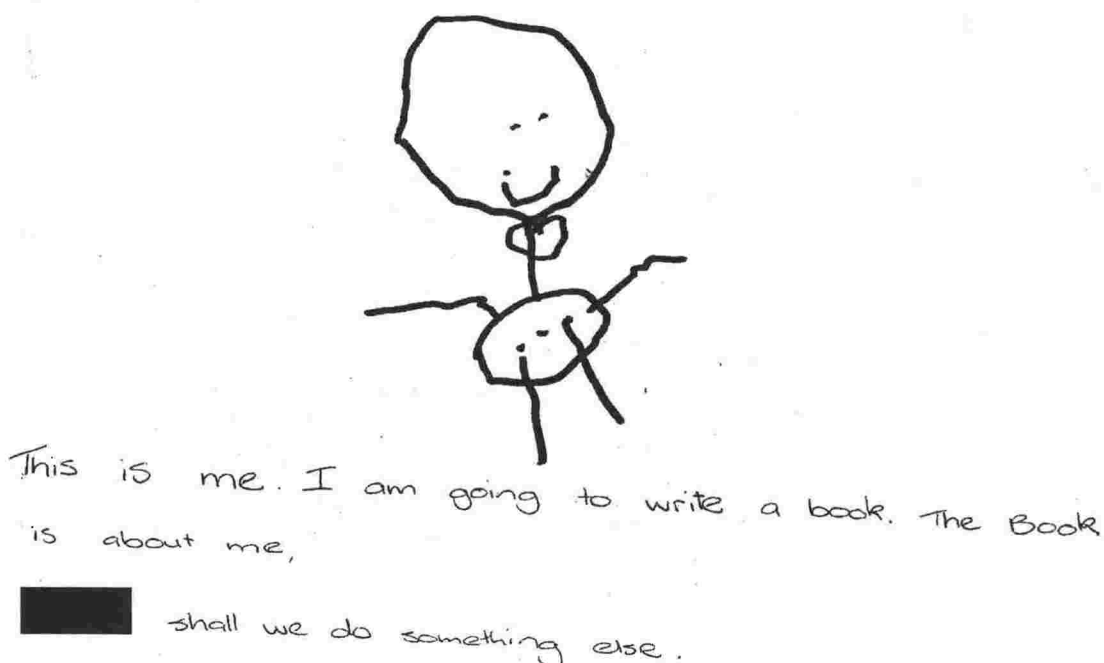


Figure 9. Oscar's self portrait.

Oscar's parents described him as sensitive and inquisitive. His father noted that Oscar was able to teach and correct his father with difficult Latin dinosaur names. He reflected, "I don't know if he likes the reading or likes the learning" (O: Parent interview, G2). Like David, Oscar also loved working on the computer. He spoke with

an unusual accent that his parents hypothesised could be his derivation of the predominantly American CD Roms:

- Father: Very inquisitive, trial and error. We haven't really tried to teach him anything. He'll try to teach himself –
- Mother: Like on the computer ... he loves to explore it.
- Father: There's not many things we've tried to teach him – it's frustrating and amazing.
- Mother? Apart from eating veges, and that was a failure.
- Father? He teaches himself. Tend to think that's trial and error. [We think] how the hell did you learn that – (I) haven't taught it. (O: Parent interview, B4)

3.2.12 Summary of participating children

Each of the 11 children is an individual with unique strengths and interests. Although the children were all 4 years old, their ages varied between 4:01 and 4:10. They shared an ability to read competently at an early age but facilitated learning in diverse ways. In many ways, the children were like all children, enjoying play, humour, trips to the zoo, time with family and books. Some of the children had particular strengths, in inquiry, perseverance and levels of reading, which provided different experiences from those of many other children. Families surrounding each child and their support of their child's learning are the focus of the next section.

3.3 Participating Families

Bronfenbrenner's (1979) ecological theory describes the importance of families within the child's microsystem. Families are therefore critical elements of each case study (see Figure 10). Table 2 provides an overview of the children's parents and other key adults, home language and parent occupation. The order and gender of the siblings is also shown, with the child participating in the research shown in bold font. For example, the first child, at age 4 is the older of two children, with a younger sister aged 2, so the siblings are recorded as '**Girl = 4**, Girl = 2'. Similarly, bold is used to clarify the current form of early childhood education accessed by the children amongst all those mentioned by parents.

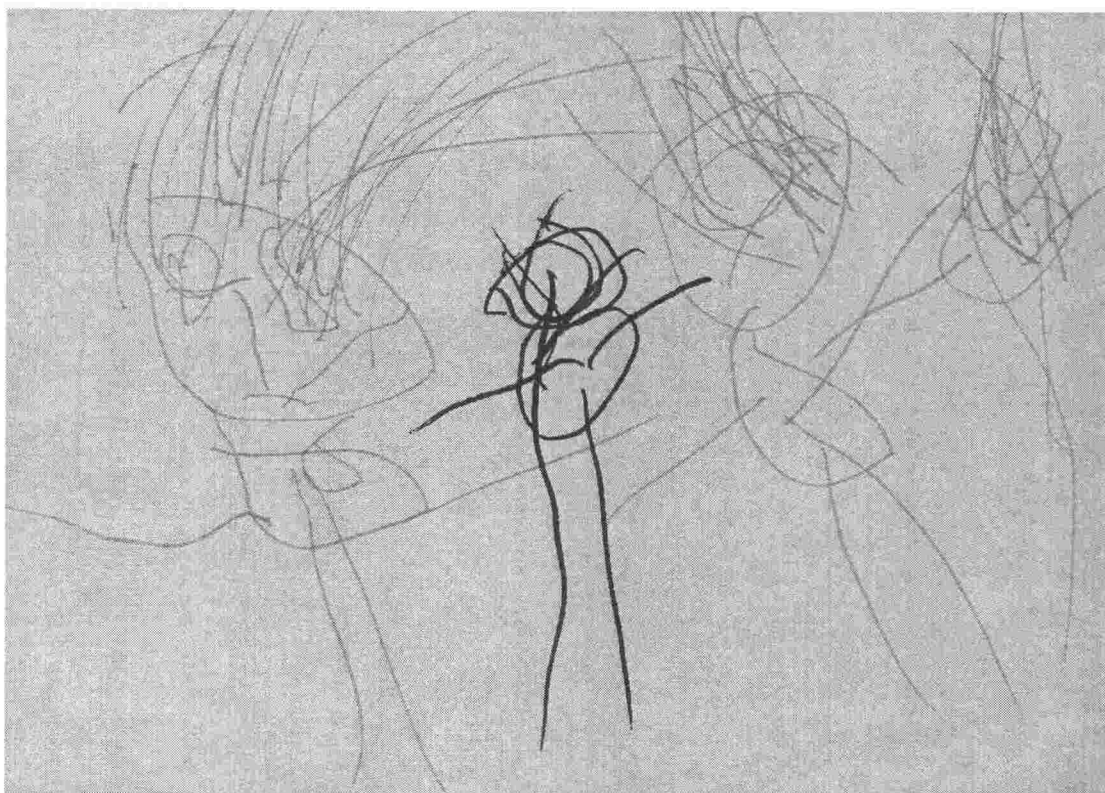


Figure 10. Family portrait.

3.3.1 Ages

All of the parents in my research, except one father and the grandparents, were aged between 29 and the early forties; the majority of mothers were in their early 30s and the majority of fathers in their late 30s at the time I interviewed them (see Table 2). In Clark's (1982) study, most women were aged in their late 20s or early 30s at the time of the child's birth, meaning that the mother's ages were similar to those in my own results, despite the 20-year gap between the research projects. Clark did not appear to have asked the ages of the fathers. The age of the siblings in my research was between infancy and 8 years of age, with the exception of one 17-year-old brother.

3.3.2 Family language and culture

Four of the 11 families identified with cultures other than Pakeha: Indian, Japanese and Phillipine were included. All except one of the families spoke English as their main language, although in four families parents were speakers of other languages (see Table

2). English was spoken at home with these families because it is the shared language of all family members. For example, in one family the parents were both from India, but each parent spoke a different Indian language, so English was their common language.

The family who did not speak English at home was from the Phillipines, and spoke Tagalo as their first language. The adults were able to speak English, so my interviews were able to be conducted in English. The child participating in my research had grown up speaking Tagalo only, and had only learnt English since attending a half-day early childhood centre from 3 years of age. When I met him, he was aged just over 4 ½ years old. My testing was conducted in English, and during the early childhood centre observations, I only heard him speaking in English.

3.3.3 Parents

The families participating in my research represented a traditional Western model of family structure; at the time of my research, 10 out of 11 families included a married mother and father both living in the family home (see Table 2). After completion of my data-gathering, I heard of one family divorce and the death of one of the parents in another family. It is important to acknowledge that family structures change over time. Family patterns are becoming more diverse; the families involved in my research do not fully represent the broad range of family structures in contemporary society (Adair & Dixon, 1998; Adams et al. 2000; Dau, 2001; Drewery & Bird, 2004).

3.3.4 Siblings

Siblings play an important role in the early learning of young children. Seven of the 11 children in my research were from families who had two children; three of the research children were the eldest of two children, and five of the research children were the younger of two children. Three research families had only one child at the time of the research, and no families had more than two children. Some of this data changed after the study was completed, with at least one family having had another baby.

Table 2
Participating Children and Families

Parents at home	Other key adults	Parent occupation (M = Mother, F = Father)	Parent age	Sibling order and age	Home language	Early childhood education accessed
Mother & father	-	M = at home parent/ distance student F = professional/ technical	M = 33 F = 36	Eldest of 2 Girl = 4, Girl = 2	English *	Ed & Care centre – Montessori
Mother & father	-	Both parents worked full time, Managerial/ administrative	M=35-45 range F = 57	Youngest of 3: Boy = 17, Girl = 6, Boy = 4	English	Ed & Care centre – private preschool
Mother & father	Regular time with Grandmother	M = at home parent F = business owner	M = 33 F = 37	Only child = 4 (boy born 1 yr later)	English	Ed & Care centre – private preschool
Mother & father	-	M = Part time retail/administrative F = Professional	M = 38 F = 43	Youngest of 2 Girl = 6, Boy = 4	English*	Playgroup then Ed & Care centre – Montessori and home-based care (nanny)
Mother & father	Grandmother	M = At home parent F = Manual work	M = 32 F = 34	Youngest of 2: Boy = 6, Girl = 4	English	Kindergarten, then private preschool
Mother & father	Time with grand-parents weekly	M = at home parent F = Managerial	M = 34 F = 42	Only child	English*	Kindergarten
Mother & father, then only mother	Holidays with grandparents	M = at home parent/ distance student F = Managerial	M = 33 F = 39	Youngest of 2: Girl = 8, Boy = 4	English	Ed & Care centre, then kindergarten
Grand-parents	Child lives with grandparents, aunt and parents visit	Not currently working. University/professional qualifications	Not stated	Only child = 4	Tagalo (<i>Philippines</i>)	Kindergarten, then a different kindergarten
Mother & father	Grandmother used to live with family	M = At home parent F = Professional	M = 40 F = 38	Eldest of 2 Boy = 4, Boy = <1	English	Ed & Care centre, then kindergarten
Mother & father	Key involvement of Grandparents – daily childcare provided.	M = Professional F = business manager/owner,	M = 29 F = 32	Eldest of 2 Boy = 7, Girl = 4	English	Home-based care with grandmother , playcentre then kindergarten
Mother & father	Uncles, aunts , cousins	M = at home parent F = Managerial	M = 35 F = 37	Eldest of 2 Boy = 4, Girl = 3	English	Kindergarten

Ordered in age of participating children, from youngest to oldest.

*English spoken at home, but 5 of these 6 parents' first languages are varying Asian languages, spoken sometimes with extended family

Two-child families were also typical in Clark's (1982) study of her precocious readers, with the sibling order also varying in her research. Clark's research had proportionately more families with more than two children than my study, perhaps reflecting changing patterns in family size (however, my smaller sample size limits demographic comparisons).

3.3.5 Grandparents

The involvement of grandparents was an important factor. Although I did not ask any questions specifically about grandparents, eight of the 11 families discussed interactions between the children and grandparents. In one of the 11 families, the child lives with his grandparents. The child saw his birth parents occasionally, and referred to his grandparents as "Mummy" and "Daddy". Another set of grandparents provided childcare for their grandchildren while their parents worked.

Of the three families who did not have opportunities for grandparents and grandchildren to interact, two families specifically mentioned this loss. For example, Matthew's mother stated, "It's unfortunate for the kids that they don't have any grandparents or relatives here" (M: Parent Interview, B1).

3.3.6 Socio-economic factors/Parent working patterns

The study did not include a socio-economic measure of the families, but my visits to their home led me to estimate mostly "middle income" New Zealand families, with a few families being middle to high income. Many of the parents had professional occupations; however, most families were also single income with mortgages. Ten out of the 11 families in my research had at least one parent working, but only three families had both parents working. One of the three working mothers had flexible hours so that she could reduce the hours needed for childcare. The grandmother of one of the other children with a working mother provided care for the children so that they could attend part-time, community early childhood education and have quality one-to-one time with a family member. Only one child attended early childhood education full-time.

In seven of the 11 families, the mother was “at home”, and in one additional family both parents were “at home”. “At home” describes parents who are primarily available for childcare and domestic responsibilities during the day. Some of these at home parents were not engaged in any form of paid employment. However, many New Zealand at home parents seek evening or weekend work to complement the hours of the “working” parent so that childcare hours are not needed, or are minimised. Examples from my research include a mother working Saturdays when her husband was home so that she could finish work earlier during the week, working from home, and part-time/casual work that allowed them to bring their children with them.

Parents reported that, during their children’s early childhood years, working and ‘at home’ patterns changed within families to suit the ages and needs of individual children and the wider family. In one family, the mother spent some time at home with a young baby and then later worked in an early childhood centre, taking her baby with her. Personal beliefs about quality early childhood education influenced her decision to leave that job. Later work included a part-time job in a children’s bookstore, taking her child with her, and care of a friend’s child. Several families had professionally qualified mothers who took lower paid but more flexible work to ensure that they were available as key caregiver: a mother with a master’s degree in nutrition and a qualified teacher both chose to work in the retail sector. At least two of the ‘at home’ mothers were also distance students, using the period when they were not in paid work to explore new interests and extend professional skills. These experiences show that the families participating in my study have the same challenges and experiences of change as many other New Zealand families do.

3.3.7 Summary of participating families

The parents of the children participating in this study had varied family structures and influences, but shared the experience of having a child who read at an early age and a commitment to the importance of parenting. In various ways, each group of parents advocated for their child’s well-being. Their responsive teaching roles, expectations and selection of schools and early childhood centres are issues discussed later in the thesis.

3.4 Participating Early Childhood Education Centres

The Ministry of Education (2002) strategic plan differentiates between the following early childhood education categories: home-based care, unlicensed playgroups, parent led services (including playcentre and language ‘nests’ such as Kohanga Reo), and education and care centres. Education and care centres may be sessional or full-time, privately owned or community-based, and include kindergartens and special philosophies such as those of Steiner and Montessori. Four of the centres in this study described themselves as “preschools”; two referred to themselves as “Montessori preschools” and two as “private preschools”, being attached to private schools. Although they are all “Education and Care Centres” according to the Ministry of Education (2002), the centres described themselves as preschools in order to highlight their focus on literacy and numeracy teaching, and to distinguish themselves from so-called ‘child-care’ centres. “Childcare centre” and “preschool” is not Ministry of Education terminology.

Regardless of the type of service, all licensed and chartered early childhood centres are required to meet the Ministry of Education (1996b) *Revised Statement of Desirable Objectives and Practices (DOPS) for Chartered Early Childhood Services in New Zealand*. Diverse services are able to meet the national curriculum, *Te Whāriki* strands and goals in ways that suit each centre’s philosophy, families and community (Ministry of Education, 1996a). Early childhood centres and families ideally work in partnership to support each child, according to *DOPs* (Ministry of Education, 1996b):

Management and educators should ensure that communication and consultation with each other and with parents/guardians, whānau, hapū, iwi and local communities acknowledge and respect all parties’ values, needs and aspirations . . .

Educators should provide opportunities for parents/guardians and, where appropriate, whānau to feel welcome to spend time at the service, discuss concerns and participate in decision-making concerning their child.

The New Zealand strategic plan for early childhood education (Ministry of Education, 2002) has partnership as one of the three key principles, along with quality and participation.

There are three types of early childhood service involved with the study: kindergartens, preschools attached to private schools, and Montessori preschools. Table 2, introduced previously, shows that individual children had attended a number of forms of early childhood education. Family selection of early childhood services is discussed in chapter eight. Table 3 summarises key features of the early childhood centres involved with the research, including cost, staffing ratios, hours open and hours that the children participating in the study attended. Where the centres have separate morning and afternoon sessional roll groups, the rolls that included the children participating in the research are shown in bold. At Island Kindergarten, there were 40 children in the morning, including a child involved with this study, and a different roll of 40 children in the afternoon. This is shown as '**40** 40'.

Only three of the early childhood centres participating in this study allowed children to attend for more than 20 hours per week (4 hours per day). Of the children who attended these centres, only one child in my study accessed the extended hours on a daily basis. This does not mean that there were no full-time centres available for families, but rather that families in this study chose to use sessional (part-time) early childhood education.

3.4.1 *Kindergartens*

There were six kindergartens involved in this study, recruited from two separate kindergarten associations. In New Zealand, kindergartens are managed by individual committees within regional associations. Kindergartens are sessional service; children generally attend for *either* morning or afternoon sessions, with separate "rolls" maintained for each session. The age range of children attending Kindergarten is generally between 3:0 and 5:0 years, although some older 2-year-olds attend some kindergartens. Larger kindergartens generally have two separate sessions, with younger

children attending in the afternoon and older children in the morning. Smaller kindergartens sometimes only have one session, with a wider variety of ages. The kindergarten philosophy is for children's play to be "self-selected"; however, many kindergartens have a short whole group teacher-led "mat time". Kindergartens have a staffing ratio of up to 15 children per teacher, usually supported by at least one parent helper on a rostered system. The kindergartens had either two or three qualified teachers, depending on the total roll. In addition to the rostered parents, other parents are encouraged to stay whenever they wish.

Awanui Kindergarten, Hilltop Kindergarten, Island Kindergarten and Oasis Kindergarten have morning rolls of older children 5 days per week (generally the 4-year-olds), and a separate afternoon roll of younger children (mostly 3-year-olds) 3 days per week. Lakeside and Northview Kindergartens have only one session per day, catering for children from around 3:5 to 5:0. The session runs for 3.5 to 4 hours each day. All of the children involved in the research were attending morning sessions, which were usually 3.5 hours in length, sometimes extended to 4 hours.

A mother of one of the participating children noted the importance of partnership between the kindergarten and family:

I went to see the kindy teachers when he first started kindy – I didn't want him to be misunderstood. We discussed things like ensuring he understood (the reading material). I ask him questions at the end of stories. We've discussed things a lot as we've gone along, but he's been pretty happy to muck in. They offered him extension but never wrote him a specific programme.

Of the three types of early childhood education service involved with my study, the kindergartens had significantly lower costs, greater socio-economic diversity, more children per teacher, and particular expectations of parent involvement during session and with fundraising.

Table 3
Participating Early Childhood Education Centres

Centre name	Type of centre	Roll am/pm	Hours open per week am/pm	Hours child attended per week	When child attends	No. of Teachers	Cost per week	Socio-economic/ cultural catchment (quotes from teaching staff)
Awanui	Kindergarten	45 42	18.5 7.5	18.5	5 mornings	3	Donation suggested \$5	'Medium socio-economic' 'Mainly NZ Pakeha'
Delta-Estuary	Private Preschool	17 <10	19 13.5	17	5 mornings,	2-3	Fees \$100 for mornings	'Middle to upper class families' 'Good mix of NZ European/Asian'
			(36 fulltime)	36	5 'full days' (8.15am to 3.30 pm)	2-3	\$180 for 5 'full' days	
Garden	Private Preschool	25 25	19 13.5	19	5 mornings	3	Fees \$100 for 5 mornings	'Middle to upper class families' 'Good mix of NZ European/Asian'
Hilltop	Kindergarten	30 30	17 7.5	18.5	5 mornings	2	Donation suggested \$5	'Very mixed'
Island	Kindergarten	40 40	20 10	20	5 mornings, plus care by grandmother	3	Donation suggested \$5	'Decile 10 area. 95%+ European.'
Jardin	Montessori	24 <24	15 10 (30 fulltime)	18	5 mornings, 1 afternoon	3	Fees approx \$100 per week	'Decile 9. Predominantly European.'
Lakeside	Kindergarten	45 0	20 0	20	5 mornings plus 1 afternoon	3	Donation suggested \$5	'Very mixed ethnic ... socio-economic Middle to lower mixed.'
Mountain	Montessori	25 15	15 15 (36 fulltime)	22	5 mornings, 2 afternoons	2-3	Fees approx \$100 per week	'Very affluent ... high socio-economic status - predominantly white European/Pakeha.'
Northview	Kindergarten	40 0	17 7.5	17.5	5 mornings, 3 afternoons, plus nanny	3	Donation suggested \$4	'Decile 10 ... quite mixed cross-section ... predominantly Pakeha families.'
Oasis	Kindergarten	30 30	17 7.5	17.5	5 mornings	2	Donation suggested \$5	'Decile 9... must be quite high ... we should be a 7 ... Predominantly Pakeha.'

3.4.2 “Private preschools”

The two private preschools in my study (Garden Preschool and Delta-Estuary Preschool) had a strong philosophy on developing early academic skills and readiness for school. There were structured daily reading and writing lessons, as well as opportunities for children to self-select play. Sometimes the teachers decided that particular play activities were compulsory for children to complete during their session. The centres suggested that once their children were settled, parents should not stay in the centre so that the children were not distracted from teaching and learning.

Each preschool had five morning sessions for 4-year-olds and five afternoon sessions for 3-year olds. In one of the centres, children who were 4 years old could stay for both morning and afternoon sessions if places were available. Many, but not all, of the children at the preschools go on to attend the attached private schools. Parents are charged fees of around \$80 per week for five 2.5-hour sessions, \$100 for the five 3.5-hour morning sessions, and around \$160 per week if they chose the 6-hour option.

Of the three children involved in the research who attended private preschools, two attended morning-only sessions, and one attended ‘full-time’ for both morning and afternoon sessions (8.15am to 3.30pm). One of the preschools was full, with a waiting list. The other preschool had only recently been established and had 17 children in the morning, and less than 10 in the afternoons, with two teachers.

The private preschools differ from the kindergartens in terms of their philosophy, cost and ratios. In terms of cost, ratio and parent involvement, there were similarities with the Montessori preschools, but without the specific Montessori focus. Perhaps the factor that most differentiated the private preschools from other types of service was their specific focus on academic preparedness for school, for example, handwriting, reading and story writing.

3.4.2 Montessori preschools

The two Montessori preschools in this study had Montessori-trained teachers and specialised Montessori equipment. They referred to themselves as “Montessori preschools” to highlight the Montessori focus and the emphasis on intellectual learning. The Montessori philosophy and expectations meant that the children worked in a quiet, “responsible” way on learning tasks, with the teacher acting as facilitator. In each centre there was at least one fully trained Montessori teacher and one or two assistants training in both early childhood teaching and Montessori approaches. Both centres offered flexible options of morning, afternoon or full day places. The Montessori centres accepted children at age 3 if they were toilet-trained. The preschools provided for children until age 6, but many of the children left as they turned five years old to attend state schools.

The two children participating in the study attended their Montessori preschool 5 mornings and at least 1 or 2 afternoons each week. The parents and centres shared a belief that the older 4-year-olds should extend their hours of attendance. Parents were charged fees of about \$80 per week for the morning sessions, and more if any additional sessions were used.

3.4.4 Summary of participating early childhood centres

Ten early childhood centres, within three early childhood services, have been introduced. The six kindergartens form the largest group, there were two preschools attached to private schools and two Montessori preschools. The early childhood centres were all sessional; although some centres allowed children to stay for two sessions per day only one child attended an early childhood centre for more than 20 hours per week. The early childhood centres included a range of communities, rolls, staff-child ratios and costs. This diversity of teaching philosophy and expectations will be explored later in the thesis.

3.5 Participating Schools

Schools and early childhood services may differ markedly in terms of philosophy, curriculum, ratio and routines. Children's individual early childhood-to-school transitions can highlight diverse experiences of continuities and discontinuities (Cullen, 1991). This study provided an opportunity to consider and compare early childhood and school case study contexts in terms of their support for precocious readers. Of the 11 children, four were "followed" as they transitioned to school, each of these four children enrolling in a different school.

In addition to variation in the types of school, children who participated in the school phase of this study were chosen on the basis of age and gender: the two girls and two boys started school within the same week of each other, and observations occurred concurrently. Because children in New Zealand generally start school on their 5th birthday, class numbers vary as often as daily, according to when local children have birthdays. The four children who were observed as they transitioned to school all had birthdays that fell during the New Zealand summer vacation (mid-December to late January), which meant that they all started school on the first day of the new school year. Early in the school year, three of the children were in classes of only 12 children to allow for ongoing enrolments.

Table 4 shows that Hinemoa and Mahuika were private single-sex schools, one being a boys' school and one a school for girls. Each of these schools combined primary and secondary on the one site, with one of the schools also having an early childhood centre. These two schools also had an "unashamed focus on academic excellence" and had a formal uniform. The two private schools were decile 10 and charged fees of around \$8,000 per year.

Rona School is a co-educational state primary school in a high socio-economic community. It is the primary school with the largest roll (400) in my study. The \$250 annual donation requested from parents is higher than that of many other state schools in the region.

Papatuanuku School is a co-educational state-integrated school (involving a partnership between the state and the Catholic Church). The school is in a multicultural, mixed socio-economic community and asked for parent donations of about \$75 per year. Papatuanuku School has the smallest roll and, because of lower staffing, the principal was also a part-time classroom teacher.

Each of the classrooms that I visited had one teacher at any one time, but one of the teaching positions was job-shared, with one teacher working 4 days per week and a different teacher working the 5th day each week. In one of the schools, the research child had a "home" classroom, but worked in a second classroom for reading. All of the new entrant teachers were female.

Information regarding parent selection of school, transition experiences and teaching philosophies will be discussed later in the thesis. In this section, the purpose has been to briefly introduce the four schools as key case study contexts for the children participating in the study.

Table 4
Overview of Schools

School	Type	Pupil gender	Level	Roll	School uniform	Decile	Fees/term
Hinemoa	Private	Boys only	Years 1-13	600	Yes	10	\$2,000
Mahuika	Private	Girls only	Years 1-13	650	Yes	10	\$2,000
Papatuanuku	Catholic-State Integrated	Co-ed	Years 1-8	100	Yes	6	\$75 donation
Rona	State	Co-ed	Years 1-8	400	No	10	\$250 donation

3.6 Summary

The key participants in this study are the children; however, it is important that the study also considers the key contexts of family, early childhood centre and school. These

contexts are important because they extend ecological understanding of the children participating in the study. Case studies involve “bounded systems” (Stake, 1994, 1995), but Bronfenbrenner’s ecological system highlights that there can be “layers” of where the boundaries of cases are. While early childhood centres and schools can be cases in some research, in this study they serve as aspects of the systems bounding the case studies of children. This chapter introduced the families of 11 children, and described 10 early childhood centres within three early childhood sectors and four schools.

Although ecological systems and social support are important, they cannot create a precocious reader. Individual ability and learning styles are fundamental. Diversity within the early childhood centres, schools and families influence the heterogeneity of the 11 children participating in this study. The case studies, being the 11 children, have commonality in that they focus on precocious readers, but these precocious readers are also unique individuals. Stake (1995) states “much of our gathering of data from other people will take the form of stories they tell and much of what we can convey to our readers will preserve that form” (p. 1). This study integrates the stories and experiences of the participants with data from multiple research methods. Within-case and across-case analyses and between-context analyses are important aspects of the study, supporting a holistic perspective of the children and a broad conception of learning. As Henry’s parents noted at the beginning of this chapter, it is important to study “the whole” of each case and to recognise that individual ability and experience are intertwined.

A key message of this chapter has been that there is diversity among the children, families, early childhood services and centres, and schools. The diversity highlights that it is *the children* who are the readers; they are the “unique cases”.

CHAPTER FOUR

RESEARCH PERSPECTIVES, DESIGN AND METHODOLOGY

During assessment of a standardised measure of receptive language at his home, Henry (aged 4:10) was presented with the word "orbit." He was shown a page with four black and white pictures on it, and asked to point to the one that represented the word. His choice was incorrect (score=0). However, he then proceeded to animatedly discuss "orbit". He told me that the picture was incorrect, because there were only five rings around the sun, and if it was our solar system then there should be nine rings. He also said that it was a shame the picture wasn't in colour, because if it was the fourth planet would be red – "that's Mars." Later on, after the test was complete, Henry drew me our solar system with nine planets orbiting. He wrote "For You" on it. (H: Field Notes)

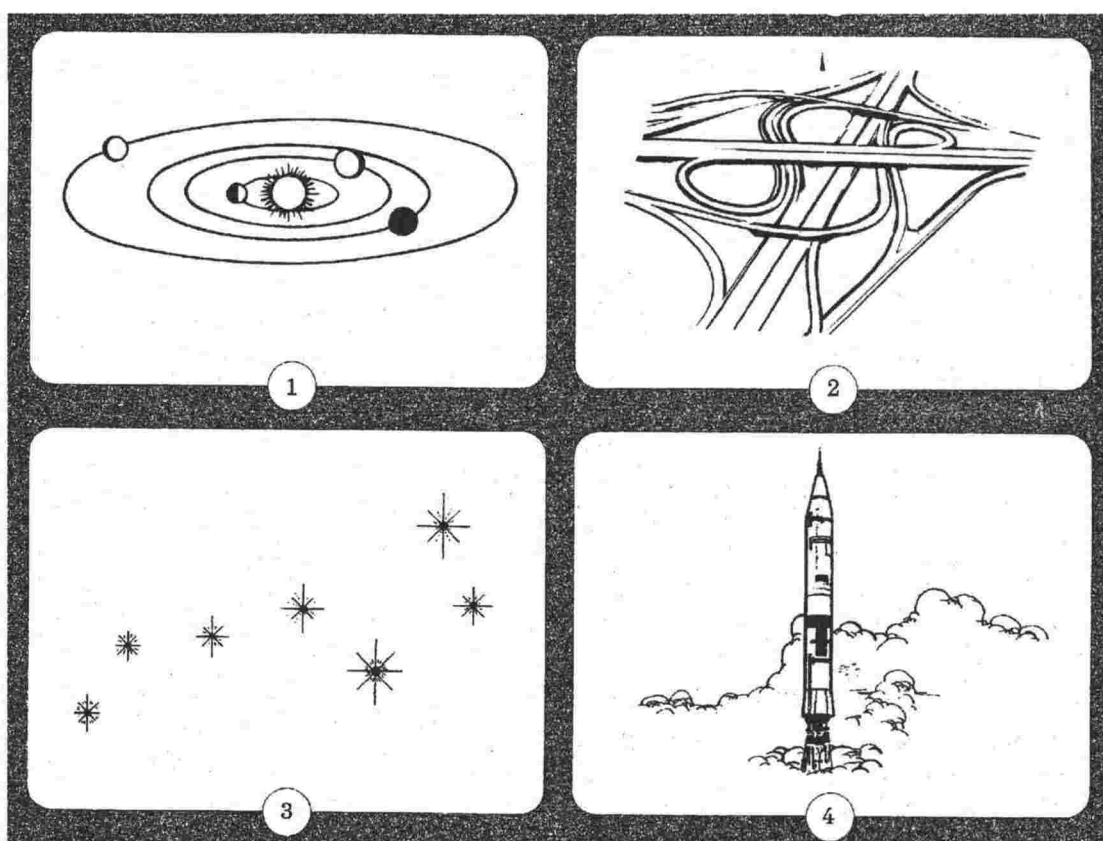


Figure 11. BPVS orbit item

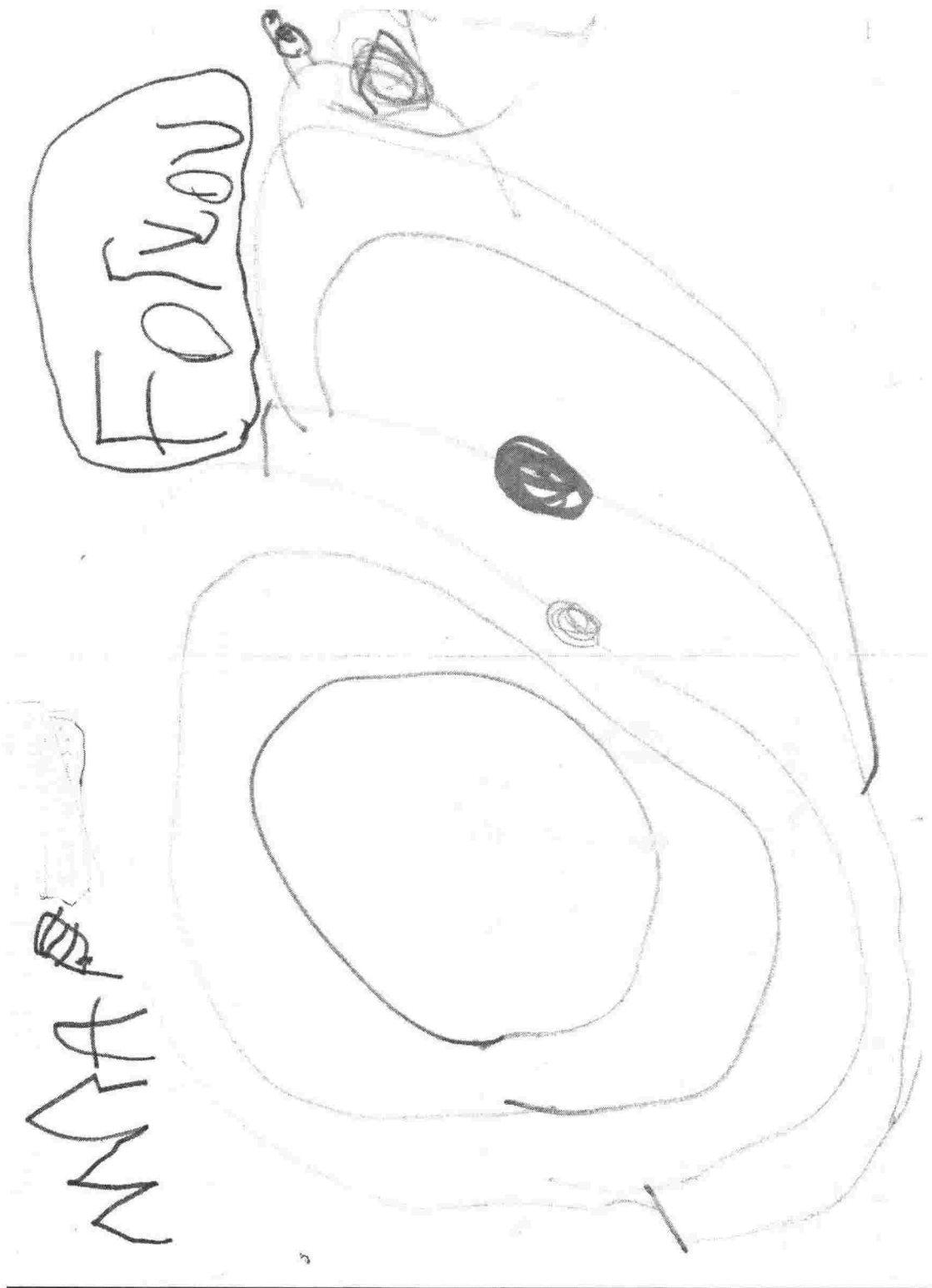


Figure 12. Henry's solar system picture.

4.1 Introduction

The vignette of Henry's discussion of "orbit" at the commencement of this chapter provides an example of the necessity of a broad research perspective. If I had recorded the standardised result of the *British Picture Vocabulary Scale (BPVS)* assessment only, I may have assumed that because Henry pointed to the incorrect picture for the word orbit, and scored zero, he did not understand the word or concept of "orbit" (see Figure 11). However, he proceeded to tell me that the picture was incorrect, and why. He knew that there were only six planets in the picture but nine in our solar system. He shared his opinion that the picture should be in colour, and that use of colour would confirm the third planet as Mars by its being red. The total score would have told me that he obtained a receptive language score overall of well above average, but would not have shown me the richness of his expressive language. If I had not formed a relationship with Henry, visiting his bedroom and backyard (to see his chalk drawings and plants) he may not have been inclined to draw and give me the picture of our solar system (Figure 12). However, by undertaking the range of standardised tests, in addition to observation, the quantitatively reliable evidence of his abilities on a range of assessment measures was obtained. The resulting information was of value to Henry's family, teachers, and me as researcher.

Gay (1996) stated, "In a simplified nutshell, qualitative analysis involves making sense out of an enormous amount of narrative data" (p.245). My own process of analysis highlighted for me how large my data collection had become. The 11 separate case studies *each* include most of the following data:

- semi-structured parent interview transcripts
- informal interviews with parents, ECE and school teachers, and children
- field notes
- observations of children in early childhood centres (twice each for all children) and school settings (twice each, for four of the children only)
- standardised assessments (*Burt Word Reading Test, British Picture Vocabulary Scale, Coloured Progressive Matrices, Neale Analysis of Reading*)
- special ability rating scales

- samples of children's art and/or writing
- samples from parent records, including photos, video and CD ROM
- samples from teacher records, observations, assessments
- additional written communication from parents.

In this chapter, I begin with an explanation of methodological perspectives informing the study: particularly constructivism, case studies and qualitative-quantitative positioning. Specific instruments used to gather data are described in the next section. Relationships, timeline and ethical considerations are further issues addressed within the chapter. Therefore, in this chapter *what* was specifically done, *why* particular approaches were used, and *how* research was actually conducted are all considered.

4.2 Methodological Perspectives

Decisions relating to research design and choice of method are informed by research paradigm and perspectives. Methodologically, my study is positioned within the qualitative paradigm (Middleton, 1996), although my methods were both qualitative and quantitative. Such mixed method approaches to research are becoming more common (Bell, 1999; Cresswell, 1994; Lincoln & Guba, 2000; Neuman, 1997; Rossman & Rallis, 1998). While some studies represent a single theoretical perspective, other studies combine a number of perspectives. Stake (1994) highlights commonalities between a number of research perspectives, stating, "Conceptions of most naturalistic, holistic, ethnographic, phenomenological case studies emphasize objective description and personalistic interpretation, a respect and curiosity for culturally different perceptions of phenomena, and empathetic representation of local settings – all blending (perhaps clumped) within a constructivist epistemology" (p. 242). Three methodological positions inform the methodological approaches used in my study: constructivism, case study research, and quantitative-qualitative paradigm.

4.2.1 Constructivism

Constructivism is a relevant paradigm because "we are all constructivists if we believe that the mind is active in the construction of knowledge" (Schwandt, 1994, p. 125).

Denzin and Lincoln (1994, p. 13) cite constructivism as being an *interpretive* paradigm evident in interpretive case studies and ethnographic fiction. The constructivist paradigm is variously referred to as interpretive/constructivist, naturalistic, phenomenological, hermeneutic, symbolic interactionist, ethnographic, and qualitative (Denzin & Lincoln, 2000). The key factor that distinguishes constructivism (or interpretivism) is the process of making meaning within social contexts (Lincoln & Guba, 2000; Magoon, 1977).

Other aspects of my research also link to constructivism. In particular, my “voice” was that of “passionate participant”, rather than the positivist voice of “disinterested scientist” (Lincoln & Guba, 2000, p. 166). I was interested in *the people* involved in my research, not only isolated behaviours. My approach to working with participants is described by Guba and Lincoln (1994) as “facilitator” or “multi-voice reconstruction” (p. 112) described how I aimed to work with participants. Within this facilitative process, I aimed to avoid a position of authority. Instead, my aim was to engage in collaborative, interactive learning with participants (Reason, 1994). In Figure 13, key elements of the research paradigm and perspectives pertinent to my research are illustrated. The issues are drawn from Guba and Lincoln (1994; Lincoln & Guba, 2000), but the figure has been constructed specifically for this thesis to illustrate my research stance in this study.

The constructivist research position that I have described in Figure 13 is influenced by personal beliefs and values about ‘doing research’ with people. Relationships with the participants meant that I honoured their input, and needed to earn their trust. The figure also illustrates my acknowledgement that, as researcher, the study data was mediated and reconstructed through me. However, the case study approach means that the focus is on participants; by having 11 case studies, the number of participants increased and my own participation became of less importance.

<i>Issue</i>	<i>Constructivist position of this study with precocious readers</i>
Inquiry aim	Understanding, reconstruction
Nature of knowledge	Individual reconstruction
Knowledge accumulation	More informed and sophisticated reconstructions; vicarious experience
Goodness or quality criteria	Trustworthiness and authenticity
Values	Included – formative
Ethics	Intrinsic; process tilt toward revelation; special problems
Voice	'passionate participant' as facilitator or multi-voice reconstruction
Training	Qualitative and quantitative
Accommodation	Incommensurable (not necessarily equal or balanced)
Power/Authority	Seeking recognition and input from participants
Epistemology	Transactional/subjectivist, created findings

Figure 13. Research paradigm for thesis.

4.2.2 Design: Multiple-Case Study

The purpose of case study research, according to Harker (1997) is to

observe, probe and understand an individual unit (whether a child, a group, a class, a school or a community) as a whole – what goes on within the unit, and the unit's relationships *horizontally* with other units, and *vertically* with other orders of units. It is the attempt to understand *meaning* within units and to understand the *individual*, unique construction of reality (p. 3).

There are differing opinions on whether case study design is a research method, but it is generally considered to be ethnographic, interpretive research (Adelman, Jenkins, & Kemmis, 1976; Atkinson & Delamont, 1985; Kemmis, 1980) Stake (1980) suggests that case-study is not a specific methodology, but defined by the object of study, which should be a "unique, bounded system". This study on precocious readers uses a case study approach in that I have maintained a holistic perspective of the children rather

than a limited focus on reading ability alone, and because I have included a number of key contexts. The aspiration of case studies is to create and share authentic knowledge (Kemmis, 1980). The boundaries of the case include any direct influence on or connection with children's reading; social support from grandparents, parent modelling of reading, computer use, access to libraries, and peer responses to precocity all influence the case studies. A precocious reader is a case but precocity is not a case and reading is not a case. Figure 14 illustrates that each of the case studies focuses on the child, is bounded strongly by family and also bounded by early childhood, school and community contexts. The figure shows that the case study approach was replicated 11 times, but connections could be drawn through each case to examine common issues.

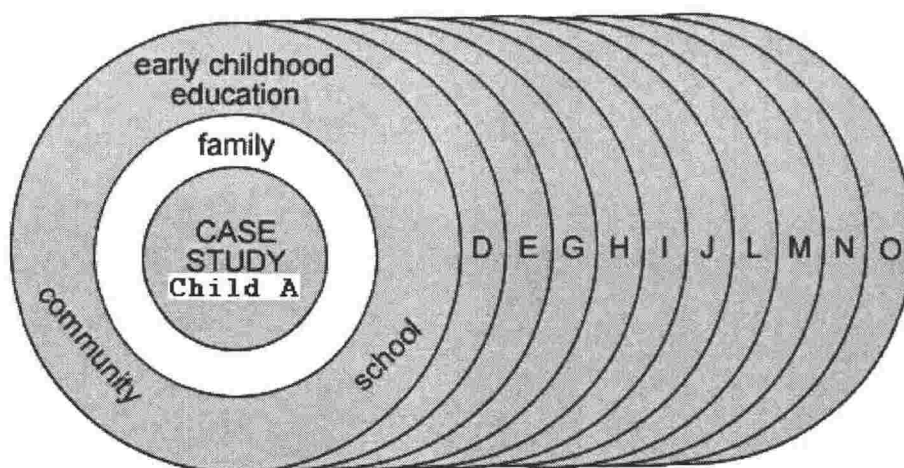


Figure 14. Multiple-case study.¹⁷

Stake (2000) notes that a case study begins with bounding the case and that the qualitative case researcher's major responsibilities are

1. bounding the case
2. selecting phenomena, themes, issues, research questions

¹⁷ Cases A, D, E, G, H, I, J, L, M, N and O represent the children in the study. Children B, C, F and K were not recruited into the main study.

3. seeking patterns of data to develop issues
4. triangulation of key observations and bases for interpretation
5. selecting alternative interpretations to pursue
6. developing assertions and generalizations (p. 448).

Yin (1994) suggested that case study research begins with the research design and that the key steps are

1. development of research questions
2. identification of propositions
3. specifying the unit of analysis
4. ensuring that data will logically link to the propositions
5. explaining interpretation of findings.

In this study of precocious readers, a combination of the two processes was used. In the early stages, I developed research questions, considered propositions *and* bounded cases, and selected phenomena, themes and issues. In the middle phase, I collected and considered data. Finally, I moved on to interpretation, explanation and assertion.

Because multiple case studies provide an opportunity for replication, multiple case design evidence can be considered more compelling and studies more robust than single case studies (Herriott & Firestone, 1983). Although Yin (2003) uses the term “multiple-case study”, Stake refers to the “collective case study” approach (1994, 1995). I decided to use the term “multiple-case study” in order to acknowledge the importance of each individual participant. Stake’s (1994) definition of collective case study is nevertheless useful, stating that it is

Not the study of a collective but instrumental when extended to several cases ...They may be similar or dissimilar, redundancy and variety each having voice. They are chosen because it is believed that understanding them will lead to better understanding, perhaps better theorizing, about a still larger collection of cases (p. 237).

Collective case study is a relevant approach for learning about the larger category of precocious readers and perhaps the larger categories of precocious, able or successful

learners. Figure 14 also illustrates that the research involves multiple cases; the 11 cases replicated method and processes, although there were individual characteristics unique to each case. Consistency of procedures meant that within-case and comparative and across-case perspectives can be included.

4.2.3 *Quantitative/Qualitative paradigm*

Research projects often involve multiple methods of data-gathering; qualitative and quantitative methodology need not be contradictory (Davidson & Tolich, 1999; Miles & Huberman, 1984). Bogdan and Biklen (1992) cite the usefulness of “an interplay of competing data” (p. 43). Rather than a “superior hybrid”, researchers “usually produce a piece of research that does not meet the criteria for good work in either [quantitative or qualitative] approach” (Locke, Spirduso & Silverman, 1987, p. 96).

I have included both quantitative instruments and qualitative data-gathering in my study. Because the information I gathered varied from assessing children’s reading abilities to observing their play, the data-gathering methods needed to be varied to reflect the broad investigative interest. Validation of reading ability is an example of investigation requiring use of quantitative assessment with strong reliability. Ecological information about children’s play and participation in early childhood centres, however, was more easily gained through qualitative on-site observation. It was important to clarify the purpose and paradigm influencing my multi-method approach. Convinced of the validity of using both qualitative and quantitative methods, I still queried whether I was working within both qualitative and quantitative methodological paradigms. A key passage from Denzin and Lincoln (1994) clarified my position. They state:

Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. Qualitative researchers ... describe routine and problematic moments and meanings in individuals’ lives. Accordingly, qualitative researchers deploy a wide range of interconnected methods, hoping always to get a better fix on the subject matter at hand. (p. 2)

The mixed method approach in my study meant a range of data was produced. Some of the instruments in my study were more quantitative, others more qualitative. However, *qualitative understanding* remained the focus of each case. Standardised assessments, for example, provided the reading ages that defined entry to the cases, but qualitative insights were gained through observation and other methods. A later analogy was derived from *Alice in Wonderland*; quantitative instruments were a key to enter the secret garden, but once inside the garden the qualitative experiences of painting the roses red, playing croquet and dialogue with the red queen were more fundamental than quantitative analysis of how many roses or croquet balls could be counted.

Figure 15 shows that the data-gathering methods employed in the research could be placed on a quantitative-qualitative continuum. Standardised instruments are furthest to the left, and in bold, with qualitative methods to the right. *No* instruments are positioned as purely quantitative. The specific instruments are described in the next section of this chapter, and illustrated in the Appendices.

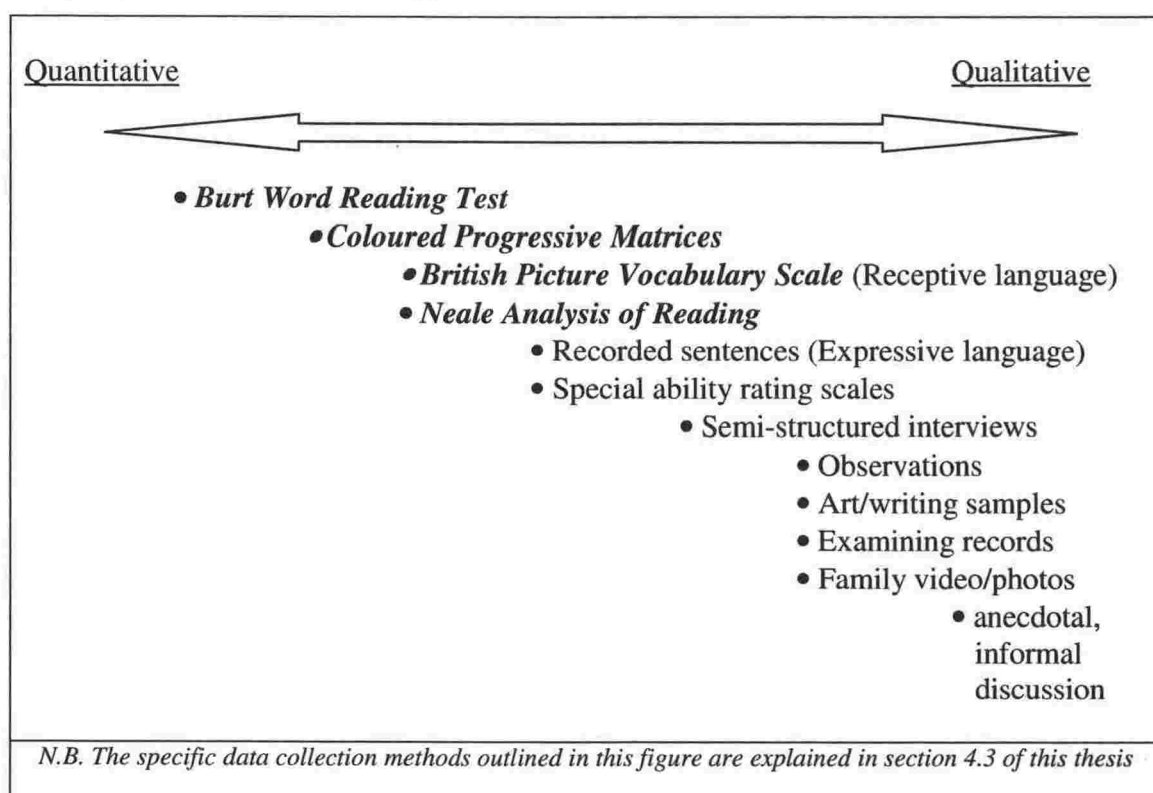


Figure 15. Quantitative/Qualitative perspectives.

4.3 Instruments

Bouma (1996) affirms the value of a multi-method approach, stating, "It is often better to use several data-gathering techniques to answer a research question. Using a variety of techniques may provide different perspectives on the situation, thereby increasing what is known about it" (p. 180). Harker (1997) reinforced the value of broad research designs, and described the case study approach as having "considerable overlap with a number of specific research techniques such as ethnography, surveys, participant observation, quantitative methods, clinical methods, and interviewing. As discussed earlier this chapter, the range of methods in my study included both quantitative and qualitative instruments. In this section, the instruments used are discussed: standardised tests, special ability rating scales, interviews and observations. The instruments, and other forms of data collection, are individually discussed, followed by explanation of the selection of instruments.

4.3.1 Standardised assessments

Inclusion of the standardised assessment provides quantitative strength to the study by providing the opportunity to compare results from the 11 participants in this research against a larger, norm-referenced group. In terms of the children's reading achievement, standardised test results are still often assumed to have greater reliability than the authentic observations of parents. The standardised assessments used in my study were the *Burt Word Reading Test*, the *Neale Analysis of Reading*, *Coloured Progressive Matrices* and the *British Picture Vocabulary Scale*.

The *Burt Word Reading Test (Burt)* (Gilmore, Croft & Reid, 1981) is an individually administered measure of an aspect of a child's word recognition skills. The test card consists of 110 words printed in differing sizes of type and grades in approximate order of difficulty (see *Appendix G*). The manual directs that the child read as many words as s/he can, until 10 consecutive words are read incorrectly; the child is then invited to look over the remaining words to see if any others can be read. The assessment should take no more than 10 minutes to complete. Although it is a *word reading* test rather than a *reading* test, the *Burt* correlates highly with the *Neale Analysis of Reading* (Neale,

1999). The *Burt* was also useful to use as it is an assessment widely used in primary schools, so teachers should readily understand results of reading 'age bands' well above chronological age. It has also been used in other New Zealand research on reading (Fletcher-Flinn & Thompson, 2000; Greaney, 1998). The New Zealand edition of the *Burt* has been revised and standardised for New Zealand children, with age norms provided for children from 6:0 to 12:11 years. Boys and girls' norms were used.

The Neale Analysis of Reading (Neale) (Neale, 1999) provides a reader with passages graded in six levels. Two parallel forms are provided, enabling retesting with material of similar complexity and difficulty and checking against regression toward the mean; half of the children began with each of the two versions (green or yellow). In addition to the parallel forms, practice passages are provided. Line drawings accompany passages to support the reading (see *Appendix H*), and comprehension questions are also provided for all passages. This Australian test can be used with readers of all age, but the tables of norms refer to students aged 6.0 to 12+ years. Norms are provided for three aspects of reading that are of key relevance to precocious reading: accuracy, comprehension and rate (fluency). The *Neale* was chosen particularly because of the range of norms, the parallel forms, the possibility of assessing comprehension and fluency, and because it was not regularly used in New Zealand, meaning that the chance the children had seen the resource previously were minimal. Children's reading of the *Neale* was often tape-recorded to enable review of fluency and expression. My own notes elaborated qualitative dimensions of reading, for example, on the child who swiped her hands like a lion's claws as she read "The lion sprang" (I: field notes). Word errors from passages read on the *Neale* were categorized as mispronunciations, substitutions, refusals, additions, omissions or reversals. In addition, I used Clay's (1993a) Running Record analysis of meaning, structure and visual cues within errors and self-corrections (see *Appendix I*).

In 2000, as I began this study, the first reports of the longitudinal *Competent Children* projects, had only recently been released (Hendricks & Meade, 1993; Wylie, Thompson & Kerslake Hendricks, 1996; Wylie, 1996; Wylie, Thomson & Lythe, 1999). Ravens

Coloured Progressive Matrices (CPM) (Raven, Raven & Court, 1965) was used by Wylie et al. "to assess children's logical problem-solving skills" (1996, p. 24). The ceiling of literacy measures used in the *Competent Children at Five* (Wylie, Thompson & Kerlake Hendricks, 1996) study was too low for the ability of the children participating in my research, for example, Clay's word list, which involves reading 15 word like "I", "a", "on" and "to" (Clay, 1993b). However, I hoped that including *CPM* in my research provided the opportunity of comparing the children in my study with a wider sample of New Zealand children on a non-literacy measure. Using the *CPM* provided variety for the participating children and also supported the commitment to a holistic perspective of the children; it was important to tap abilities other than literacy if I was really to look at the "whole child" (Ministry of Education, 1996a). The *CPM* has coloured illustrations with a missing piece; six pieces are displayed below the illustration, only one of which correctly completes the pattern (see *Appendix J*). There are three sets of 12 patterns, totalling 36 tasks. Correct completion of patterns involves recognition of similarity, orientation and identity. Norms for British children aged 5.5 to 11.5 were used, from the 1998 revised manual (Raven, Raven & Court, 1998).

The British Picture Vocabulary Scale (BPVS), (2nd Edition.) (Dunn, et al., 1997), like the *CPM*, gave the children an opportunity to try an attractively presented assessment measure that was quite different from the task of reading. The *BPVS* is a measure of receptive language and vocabulary, standardised from ages 3:00 to 15:08. The manual purports it to be "an achievement test since it shows the extent of English vocabulary acquisition". It assesses verbal ability and verbal intelligence aspects of scholastic aptitude. Research has repeatedly affirmed the strong correlation between measures of vocabulary and full scale IQ tests (Dale & Reichert, 1957; Elliott, 1983, 1990; Weschler, as cited in Dunn, et al., 1997). Stainthorp and Hughes also used the *BPVS* in their work with "Young Early Readers" (1998, 1999), describing the assessment as "a test of receptive vocabulary, which correlates highly with general cognitive ability" (Stainthorp & Hughes, 2004, p. 110). Nancy Jackson and her colleagues used the American version of the *BPVS*, the *Peabody Picture Vocabulary Test* (Dunn & Dunn, 1997). Each page of the *BPVS* had four simple black and white illustrations. The

child's task is to choose which picture best illustrates the meaning of the target word stated by the tester (see *Appendix K*). The ceiling for the test is the set within which the child makes eight or more errors. The test is expected to take 10 minutes to administer. Although the *BPVS* was essentially a passive exercise (pointing to one of four pictures), children related to some of the pictures and often made anecdotal comments.

4.3.2 Rating scales

Two special ability rating scales designed for teacher use were used within this study. The scales were broadly focused at children with special abilities, not targeted at early readers. The scales complemented interviews by acknowledging the perspectives of parents, in particular, and teachers. One of the scales would have taken 10 to 15 minutes to complete and the other about 5 minutes.

The first special ability rating scale, devised by Schwartz (as cited in Jones, 1988) was a simple checklist of 15 behavioural characteristics for preschool children (see final page of *Appendix L*). Jones (1988) states, "If a child exhibits eight of the characteristics, then further observation and testing is in order. If you can spot 12 or more, the child is most likely gifted and testing, referral, and possible intervention measures should be implemented" (p. 6). The checklist was offered to parents as part of their interview and included a number of affective traits. A purpose of including this rating scale was to assess the usefulness of the rating scale for identification of special abilities for my research participants.

The second special ability scales were the New Zealand-developed *Teacher Observation Scales* (McAlpine & Reid, 1996). The tool involves ticking statements that describe the child, from lists of characteristics in five domains: learning, social leadership, creative thinking, self-determination, motivational (see *Appendix M*). The scales therefore provided an opportunity to gather data on potential strengths of the children other than cognitive abilities, linking to my holistic emphasis on the child. All parents and some teachers were asked to rate the children participating in the research using the scales. The Teacher Observation Scales were created and published for school age children, not

preschool children. Inclusion of this measure in the study supported consideration of whether the scales could be useful for younger children, and if any of the observation scales domains would have particular strength for precocious readers.

4.3.3 Interviews

Semi-structured and informal interviews (Fontana & Frey, 1998; Lentz & Wehmann, 1977; Minichiello, Aroni, Timewell & Alexander, 1995) were undertaken with parents, children, early childhood teachers and primary teachers in this study. Informal interviews were on an on-going basis, but the semi-structured interviews tended to be mid-point or toward the end of each case study. *Appendix E* shows that in David's case, the major parent interview occurred after the standardised assessments and early childhood observations had been completed. Edwards (2001) states, "Interviews allow case study researchers to explore the meanings that lie behind observed behaviours or documentary evidence" (p. 131). The semi-structured parent interview questions in my study acknowledged my interest in family support and school transition and broad literature relating to emergent literacy. The semi-structured interviews also explored how children learned and parents taught, and key factors relating to literacy. Key previous research on early readers by Durkin (1966) and Clark (1982) had included comprehensive interviews of parents/caregivers. Other researchers (Anbar, 1986; Brenna, 1995; De Baryshe, 1995; Jackson, 1999; Stainthorp & Hughes, 1998) combined parent interviews with formal child assessment. In my study, the semi-structured interviews had prepared, open-ended questions (see *Appendix L*). When appropriate, the questions were adapted to suit the family circumstances or as a result of information having been already covered. If parents asked me questions, for example about support networks or the frequency of precocious reading, I would answer them. The semi-structured parent interviews were held in parent's homes, taking 1.5 to 2 hours each. Transcripts were subsequently given to the parents, and they were invited to make corrections, which some parents did.

Informal interactions occurred with parents throughout the study. I shared observations and examples from discussions of children's learning, loosely grouped in categories,

which stimulated co-constructive discussion and brainstorming. The early childhood and primary school teacher interviews were informal, following the procedure noted above for parents, but scheduled; interviews with teachers occurred in early childhood centres and schools, at lunch times or when children had left for the day. Rather than using a formal semi-structured interview with children, interactions also occurred on an informal basis throughout the research, as opportunities arose. Some children wanted to show me their bedrooms, others talked to me about their early childhood centres before I visited, and others told me about people who helped them learn. Children drew me pictures, told me jokes, told me when they had “had enough” testing, and taught me about their interests (*Lego*, dinosaurs, space, animals were favourite interests). This broad approach to data collection reflects the importance of a holistic perspective of children and learning, and an attempt to include children’s voices in the research. These aspects of my case studies provide an important contribution to the research on precocious readers. Other studies focus on what precocious readers could or couldn’t do. I aimed, more simply, to present the children.

4.3.4 Observations

I observed each of the children who participated in the study play and learn in their early childhood education setting on two separate occasions. The average of one hour per observation (generally 45 minutes to 1.5 hours) meant I had approximately 25 hours of early childhood observation records. I simply “followed” the child for the duration of my visit, recording what I could of the child’s behaviour, play and expressive language (see *Appendix N*). The purpose of the observations was to have another “window” through which to view the child; play, social interaction and expressive language in ecological contexts were key foci. Observations of children were arranged to suit early childhood teachers, although I tried to arrange the second observation times to be different from the first. As a qualitative method (Adler & Adler, 1998)¹⁸, it is important to acknowledge that observations are filtered through the eyes of the researcher; Rolfe

¹⁸ Areas of play were also coded and quantitatively analysed, but deleted from this report as the data did not appear to usefully add to the case studies.

(2001) states, "As human observers, it is inevitable that our own feelings and interpretations influence what we see or don't see" (p. 231).

Similar observations occurred on two separate occasions for each of the children who were observed in the school phase. I asked teachers to suggest classroom times that ideally did not include physical education, assembly or extended periods of whole-class teacher-task. The primary purpose was to observe the child's behaviour, task attentiveness, socialisation, and utilisation of resources in the school setting.

4.3.5 *Additional data*

During informal interviews throughout the study, several parents and teachers shared children's artwork and writing, photographs, videos, health and development records, teacher observations and a variety of written records, such as learning stories (Carr, 1998c, 2001). One family compiled a compact disc recording and a video of early literacy interactions especially for my study; several children drew me pictures. Some of this diverse material I have been able to incorporate within the thesis; other material facilitated parents' recollection and further discussion with the parents or teachers. All these components supported a holistic perspective of the child and the broader research focus on *learning* rather than the narrower focus on *reading*.

Another source of research data was extraction of examples of children's expressive language from the early childhood centre observations and home visits. Henderson, Jackson, and Mukamal (1993) stated in their case study, of a highly precocious reader, Max, that he "constructed unusually long and syntactically complex sentences for his age". Gathering examples of expressive language would facilitate some general consideration of whether they were typical or atypical for 4-year-old children and enable comparison between the formally assessed receptive language measure (BPVS) and the ecologically gathered expressive language.

Finally, I gave children the opportunity to try a three-dimensional puzzle on one of my visits (see *Appendix O*). This was a non-standardised instrument, estimated to be within

each of the children's zone of proximal development (Vygotsky, 1978); they could not complete the puzzle on their first independent attempt, but could with some prompting or modelling. The puzzle provided an opportunity to observe the child engage with a non-literacy-based challenge to illustrate dispositions such as persistence.

4.3.6 Selection of instruments

It is important that data-gathering instruments are appropriate for their intended purpose. Because of the complexity of the study with multiple cases, multiple sites and multiple methods (see Figure 16), I wanted to be convinced that the purpose behind each method was valid. Documenting links with other research enabled me to be able to reflect on, and report, ways in which the methods of my study compared to, or differed from, previous research. Figure 17 provides an overview of the instruments within my study, their key features, purposes and links to research.

The major instruments were trialled before use in the study. The *Neale Analysis of Reading*, *Burt Word Reading Test*, *British Picture Vocabulary Test* and *Coloured Progressive Matrices* were trialled on a six-year-old with above-average reading ability, under observation from one of my supervisors. Trialling ensured that I had practice implementing the test procedures. The parent interview was piloted with a friend whose daughter had been an early reader, and the transcript shown to my supervisors. This process provided an opportunity for me to estimate the time the interview would take, and to enhance the clarity of some questions.

Multiple Cases	Multiple Sites	Multiple Data Collection Methods
11 children, each a different 'case' Parents, siblings, grandparents and other whānau Early childhood teachers New entrant school teachers Children's peers	11 children's homes Some grandparents' homes 10 early childhood centres 4 new entrant school classrooms	Observation (School and early childhood education settings) Standardised testing (<i>Burt Word Reading Test</i> , <i>Neale Analysis of Reading</i> , <i>British Picture Vocabulary Test</i> <i>Coloured Progressive Matrices</i>) Interviews (parents and teachers) Records & samples Informal data collection

Figure 16. Complexity of the study.

<i>Assessment Measure</i>	<i>Key features of assessment</i>	<i>Assessment Purpose</i>	<i>Links with Wider Research</i>
<i>Burt Word Reading Test</i>	Results understood by teachers. Quick, easily administered. NZ standardised	Word reading	Fletcher-Flinn & Thompson (2000), Greaney (1998)
<i>Neale Analysis of Reading</i>	Reading level, fluency and comprehension. Recent revision. Practice passages, parallel forms. Well presented.	Reading: accuracy, fluency and comprehension ages	Fletcher-Flinn & Thompson (2000), Greaney (1998)
<i>Raven's Coloured Progressive Matrices</i>	Link with 'competent children' research	Logical reasoning	Wylie et al. <i>Competent Children</i> projects (1996, 1998)
<i>British Picture Vocabulary Scale</i>	Standardised for wide ability range. Recent revision. Well presented.	Receptive language. Cognition	Parallel to <i>Peabody Picture Vocab Test</i> (Dunn & Dunn, 1997) –widely cited in US research
Rating scales	Easily administered, involves parents, and teachers. One is a NZ instrument	Clarifying special abilities. Usefulness of special ability scales?	Schwartz (1980) McAlpine & Reid (1996)
Parent questionnaire/ interview	Essential to tap perspectives of parents. Usually involved both parents (sometimes mothers only)	Self-concept, social support, motivation, environment, reading practice and interest, metacognitive strategies, special abilities, family values and practices	Anbar (1986); Brenna (1995); Clark (1982); De Baryshe (1995); Durkin (1966, 1976); Jackson (1988); Stainthorp & Hughes (1998).
Informal teacher and parent interviews	Important aspect of ecological context.	Motivation, self-concept, metacognitive strategies, social support, environment	<i>Competent Children</i> projects (1996, 1998)
Child interview	Ad hoc, embedded informally within research. Child's voice	Motivation, self-concept, metacognitive strategies, Reading	Smith, Gollop & Taylor (2000)
Observation of child in home, school and early childhood settings.	Focus on child and evident behaviour	Motivation, metacognitive strategies, social support, environment.	Cullen (1998, 2002); Carr (2001); McNaughton (1995); Clay (1967, 1979)
Examples of expressive language	Naturalistic contexts, gathered during observations or assessment tasks	Expressive language	Henderson, Jackson & Mukamal (1993)

Figure 17. Data-gathering purposes and links to research.

4.4 Relationships

During the study, I had both participant and non-participant roles. When visiting early childhood centres I chose a non-participant observer role and when conducting standardised tests I needed to follow the prescribed procedures. However, I valued the fact that families invited me to participate in a relationship with them, and I certainly tried to avoid a clinical approach when working with the children.

Relationships between researchers and participants are important to acknowledge. Bogden and Biklen (1992) state, "Ethics are understood in terms of their lifelong obligations to the people who have touched their lives in the course of living the life of a qualitative researcher" (p. 55). My personal and philosophical stance on working with families links my research process with cooperative inquiry and participatory research (Reason, 1994). Parents were consulted, interviewed and given feedback, and directly observed assessment activities. Data-gathering was, strictly speaking, for my benefit; however, families gained records/portfolios, interest/attention and feedback. Parents indicated that they found the experience to be more useful than intrusive; Oscar's father said, "We were happy to participate because we thought we'd get something out of it too ... it's been interesting" (February, 2002). Bogdan and Biklen (1992) affirm, "With qualitative research . . . the relationship is ongoing; it evolves over time. Doing qualitative research is more like having a friendship than a contract" (p. 53).

My contact with the families has not ceased simply because the research data collection is complete. Some of the families asked to meet other families involved, and offered to share their contact details with other families. A mother, who had earlier stated her appreciation at being able to talk about her child knowing I was interested, invited me to a school meeting after my research data had been collected (H: Field notes). Several families sent letters and e-mail, especially on their child's transition to school. The final time I formally collected data was acknowledged, but, in many instances, informal contact has continued. There was no standard exit time.

4.5 Timelines

A time-line of nearly 3.5 years was originally planned, but extended to just over 5 years. A year was spent planning and preparing, although reading of literature had also occurred during the previous years. Fieldwork took just over a year. The data-gathering was extensive, with over 120 site visits and more than 4,000 kilometres of travel. Analysis, reflection and write-up extended over the next three years (see *Appendix P*).

Children entered and completed the study at varying times, according to when they were “found”. Factors influencing the length of their involvement included: when they were recruited, if they were selected, how frequently we could meet, whether they were included in the school phase, timing of holidays. Figure 18 demonstrates the timeline of participant involvement and highlights that multiple case studies happened at any one time. During February and March 2002, for example, nine cases were concurrently active within the study. All elements of case study A were completed in 4 months; however, case studies D and G were involved with the study over an 11-month period.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
March 2001	■	■	■												
April 2001	■				■										
May 2001	■			■	■	■	■								
June 2001	■			■	■		■								
July 2001				■			■								
August 2001				■			■								
September 2001				■			■								
October 2001				■			■	■	■	■	■	■	■		
November 2001				■			■	■	■	■	■	■	■	■	■
December 2001				■			■	■	■	■	■	■	■	■	■
January 2002				■			■	■	■	■	■	■	■	■	■
February 2002				■			■	■	■	■	■	■	■	■	■
March 2002				■			■	■	■	■	■	■	■	■	■
April 2002								■	■	■			■	■	■
May 2002								■	■	■			■	■	■
June 2002								■		■			■	■	■
July 2002								■							

Participants B, C, F and K were not recruited into the full study after initial assessment.

Figure 18. Timeline of participant involvement (March 2001 to July 2002).

4.6 Data Analysis Procedures

Parent and teacher interviews, informal discussions, observations and field notes were all components of my qualitative data collection. The analysis of the qualitative data is the focus of this section. Standardised instruments were analysed according to the procedures in the manual.

Analysis of data has the mechanistic purpose of aiding selection and reduction, but also the more important purpose of finding the examples and images that best illustrate the research story. A more holistic perspective of analysis describes a detailed examination of anything complex made in order to understand its nature or to determine its essential features (Tesch, 1990). The Webster dictionary definition of *analysis* (Webster's online dictionary, 2005) includes the critical phrase "ensuring understanding"; without understanding, analysis would be a meaningless dissection. This broader purpose was helpful to remember as I worked with increasingly smaller units of data.

Tesch (1990) describes data as "pieces of paper" covered in words. Focusing on deconstruction, dealing with many of these 'pieces of paper' forced me to temporarily disengage from relationships with the participants in my study. A metaphor I used during the analysis phase was that I moved from strip mining to grading the carat and cut of gems. Discipline required in this phase is noted by Wolcott (1994), who states, "Contrasted with the weeks and weeks in which she will be engaged in mechanical processing, the truly analytic moments will occur during bursts of insight or pattern recognition" (p. 24). Plath (1990) remarked that this phase has "all the dramatic tension of watching paint dry" (p. 375).

In addition to its purpose, the *process* of coding and analysis is important: "A physical feel for the data" is part of the "concrete" approach (Patton, 2002, p. 446). For the qualitative data in my study, a process similar to the "constant comparative analysis approach" described by Mutch (1995) was used. Multiple copies of all of my notes were made. A master set was kept intact for each case study, and another set marked with highlighters and "flags", drawing out initial categories across the study (see

Appendix Q). A third set was highlighted and key quotes or sections manually cut and sorted into the categories – initially into physical piles - then stored in envelopes. Categories were subsequently shuffled and refined (many times!) to ensure that both repeated and powerful messages were represented. Groupings were later sorted in finer detail, as I began to write, and taped onto large charts (see *Appendix Q*). The coding categories that framed my analysis are therefore both quasi-inductive and quasi-deductive: some of the categories from my first cut at coding were tentatively proposed before analysis (for example, transition issues and literacy issues and other categories emerged from the results (for example, computer use and involvement of grandparents). A concept map was a tool used in later stages of my thesis writing to reconsider structure of the thesis results and key messages (see *Appendix R*).

Parent, teacher and child perspectives all provided valid ‘windows’ through which to view children’s learning. My research maintained a constructivist perspective of participant “truths”, accepting that there are multiple realities, rather than the positivist approach of seeking out discrepancies to disprove perspectives. One way of including this approach was to invite teachers and parents to review data and help me prepare charts; some parents in turn involved their children in adding ideas to these brainstorm charts (see *Appendix S*). However, reflexivity means that I am not only reporting experiences of others, but also applying my own meanings, understanding and perspectives (Silverman, 1993). Although my study aimed to share the voices of children, it is analysed and reconstructed through my own perspective. Therefore, despite my intention to conduct participatory research, analysis is both etic (labels imposed by the researcher) and emic (from participants’ worldviews) (Harré, 1980; Vidich & Lyman, 2000).

4.7 Ethics

Ethics approval was granted by Victoria University of Wellington on 21 November 2000 for the home and early childhood phases of this study. An ethics extension for the school phase of the study was applied for and received in 2001.

Ethical propriety is referred to by Leedy (1997, p. 116) as involving “simple considerations” which include fairness, honesty, openness, disclosure of methods, respect, integrity, confidentiality and the avoidance of coercion. These “simple considerations” are certainly the way most researchers (including me) would intend to work. In addition to acknowledging ethical discussion identified in current research literature (for example; American Psychological Association, 1992; Clark, 1997), acting in an ethical or moral way is part of my personal philosophy. Honestly caring about all the participants in my research and treading cautiously helped me to negotiate a safe path throughout the research. Bogdan and Biklen (1992) acknowledge, however, that the very word “*ethics* is emotionally charged and surrounded with hidden meaning” (p. 49). Figure 19 presents key ethical principles that were included within my original ethics research proposal. In the right-hand column of the figure are some of the issues and experiences that challenged delivery of the principles, for example ethics surrounding the involvement of the children in a subsequent study (Thompson, Fletcher-Flinn, & Margrain, in progress).

I was faced with an ethical dilemma when analysing the observations of children. My ethics approval acknowledged that I was completing observations in centres and schools, however I had indicated on letters of introduction to teachers that my primary research purpose was to “follow the child”; did I have the ethical right to use data about teachers and teaching practices? Vygotsky’s (1978) socio-cultural theory suggests that actions and children in the social context of an early childhood centre are intertwined; if teacher responses were embedded within interactions with children, how could I *not* discuss teachers? For example, if a child approaches a teacher, it is surely valid to note the teacher response. Did it make a difference whether the teacher responded positively or negatively? Did it make a difference whether the teacher or child initiated? What if there was no interaction? If there were interactions, or lack of interactions, that were concerning, how could I claim to be an advocate for children if I didn’t report my findings? Surely, my ethical responsibilities for children require that I discuss social context and interaction? Because I had not explicitly advised teachers that I could be reporting their teaching, I concluded that I did not have a mandate from teachers to

include any specific negative anecdotes from my observations. However, I have reported some trends as they provide a starting point for further research and subsequent areas of advocacy for children. The instances are reported without contextual detail as protection for the teachers. The same dilemma was even more pronounced with respect to the children's peers as they had not consented to be research participants. Anecdotes of peer interaction have been reported, but with particular care to ensure anonymity; in any instance of peer or sibling interaction secondary pseudonyms have been used.

4.8 Summary

The methodology described in this chapter has demonstrated that a multiplicity of individual data-gathering approaches was necessary to gain broad meaning from the case studies. Being able to *construct* meanings and understandings, rather than simply *finding the* meaning, is fundamental to a constructivist paradigm.

The data-gathering phase of the study was a complex undertaking involving multiple participants, multiple sites and multiple methods of data collection within each of the 11 case studies. The key purpose of engaging in such a full and broad data-gathering phase was to maintain a holistic approach to understanding the children, their learning and key influences on them. The holistic approach meant that qualitative interpretation of data was important, for both qualitative and quantitative methods. This was illustrated with the example of Henry's response to the 'orbit' item on the *British Picture Vocabulary Scale*, reported earlier.

In the following chapters, the data is presented and interpreted within and across each of the case studies. That is, data from individual children is reported and considered, and overall across-case findings noted where relevant, as a result of reflection across the data collection. The first "data result" chapter will focus on literacy, followed by chapters that consider teaching, learning and expectations for the children. The case studies will inform suggestions for teaching, learning and policy within the conclusion; Stake (2000) notes that the purpose of case studies is to report on specifics, which may lead to generalisability.

Ethical Principle	Research Practice
Maintaining confidentiality (Cresswell, 1994)	Pseudonyms used in all summaries and reports; with identifying information avoided. Transcriber confidentiality form prepared (see <i>Appendix T</i>) though not required as I transcribed notes myself. As a researcher, I needed to exercise discretion that I did not use any information that was beyond the scope of the research (whether relating to family, early childhood or school contexts). I also needed to protect the anonymity of some personal information that was recounted by parents to explain the values of families and family circumstances (marriage, parenting, own childhood experiences, health, etc).
Use of research only for intended purposes (Cresswell, 1994).	Some of the participants in my study were offered an opportunity to “snowball” into a concurrent study on reading acquisition. For the families who participated in both research projects, there would have been an onerous duplication of testing and interview items. To avoid this, data were passed from my study to the precocious reading project. For obvious ethical reasons, this was done only after gaining approval from both the families and the Victoria University of Wellington ethics approval committee.
Maintain respect for “the personality, rights, wishes, beliefs, consent and freedom of the individual subject” (Bouma, 1996, p. 193).	Strongly linked with the philosophical positioning of this research. Although confidentiality was committed to, families requested that this be waived – offering use of photos, videos, etc. Their requests to meet with other parents were respected and parents offered the opportunity to attend an informal social.
Information will be provided to all participants and consent obtained in writing (Bouma, 1996). In addition verbal agreement will be verified before each data-gathering exercise.	In some situations (for example, where a teacher mislaid the forms but still wanted me to visit on a particular day) verbal consent was gained and the written consent retrospectively added.
Participants are free to withdraw involvement or consent at any time (Bouma, 1996). Special care must be taken when working with young children (Hughes, 2001). A clear ‘no’ must always be accepted as withdrawal of participation.	One of the children refused to read the parallel version of the <i>Neale Analysis of Reading</i> . Although strongly ‘encouraged’ his wishes were respected and he did not complete that assessment task. This particular instance led to a review of the acceptance criteria – being changed from <i>both</i> versions of the <i>Neale</i> to <i>either</i> version.
Research sessions need to be purposeful and well-organised to avoid ‘wasting people’s time’ (Bouma, 1996).	Visit times were adhered to, but with so many concurrent case studies, ensuring feedback and copies of observations were promptly given to families was a challenge.
Researchers need to be qualified and experienced to undertake the particular form of investigation proposed.	Prior to commencing this study, I had experience in survey methodology as a fieldworker for the Massey Special Education 2000 project in 1999 and 2000. Questionnaire was the dominant method of a Master’s project through Massey University relating to precocious readers (Margrain, 1998). Observation and test administration experience had been gained through relevant work experience and within the Master of Educational Psychology. My parenting and primary and early childhood teaching experience assisted with the important rapport-building aspects of the study.

Figure 19. Ethical principles and practice.

CHAPTER 5

BEING LITERATE

When he was interested in the solar system I got him books and a poster for his room. He knew Pluto was further away and colder. I didn't know if it was right or wrong – I had to look. Obscure facts, concepts – not something we've done a lot of. We know he takes things in – a good example - 6 months ago one of the funniest things. He said 'You've got to stop at a compulsory stop, but if you get to a give way sign you can keep going if nothing is coming'. He had been reading the road code in the map books' (O: Parent interview, p. 11).

Oscar's parents acknowledge a number of key issues for this chapter in the quote above. The children participating in my research had access to books and resources and had supportive parents. However, enormous numbers of children, whether they are early readers or not have supportive parents and early literacy experiences; such factors are necessary supports, but not sufficient to "create" a precocious reader. Oscar's parents also highlighted that they had responded to their *child's* interest, in this instance in the solar system; the interest was not driven by the parents, but rather the parents followed the child's lead. Thirdly, Oscar's parents asserted that Oscar had information that he had learned from books, certainly not from his parents; in fact, some of the information that Oscar knew at age 4 his parents did not know until they *subsequently* researched. The anecdote illustrates that being a reader meant Oscar had access to information, could extend his own interests, and was not reliant on adults to provide information for him.

In this chapter, information that specifically relates to the literacy abilities of the children is presented. The literacy abilities are important to present early in the thesis to illustrate the extent of the children's achievement and capability. The first part of the chapter reports reading competencies, including reading ability levels, comprehension, fluency, reading strategies, and receptive and expressive language, using the assessment measures described in chapter 4. Children's engagement with, and enjoyment of, reading is also discussed. In the second section of this chapter, literacy interactions in two particular contexts are discussed; with parents and within early childhood education. The third section considers literacy props and resources, particularly books, libraries and

computers. The final section of this chapter provides examples of children's writing. The *effect* of the literacy abilities for teaching and learning, with social interaction and expectations, will be discussed in subsequent chapters.

5.1 Reading Competencies

This section reports specific reading abilities of the children who participated in my research: reading ability levels, comprehension, fluency, reading strategies, and receptive and expressive language. Results are drawn from standardised assessments, observation of children, and interviews with parents and teachers, as discussed in chapter 4. Children's engagement with, and enjoyment of, reading are also discussed. It is important that the extent of children's literacy competencies is documented so there is evidence of precocious reading ability, to support identification and for provision of appropriate support. Assessment results, referred to throughout this chapter, are summarised in Table 5.

5.1.1 Reading ability level

The children participating in my study all had reading ability levels well in advance of their chronological age. Accuracy rates on the *Neale Analysis of Reading* varied from 6:08 age equivalency (for a child aged 4:07) to 10:08 (for a child aged 4:09). The most common level on the *Neale* that children reached was Level 3, an excerpt of which is recorded in *Appendix H*. Although some children stopped at Level 2, some read Level 4, and one child read Level 5 competently. Henry read the following Level 5 passage in 89 seconds, with 100 words read correctly out of the 117 total words. The seven errors are shown in bold, with the correct word in brackets afterward.

Among animals the fox has no **rivval** (rival) for cunning. **Aspychus** (suspicious) of man, who is its only natural enemy, it will, when **purshowed** (pursued), perform extraordinary feats, even alighting on the backs of sheep to divert its scent. Parent foxes share the responsibilities of cub-rearing. Through their hunting expeditions they acquire an uncanny knowledge of their surroundings which they use (Repeated: 'which they use') in an emergency. This is well illustrated by the story of a hunted fox which led its **pusers** (pursuers) to a **negited** (neglected) mine-shaft enclosed by a circular hedge. It appeared to surmount the barrier. The hounds followed headlong, only to fall into the **indirectly** (accumulated) water below. The fox, however, apparently on **familiar** (familiar) territory, had skirted the hedge and subsequently escaped. (H: Test Results)

Table 5
Literacy Abilities

Identifier	A	D	E	G	H	I	J	L	M	N	O
Gender	M	M	F	F	M	F	F	M	M	M	M
Entry Age	4:08	4:02	4:07	4:03	4:09	4:09	4:01	4:08	4:03	4:07	4:10
Neale Form 1 Accuracy	8:1	7:05	8:01	6:10	10:08	7:10	7:03	8:01	6:10	6:09	7:08
Neale Form 1 Comprehens'n	6:11	6:05	7:01	6:07	8:03	7:01	6:09	6:09	6:07	6:03	7:01
Neale Form 1 Rate	13.0	8:09	13.0+	7:07	12.02	>10.08	9.01	8.06	8:0	7:0	7:02
Neale Form 2 Accuracy	7:11	7:09	8:10	6:11	*	7:07	7:05	8:01	7:05	6:07	7:08
Neale Form 2 Comprehens'n	7:02	6:06	7:02	6:04	*	7:05	6:04	6:10	6:08	6:06	6:06
Neale Form 2 Rate	9:04	7:11	13.01+	9.0	*	10.03	12.03	8:0	7:05	7:03	8:08
Neale version used first	Form 2	Form 2	Form 2	Form 1	Form 1	Form 1	Form 1	Form 1	Form 2	Form 1	Form 2
Burt Word	8:01-8:07	7:05-7:11	8:03-8:07	6:08-7:02	10:04-10:10	7:06-8:00	7:09-8:03	8:00-8:06	6:11-7:05	6:11-7:05	8:10-9:04
BPVS age equivalent	6:01	4:07	5:05	4:07	8:04	6:08	5:02	5:07	6:02	5:11	5:08
BPVS Percentile	82	58	66	58	99	91	80	72	91	84	74

(Neale = Neale Analysis of Reading, Burt = Burt Word Reading Test, BPVS = Burt Word Reading Test)

* Refused to read the second assessment of the Neale Analysis of Reading

Henry's reading of the former passage, from the *Neale Analysis of Reading*, illustrates his competency in reading; although he made seven errors, he had an accuracy rate of 94% on this passage. Many of his errors were mispronunciations. There were many words in the passage that are not usually able to be read competently by a 4-year-old to able to competently read: "extraordinary", "responsibilities", "expeditions", "knowledge", "surroundings", "illustrated", "circular", "apparently", "territory" and "subsequently".

Reading ability levels on the *Burt Word Reading Test*, which involved reading words from a list rather than in a text, were consistent with the ability levels on the *Neale*. For example, Gillian, aged 4:03, obtained a reading age of 6:10 on the first form on the *Neale*, and 6:11 on the parallel form of the *Neale* two weeks later. She completed the *Burt* between each form of the *Neale*, with an equivalent age band of 6:08 to 7:02 years.

Age-equivalent band scores on the *Burt* ranged from 6:10 to 10:06 years of age (averaged). Examples of words that children could read from the *Burt* are shown in Figure 20. When I asked Lewis if he knew any other words (as the manual directs) he carefully searched then said, "Yes, New Zealand", pointing to the fine print "New Zealand Council for Educational Research" at the foot of the form (see *Appendix G*).

	Final 3 words read correctly	Examples of errors
A	Overwhelmed, fringe, trudging	Desteeny (destiny), Champion (champagne)
D	Journey, explorer, tongue	Bury (beware), Twist (twisted)
E	Encyclopaedia, trudging, urge	Pilsopher (philosopher), Re-Known (renown)
G	Luncheon, shelves, explorer	Emergy (emergency), Obitin (obtain)
H	Urge, binocular, economy	Termology (terminology), Gleyeserine (glycerine)
J	Shelves, terror, urge	Projeking (projecting), Underversal (universal)
L	Overwhelmed, universal, destiny	Scarsilly (scarcely), thory (theory)
M	Explorer, events, overwhelmed	Norusmat (nourishment), Scarecly (scarcely)
N	Luncheon, events, emergency	Shivers (shelves), Believe (belief)
O	Trudging, binocular, destiny	Autobography (autobiography), Contemptis (contemptuous)

Figure 20. *Burt Word Reading Test* results.

The consistency between reading assessment measures affirms that the children did not exclusively rely on contextual understanding when reading text. The *Burt Word Reading Test* results, being without context, appeared to confirm that they were able to draw on induced sublexical relations (see chapter 2).

5.1.2 Comprehension

Comprehension was assessed with the *Neale Analysis of Reading*, five standardised questions being asked after each passage read with less than 16 errors. After the level 5 passage *The Fox* (see section 5.1.1 of this thesis), the following questions were asked:

1. Who is the chief enemy of the fox?
2. Why does the hunted fox sometimes jump onto the back of a sheep?
3. Who provides food for the cubs?
4. How do foxes know the best hiding places in their surroundings?
5. To where did the fox in this story lead the hounds?
6. Was the mine working?
7. How did the fox avoid falling into the water?
8. Why were the hounds unable to see the danger?

Table 5 indicates that as a result of the children's responses to comprehension questions, their reading comprehension age was between 6:03 and 8:03. Responses from two children to a level 2 passage *Road Safety* are shown in Figure 21. These responses illustrate that the children were reading with understanding.

Comprehension scores were slightly below the reading ability ages for the children in my research, but still well above their chronological age. For example, Erin, aged 4:07, had a reading ability of 8:01 on the first version of the *Neale*, and a comprehension level of 7:01. Although her comprehension was a year below her reading ability, it was still 2½ years above her chronological age.

The comprehension scores are important because many teachers have expressed their concern about "allowing" young children to read beyond their chronological age in case

the children do not “really” understand what they are reading. The results from my research clearly show that *all* of the children had comprehension levels well above their chronological age. They could read, understood what they read, and wanted to read. There is no evidence to explain why they should be “held back” or denied access to ability-level literature, provided it is age-suitable (Hartley, 1996). Julia was reading plays and novels in her free time. Her mother knew that her daughter had understood them because of the way she could discuss issues from the characters’ perspectives. Aged 4:01, if Julia had been restricted to age-level reading material, she would have had to wait another year before being allowed to read emergent texts.

Question	Correct Response	Alistair, 4:08	Julia, 4:01
Where was Kim going?	To school.	To school (√)	To school (√)
Why did Kim stop?	She saw two children lying on the road. She saw an accident etc.	Saw they were in danger [who?] The children (√)	She wanted to help the kids who crashed. (√)
What happened to the bikes?	They had crashed (into each other).	They fell down (X)	They two crashed into each other. (√)
How do you think Kim felt?	Frightened, curious, anxious, scared etc.	Brave. (X)	Sad. (√)
What did Kim do?	She ran to help them.	See that no one was hurt. (√)	Helped them. (√)
Were the children hurt?	No.	No. (√)	No. (√)
What were the children really doing?	Taking part in a lesson. Making a television program.	Taking part in a road safely lesson. (√)	They were standing in a line. (X)
How did Kim find out what was happening?	She saw the cameras. The children pointed to the cameras. The children told her.	The children told her. (√)	Because he saw them. (X)
Score (out of 8)		6	6

NB: (√) denotes the response was scored as correct, (X) denotes responses that were scored as incorrect.

Figure 21. Comprehension responses of one reading passage from two children.

Parents were aware that comprehension was important. They were sure that their children had good understanding, and most parents enjoyed discussing books with their children.

We explain the meaning of words sometimes. Someone told me quite early on you have to watch comprehension, so we always make sure he understands (H: Parent interview, D2).

sort of hard to as they [early childhood teachers] were sending home books like 'this is a cat, this is a dog'. It was quite a fight to get her books at her level. They felt her comprehension was low, but I think she didn't know what they wanted. She would say "I don't know". She does understand – she can see from the picture even if she has not put the words into place. I have talked with her – she knows what the character is feeling etc. Also, she'll be sitting in bed laughing, getting that from the text, getting feelings, humour, understanding (G: Parent interview, p. 6).

5.1.3 Fluency

A key finding from the *Neale Analysis of Reading* was clear confirmation of the children's reading fluency. *Every* child who participated in the study had a fluency rate significantly above their chronological age, and most of the children had fluency rates above their reading ability rates. For example, Erin had a chronological age of 4:07, a reading ability level above 8 years on the two forms of the *Neale*, and a fluency rate above 13 years equivalency. Similarly, Julia had a chronological age of 4:01, reading ability around 7 ½ years and fluency rates of 9:01 and 12:03 on each forms of the *Neale*.

Children also read words on the *Burt* assessment rapidly, so their reading was rapid whether words were in text or in isolation. The children participating in my study did not appear to 'decode' in terms of breaking down a word into "chunks"; instead, they simply "said" the word, even when incorrect. An example is the word "philosopher". Many readers would break this word down to fi/lo/so/fer, but the way Oscar read this word was to rapidly say the 'whole word', he said 'polsofer'; although incorrect it was read smoothly. Erin similarly read "filsofer" and Henry read 'feelosofer' rapidly as single words, without sounding out in chunks.

Parents and teachers validated that their children normally read rapidly.

She's galloping ... gobbling up her book like eating very fast. I tell her it helps her to space, help her to breathe. (G: Parent interview, p. 7)

The teachers told me that he devoured books, for example reading all of their new library collection in a single morning. (M: field notes, p. 4)

Erin's mother commented that Erin didn't like her mother reading to her anymore, because she read too slowly, and Erin could read faster herself. The fluency of children's reading in my research supports other research on precocious readers (see chapter 2); fluency therefore is a key indicator of precocious reading.

5.1.4 Reading strategies

Analysis of errors from the *Neale* indicates that almost half of all errors were mispronunciations and a third of errors were substitutions (see Table 6). Few errors were refusals, additions or omissions, and none were reversals. The use of mispronunciations and substitutions fits with the fluency of children's reading; they rarely faltered.

Children's reading of passages on the *Neale* were analysed according to meaning, structure and visual cues, using *Reading Recovery* procedures (Clay, 1993a, see *Appendix I*). At "easy" and "difficult" levels, the most frequent cue source used at error and self correction was visual. Structure was the most frequent cue source at instructional level (90-95% accuracy), and the second most frequent cue source overall at error. Meaning and visual cues were evenly the most frequent cue source at instructional level, and meaning was the second most frequent cue source at self-correction (see Table 7 and Table 8).

Table 6

Analysis of Errors by Percentage of all Errors

	Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals
A	56	7.5	0	22.5	14.5	0
D	30	42.5	27	0	0	0
E	58.5	22	0	18	18	0
G	16	69	5	0	0	0
H	92.5	7.5	0	0	0	0
J	16.5	47	30.5	3	3	0
L	45	42	13.5	0	0	0
M	60.5	34	6	0	0	0
N	14.5	51.5	8	17.5	17.5	0
O	34	23.5	25	12	12	0
Total	42	35	11	7	7	0

Table 7

Error Cues: Meaning, Structure and Visual

<i>Percentage of all error cues</i>	<i>Easy level (>95% accuracy)</i>	<i>Instructional level (90-95% accuracy)</i>	<i>Difficult level (<90% accuracy)</i>	<i>Average of all levels</i>
Meaning cues	22	21	21.5	21.5
Structure cues	33	40	30	34
Visual cues	45	39	49.5	44.5

Self-corrections were made at all levels, on at least 40% of passages. On average, errors were self-corrected once every 2.8 errors at easy level, once every 3.5 errors at instructional level and once every 7.8 errors at difficult level. This analysis shows that children utilised a broad repertoire of reading strategies, self-monitoring and self-correction, and sustained the use of strategies at difficulty.

Table 8

Self-correction Cues: Meaning, Structure and Visual

<i>Percentage of all self-correction cues</i>	<i>Easy level (>95% accuracy)</i>	<i>Instructional level (90-95% accuracy)</i>	<i>Difficult level (<90% accuracy)</i>	<i>Average of all levels</i>
Meaning cues	31.5	38	32	34
Structure cues	31.5	25	25	27
Visual cues	37	38	43	39

Table 9

Self-correction Rate

<i>Percentage of all errors</i>	<i>Easy level (>95% accuracy)</i>	<i>Instructional level (90-95% accuracy)</i>	<i>Difficult level (<90% accuracy)</i>
Percentage of passages with self-corrections	50	40	87
Self-correction rate average (Errors + self-corrections, divided by errors)	1:2.8	1:3.5	1:7.8

5.1.5 Language

All of the children participating in the study scored above their chronological age on the *British Picture Vocabulary Scale*, which assesses receptive language. However, not all of the children scored significantly above their age; four children were within 1 year of their chronological age, and an additional six children within 2 years of their chronological age (see Table 5). Only one child scored exceptionally, achieving the 99th percentile. Henry was able to identify the correct pictures for the following words: “collision”, “resuscitation”, “hoisting”, “isolation”, “syringe”, “dilapidated”, “departing”, “quartet” and “feline”. In addition to the formal aspect of the assessment, children made anecdotal comments that affirmed their understanding. After correctly identifying “weasel”, Isla commented “like a meerkat”. Interest in dinosaurs influenced two children’s comments: after reading “swamp”, Henry commented “Brachiosaurus lived in a swamp”, and after reading “claw”, Nathan commented “like a raptor claw”¹⁹.

Examples of expressive language were extracted from observations of children at play, particularly in early childhood centres. A purpose influencing this approach was to see if the expressive language of the children participating in my research was remarkable in terms of vocabulary or sentence length. The information gathered does not appear to support this hypothesis; rather the children appeared to use language that matched their social context and peers (see *Appendix U*). When children did use advanced language skills they tended to be ostracised socially by their peers.

5.1.6 Passionate, engaged readers

Parents affirmed that the children read with fervour, enthusiasm and delight. Comments from Erin, Henry, Matthew and Oscar’s families illustrate their engagement, for example, referring to “love of reading” and “devouring books”. The following responses are examples of replies to the parent interview question “How does [your child] feel about reading?”

Father:	I think he loves it.
Mother:	He loves it so much that it comes before socializing.
Father:	Or eating.
Mother:	He reads first at kindy, then he plays.

¹⁹ Presumably the dinosaur species ‘Velociraptor’

Father: He's obsessed with it – when he's satisfied, then he plays. (H: Parent interview, p. 9).

Really interested, feels confident in himself that he's able to read. Feels capable, really happy he's able to read – maybe a sense of achievement (M: Parent interview, p. 9).

She loves it, really enjoys it. By wanting to read, by doing it. We see her laughing in bed. (G: Parent interview, p. 9)

She loves reading. She's continually got her nose in a book. (E: Parent interview, p. 7)

Father: He loves it

Mother: Yep. He's seldom seen without a book. (O: Parent interview, p. 9)

He loves it. (N: Parent interview, p. 8).

Parents also referred to their children's engagement with reading at other points throughout the interviews. They linked this to a desire and 'thirst' for learning.

He enjoys it a heck of a lot. There is no way he'd do this much if he didn't enjoy it. It's just something he does. Wandering around the supermarket shelves reading etcetera. (A: Parent interview, p. 10)

At the [bookshop], [he would read for] 2 ½ hours there. When I was there for 3 hours he'd only get bored in the last half hour. (Henry, Parent Interview, p. 6)

The teachers told me that he devoured books, for example reading all of their new library collection in a single morning. (M: Fieldnotes, p. 4)

He's seldom seen without a book ... he's always got a book. (O: Parent Interview, p. 9)

The repeated references to children's enjoyment of reading are consistent with previous research on precocious reading and affirm that reading was the children's *choice*, rather than something imposed on them.

5.1.7 *Learning to read*

Several parents of children highlighted a specific focus on self-teaching. Credit was given to the participating children themselves as being their own lead teachers. When asked "Who is it, if anyone, who has mainly taught your child?" Henry's parents stated, "*Henry*" (H: Parent interview, p7).

She taught herself, that's the amazing thing. (G: Parent interview, p. 6)

Reading – she sussed that one out. (E: Parent interview, p. 5)

Mostly he's a self-starter – we try to keep up with him. (H: Parent interview, p. 7)

Most parents referred to their children's implicit and intuitive understandings as "spontaneous learning". Sometimes parents referred to children "teaching themselves", but clarified that "it just happened" or it was "natural". It therefore appeared that children's learning was not always taught, not always metacognitive, and sometimes spontaneous:

A little concerned at the fuss everyone was making over his reading – it is just something that happened and no big deal . . . spontaneous. (A: field notes, p. 1)

Other parents affirmed that the learning "just happened", rather than appearing to progress through stages. David's parents commented that he had learnt to read "overnight". One possible reason for this impression is that the children had flashes of understanding and awareness – "like a switch turned on". Another possibility is that the children were progressing so rapidly that it was impossible to tell if they were passing through stages or leaping them.

One day he couldn't read, the next he could. (D: field notes, p. 3)

It may be compressed in my memory, but it seemed to go quickly from knowing names and knowing sounds to being able to attempt words – all within a span of 3 months. (H: parent interview, p. 6)

She's one of those kids that things happen so rapidly through the stages that you just about miss it. (E: Parent interview, p. 5)

The rapidity with which the children learned to read differs from most children's literacy learning experience and is a key point to acknowledge. The assertion that children learnt to read without direct teaching from adults (either parents or teachers) is critical to highlight before the next section, which discusses literacy interactions between adults and children. Parents acknowledged that experiences and support are important, but factors that are generated from the *child* are most influential in the development of precocious reading ability.

5.2 Literacy Interactions

This section focuses on reading experiences that happen *between* adults and children. Two key groups of adults are considered: parents and early childhood teachers. Parents used the teaching techniques of modelling and interactive storybook reading. Some early childhood teachers in this study included reading "lessons" in their programme,

although such formal approaches to literacy are not used in most New Zealand early childhood centres (Cullen, 2002; Hamer, 2002; Hamer & Adams, 2002; McLaughlan-Smith & Shuker, 2002). School approaches to literacy are not discussed in this section for two reasons. Firstly, only four schools were visited and data is limited from this phase of the research. Secondly, some school-based literacy teaching strategies are discussed within chapter 6 in terms of the teaching focus.

5.2.1 Parents as readers

General literature on emergent literacy and reading acquisition highlights the importance of storybook reading (that is, reading *to* children: see Chapter 2). For the children in this study, these experiences often began early.

Reading [to her] from 3 to 4 months – used to do it every day. (J: Parent Interview, p. 3)

Isla was first read to when she was 'a few weeks old. Exposed them [to books] from the beginning. Reading to her as soon as she could focus. Showed her pictures as soon as she showed an interest, as soon as her eyes focused. (I: Parent Interview, p. 6).

The *quality* of the interaction and feedback surrounding storybook reading is critical. While my study does not have empirical data that measures the quality of storybook reading, the way that parents reported reading to, and with, their children was clearly responsive and extensive. Parents also reported that the children quickly became the ones to initiate storybook reading by asking for books or bringing books to adults.

I love kids' books. I remember saying at ante-natal classes that one of the great things about having kids is that you get to read kids books. I was reading to [his sister] Nicole. By 18 months, if I sat down he'd be there with a book. Sometimes 3.5 hours per day – dropped off later. I'd do the housework by choice as it became too much. Not my choice – he demanded to be read to. It wasn't coaching – not 'what's that letter' – just reading. (A: Parent interview, p. 3)

Most parents reported that they enjoyed reading, and their children would have observed them modelling reading on many occasions. The importance of parent modeling of reading is consistently noted in emergent reading literature (Jackson & Adams, 2002; Sonnenschein, Brody & Munsterman, 1996). Because MacNaughton and Willims (2004) describe modeling as a potentially effective teaching technique, this section links to chapter 6 *Being taught*. Figure 22 includes some quotes from parent interviews that describe their own reading behaviour.

Parents as readers		
<i>Alistair</i>	<i>Mother:</i> I've always read a huge amount – eclectic ... currently doing university [language]. [His father] is not a reader at all.	A: Parent interview, p. 1
<i>David</i>	<i>Mother:</i> Reading is our family thing ... [David's father] is an avid reader ... I am an avid reader ... I buy books, have lots ... I get information and research over the Internet, a lot of time in front of the computer. <i>Father:</i> I grew up surrounded by books. My dad was a reader and I've always been a reader.	D: Parent interview, p. 2
<i>Gillian</i>	<i>Mother:</i> I'm an avid reader – I love reading ... Novels and autobiographies ... If I get a book I really like I find it hard to put it down. [Her father] tends to be science fiction or thrillers ... If he finds a book he likes he will read it a number of times. He gets locked on the same ones.	G: Parent interview, p. 2
<i>Julia</i>	<i>Mother:</i> In the evening, we all sit and read. Everyone does a lot of reading.	J: Parent interview, p. 3 & p. 9
<i>Oscar</i>	<i>Father:</i> I read a lot, always have a book on the go. Novels – Tom Clancy, Wilbur Smith, the paper twice a day, top 10 (books), National Geographic ... I read a lot at the dentist, doctor. I catch the train to work and read on it. I read at the gym (book propped on the cycle stand).	O: Parent interview, p. 2

Figure 22. Parents as readers.

5.2.2 Early childhood education

Observations of children in their early childhood settings were reviewed for book-reading interactions between teachers and children. There were few such interactions observed or recorded within approximately 25 hours of observational data in the early childhood settings, five instances of teachers reading to children, and three instances when teachers formally “taught” reading.

Of the five instances of teachers reading to children (observed within 25 hours of early childhood observation) three were to whole centre groups of children, at whole group “mat-time”, using the following books: *My Brown Bear Barney*, *The Little Red Hen* and *Where's My Teddy?* In addition, one teacher was observed reading to an individual child, and a teacher was observed asking a group of children if they would like a story.

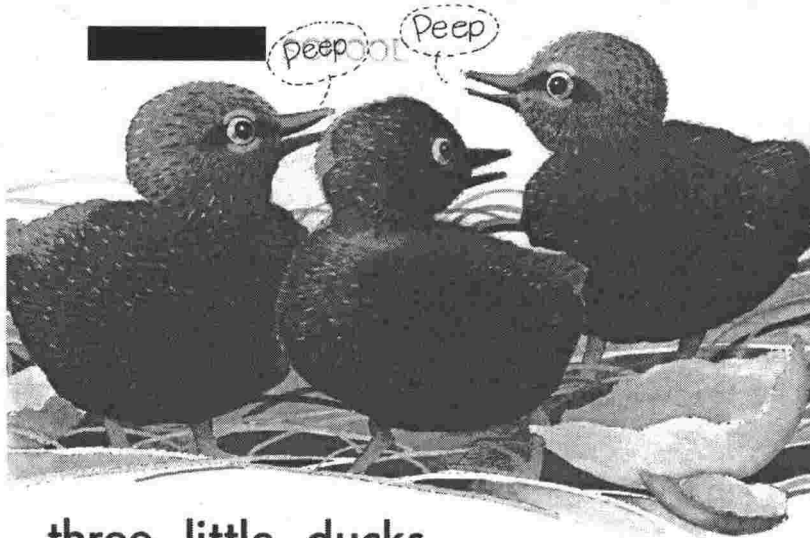
There were three observations of children having reading “lessons”. In general, the New Zealand early childhood sector has a non-formal approach to literacy, for example, focusing on phonological development through rhyme and song rather than formal teaching of phonics or formal reading (Cullen, 2001a, 2001b; Foote, Smith, & Ellis, 2004). Reading lessons were part of the private preschool and Montessori preschool programmes, but not of the kindergarten programmes. Several of the parents who had chosen formal preschools for children participating in my study did so because their child was *already reading*, and they believed that a more academic programme would provide helpful extension for their children. However, it is important to note that the text level of books used in the observed reading “lessons” was *significantly* below the reading ability of the children.

The interaction recorded below is a conversation following the child’s reading of an emergent (beginning) level book *Spider Paint*. In the book, the spider has only primary colours available, but mixes these to create secondary colours. The teacher quizzed the child (who had a reading age of over 8 years) on how to create secondary colours. The child’s “don’t know” reply may have been more likely to be an indication that he couldn’t be bothered answering than that he didn’t remember the result of mixing red and yellow (especially since he knew the colours that make purple). Other “teaching” points included the name of the book, one-to-one finger pointing and clarifying which was the big or little spider.

- ECE teacher: (Holds up book called *Spider Paint*). What’s this one called?
 Child: *Spider Paint*.
 ECE Teacher: *Spider Paint* (she points to the words as he reads aloud).
 Which is the big one and which is the little one?
 Child: (points to the big one and then to the little one)
 ECE Teacher: Do it properly. Which is the big one?
 Child: (points to the big one again)
 ECE Teacher: And this is the –
 Child: Little one.
 ECE teacher: [*talking about primary colours*] blue, yellow, red, but no green.
 Child: Because they mixed it together.
 ECE teacher: So blue and yellow make . . .
 Child: (no reply)
 ECE Teacher: How do you make orange?
 Child: Don’t know
 ECE Teacher: I think its yellow and red. What about purple?
 Child: Blue and red.

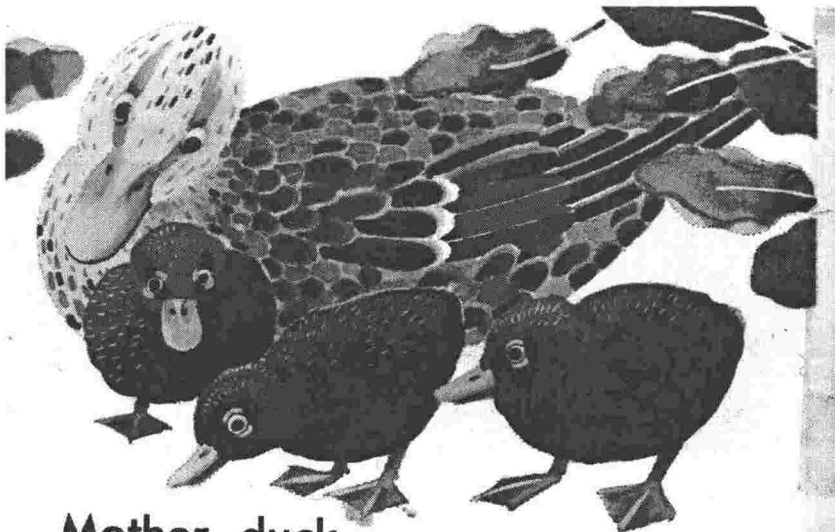
My initial presumption was that teachers were loath to “push” children too far, and that they deliberately chose books closer to the child’s chronological level. However, when a teacher presented an emergent level book *Three Little Ducks* (Melsner & Cowley, 1980) from the *Story Box* series to a child in this study, she said that the book is “a hard one today”. Since the teacher had recommended this child to me for inclusion in my study, telling me that the child could read well, the teacher must have realised that the book was not difficult for this child. Perhaps this example illustrates a teacher defining for a child what books are *supposed* to be hard; in other words, what they should expect to be doing as a 4-year-old. In other words, *Three Little Ducks* was “a hard one” for other 4-year-olds. Figure 23 shows part of the so-called “hard” *Three Little Ducks* text that the child, with a reading age of over 8 years, had a reading “lesson” on.

Parents did not consider that the early childhood reading “lessons” were “teaching” their precociously reading children to read; they already could read. One parent commented that her daughter found the books frustratingly easy, saying, “I don’t think she thinks much of the books the preschool gives her to bring home ... she’d rather read [her older brother]’s books. Another parent commented that since I had assessed her son’s reading and visited the early childhood centre, her son had been bringing home “harder” books – “not hard for [him], but harder than before”.



three little ducks
came out of the eggs.

5



Mother duck
looked after them.

6

Figure 23. Three Little Ducks.

5.3 Literacy Props and Artifacts

It must come as no surprise that there was substantial information reported about books in a study that explored early reading. The children and families involved with this study would agree with Hamer and Adams (2003, p. 63) that “not only do books provide a medium through which the comprehension and decoding aspects of reading can be supported but *reading books* is an enjoyable and comforting activity that also plays a significant role in developing children’s motivation to read [*italics added*]”.

Children and families capitalised on ‘environmental print’ opportunities throughout the community; community settings include libraries, marae, church groups, social groups, and so on. Moje (2000) reminds us that people belong to many different, but sometimes overlapping, communities, and Wenger (1998) highlights the supportive context of “communities of practice”. Props and artifacts within these everyday communities provided opportunities to read and learn; examples from my study included reading train timetables, the *Yellow Pages* business telephone directory, supermarket packets, car license plates (at 2 years), and street names (at 3 years).

There have been concerns within the early childhood sector that the early use of formal literacy experiences may be directive, developmentally inappropriate and lack meaning (Cullen, 2001a). However, parents described that they used resources that developed phonemic awareness because of the playful way that they were used. Julia’s mother noted that her daughter loved a book that included onomatopoeia because she enjoyed playing with rhyme: “She makes it a funny thing – eg. ‘talk walk’ doesn’t make sense, she enjoys this” (J: Parent interview, p. 5). At 25 months of age, Nathan enjoyed playing with magnetic alphabet letters on the refrigerator. Henry was also curious about letters at a young age: ‘At 21 months he was looking at letters – ‘what’s that?’” (H: Parent interview p. 5); he also enjoyed the repetitive play of words and sounds.

Figure 24 provides an example of a contextually appropriate early literacy experience, the figure shows one of the children intently gazing at print on a washing powder packet as an infant.

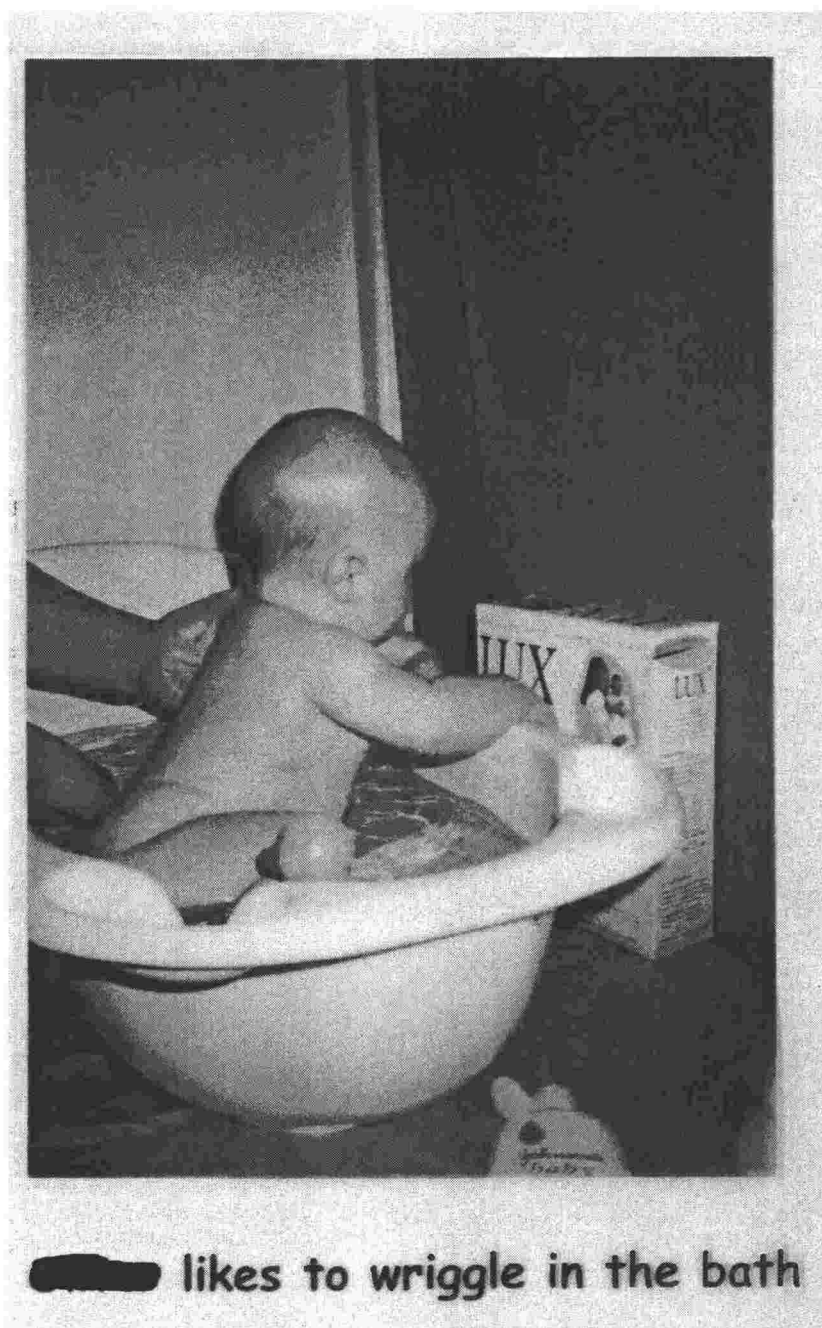


Figure 24. Infant's print experience.

A refinement of Wartofsky's mediating artifacts hierarchy (Engeström, as cited in Collins, Shukla, & Redmiles, 2002) identified four classes of artifact: *what*, *how*, *why* and *where-to*. Books and computers are particular artifacts that can not only provide a means of achievement (*what*) and contribute to understanding *how* to achieve, but can also motivate achievement (*why*) and motivate evolution (*where-to*) (see Figure 25). Other artifacts in this study would include Henry's washing powder packet, and many everyday items from print-rich home environments.

Artifact class	Primary characteristic	Examples
What	Contributes a <i>means</i> of achievement	Alphabet activities, books
How	Contributes to <i>understanding how</i> to achieve	Writing, books, toys
Why	<i>Motivates</i> achievement	Computers, books, toys
Where-to	Motivates <i>evolution</i>	Computers, books, language

Figure 25. Classes of artifact.

5.3.1 Books and other reading material

All of the children had plentiful supply of books in their home, and books were part of their lives from an early age:

Was way into books by [age] 1. There were always books for him. Lots of baby books, [his sister]'s books. (D: Parent interview, p. 6)

She had a little board book – present as a baby – we showed her right from the word go ... Books were part of her little toy box. She had a book bath toy. She'd suck it. (G: Parent interview, p. 6)

We have a bookcase full of books we have been given – we're lucky. He likes 'fresh meat' so we also use the school library and [City] public library. (A: Parent interview p. 8)

When he was interested in the solar system, I got him books and a poster for his room. (N: Parent interview, B5)

The variety of books referred to by parents included storybooks, non-fiction, cookery books, dictionaries and telephone books (see Figure 26). There was only one report of magazines or comics read by children, with a parent stating that their child "Occasionally, [reads] a *Bob the Builder* or *Winnie the Pooh* magazine from the supermarket, but I don't really approve of them" (N: Parent interview, p. 9). The only

physical resource, other than books, that was reported substantially was computers. The standard of books appeared to vary greatly, and suggests that the availability of books was a key factor, not necessarily quality [although I do advocate for quality children's literature!]. Alistair's mother was perplexed that, even though they had a variety of other books and they visited the library weekly, he enjoyed "*Little Golden Books*, his Dad's old ones, even though they are full of erroneous information and out of date" (A: Parent interview, p. 7). Media influenced some families: Matthew's mother mentioned that she read in the newspaper which children's books had won awards and often selected from these.

Another parent noted, "You have to be careful; there is a lot of rubbish out there". Lewis read books from a television show *Pokemon* and Nathan's family said, "We're reading James and the Giant Peach at the moment, not the full Roald Dahl one, but one from the movie" (N: Parent interview, p. 8).

5.3.2 Libraries

Parents reported regular use of community libraries, reflecting the earlier research of Durkin (1966) and Clark (1982). Some participants were recruited as a result of flyers posted in public libraries. Libraries are important because they provide reading material to children and families without charge, countering any suggestion that precocious readers are able to read early because of privileged access.

We get stacks of books. The library lady said, 'do you realise you have 30 books out?' . . . Have always been to the library. I think that's very important. (G: Parent interview, p. 10)

At the library regularly at age 2 ½. (I: Field notes)

I take him to the library, and he chooses his own [books]. (O: Parent interview, p. 10)

In the holidays I take him to the library. I go through the shelves and pull books out to show them – [he says] 'want that, no don't want that'. I don't know what the pattern is. They bring home 10 books each each time we go to the library. They read them all, every night. They swap their books [with each other] then exchange them [at the library]. (D: Parent interview, p. 10)

First reading (6 months-2 yrs)	Current reading at age 4
<u>Genre:</u> “Flap books” Word books Alphabet books Number books Books about shapes, colours, opposites	<u>Genre:</u> Encyclopaedia Atlas Non fiction – especially science (machines volcanoes, space, dinosaurs, animals) Maze books, puzzle books Books about people
<u>Authors:</u> Dr Seuss Mercer Mayer	<u>Authors:</u> Lynley Dodd Sandra Boynton Mercer Mayer Dr Seuss Richard Scarry
<u>Series:</u> Mercer Mayer Little Critter books Spot Arthur ‘I spy’ board books	<u>Series:</u> School journals Usborne Pocket Science Blue Bananas Thomas the Tank Engine Blue Bananas The Little Yellow Digger Aussie Nibbles Hairy Maclary series Bob the Builder Mercer Mayer Little Critters
<u>Specific Books:</u> <i>My First Word Book</i> <i>I Like Spaghetti</i> <i>Go Dog Go</i> <i>Brown Bear</i> <i>Hop on Pop</i> <i>There’s a wocket in my pocket</i> <i>Mr Brown can Moo, how about you?</i> <i>The Foot Book</i> <i>1 Bear, 2 Bear</i> <i>Owl Babies by Martin Waddell</i> <i>Winnie the Pooh ABC</i> <i>Winnie the Pooh 123</i> <i>Thomas and a dragon</i> <i>Treasure Hunt Things to Eat.</i> <i>Peep Oh!</i> <i>Green Eggs and Ham</i> <i>Inside, Outside, Upside Down</i> <i>Spot</i>	<u>Specific Books:</u> <i>Dinosaur Day</i> by Stephen Bowbett <i>Dilly and the Big Kids</i> by Tony Bradman <i>JJ Rabbit and the Monster</i> by Nicole Moon <i>The Most Amazing Dinosaur</i> by James Stevenson <i>Henry and Mudge and the Flower Sea</i> by Cynthia Rylant <i>Spider and Buffalo</i> by Barbara McGurie <i>The Fantastic Maze Book</i> by Juliet and Charles Snape <i>The Burglar’s Breakfast</i> by Felicity Everett <i>Noah’s Ark</i> by George Adams <i>Bible Story Book</i> <i>My Treasury of Fairy Tales</i> <i>My First Book of Knowledge</i> <i>Hemi’s House</i> <i>Story of Jesus</i> (Usborne) <i>Sydney and the Sea Monster</i> <i>Big Bros Coming.</i> <i>Hairy Maclary from Donaldson’s Dairy</i> and other books by Lynley Dodd <i>The House at Pooh Corner</i> by AA Milne

Figure 26. Examples of early and current reading material.

New Zealand libraries lend more than books; also videos, posters and puzzles. Many libraries also offer story time and art and craft sessions.

Weekly library story time sessions plus holiday story and craft sessions at same library. Chooses books, videos, CD ROMs, book and tape sets – sits on floor and reads books she chooses from library boxes before [selecting] at least 9 books. (I: Correspondence)

One family member described that she had “appealed to the library to help” due to problems at her daughter’s early childhood centre. At the centre, when the teacher had read a story at “mat time”, the child had stood up to be able to read the fine print of the book. The teachers thought she was misbehaving and said that if she did not sit still she would be sent away at story time. The parent therefore asked the librarian if she could read stories to a group of children to help her child to practice sitting still and to learn not to expect to read the text herself; the family also practised “mat time behaviour” at home. The parents and librarian worked together on this goal because it would help the child meet the teachers’ expectations, not because they agreed with the situation. In a similar example, a librarian worked with a child on scissor skills. In these examples, the parents accorded power to the teachers, and the parents made strong efforts to ensure that the teachers’ needs were met. Neither the parents nor the librarians believed that the children should need to be drilled at sitting on the mat or using scissors, but avoiding instances of teachers being unhappy became more “important.” On several occasions, parents indicated that if they kept the teachers happy their children would benefit.

5.3.3 *Computers*

I had not planned to gather data on computer use within the study. Prior to the study, if I had been asked about the role of computers in early childhood and even early primary settings, I would have suggested that benefits were outweighed by disadvantages. Shade and Davis (1997, p. 92) suggest that critique of computers in early childhood education is due to five ‘misunderstandings and misconceptions’:

- children are ‘hurried’ to maturity
- children are deprived of valuable social interactions
- learning is programmed and externally structured

- traditional activities such as painting, reading and large-motor movement are displaced
- Piaget's theory suggests that children under 7 years of age, in preoperational and concrete operational stages, learn best through physical manipulation of materials with their hands and not through symbolically presented computers.

I would add to this list the reality and frustration of set-up and support systems, (for example, dealing with computer "crashes"), managing equitable access ("I want a turn!"), maintenance and software costs, and constraints on teacher time.

It was the unexpected data from this study, the *repeated* references to computers and assertion of how fundamental they had been to the children's learning that led me to reflect on the importance of computers. *After* considering the research data, I read Shade and Watson's (1990) assertion that the question of computer appropriateness is no longer a question for debate. Within this study, young children operated computers, selected and navigated software, discussed computer activities meaningfully, and worked in co-operative dyads. Children found computer activities to be meaningful, purposeful and interesting: Shade and Davis (1997) state, "To a child, the computer graphics that can be picked up with a mouse-driven cursor, moved, stretched, and dropped are as real as any physical object that can be touched with the fingers" (p. 93).

Appendix V collates just some of the many comments that provide evidence that *all* of the children in this study had early experience with computers. What makes the data particularly significant is that it was not directly solicited; I had not asked *any* interview questions about computers, but the parents strongly linked computer use with their children's early reading ability. They noted that using the computer necessarily *required* literacy skills, and that using the computer also supported literacy development:

We have a lot of computer games ... I think he's learned a *lot* off the computer – basic maths, reading, addition. (D: Field notes)

CDs are just like books ... I truly believe the computer played a huge role in his learning to read.

He can shut down and change CDs, has good mouse skills ... there's lots of reading that he picked up. (N: Parent interview, p. 3)

Apart from computer hacking, reading is obviously a talent. Maths – he's quite logical with lots of the stuff he does. He loves getting stuck into the computer but that's reading and maths – the computer is the two of them. (O: Parent interview, p. 4)

He doesn't want to go (to school when he turns 5) ... he'd rather stay home and play on the computer. (O: Parent interview, p. 13)

I think I underestimate the amount he reads on the computer. (A: Parent interview, p. 8).

Computer use was predominantly reported from home settings, but children were also observed using computers in two early childhood settings and one new entrant classroom. One of the children told me, several months after he began school, that he preferred preschool to school. When I asked why, he told me it was because there were three computers at preschool and only two in his new entrant classroom. However, the interactions that I observed involving teachers, children and computers tended to focus on directive or technical processes such as set-up and turn-taking, although children may have appreciated specific information without unnecessary dialogue.

Child:	(reading from the screen) Press a key to continue.
Teacher:	Yes, so press one of those . . . and again . . . OK, just leave it . . .
Child:	Submitting file . . .
Teacher:	There you go – you press 'OK'
Child:	No safe mode
Teacher:	No safe mode on there – so go to MSC . . . it's taking a while to think this morning, because it's a Monday morning.

Information from parents suggests that children enjoyed using computers at home, and did not find them tedious in that setting. In an “information age” of rapid change and corporatisation this (McInerney & McInerney, 2002) technology experiences for children can still be valid, purposeful and enjoyable.

5.4 Being a Writer

Resources for writing and drawing were available in children's homes as well as the obvious provisions in educational settings. David's family, for example, noted that they had available, “Blackboard, whiteboard, all that stuff, coloured pencils, tons of paper, computer, Internet, [and] videos” (D: Parent interview, p. 7). For most children, writing was part of varied early childhood experiences that supported the holistic child with

physical, intellectual, affective and social and linguistic skills. When I visited Henry he showed me chalked writing in his back yard, and I was given a photograph of a several metre long carpentry train that he had made, which was covered in words that he had written with a marker pen.

Valerie: What activities does Henry like doing with his Mum, Dad and friends?

Father: Playing with toy cars and trains. Climbing all over me. Bouncing on the trampoline with me. Drawing roads on the concrete with chalk. Helping me work on things in the garage, or getting in the way. Playing card games, board games, correcting my spelling on the computer.

Mother: Just communicating, silly rhymes like Henry, smenry, wenry – Henry's moose, on the loose, cooked his goose. Sometimes he adds to the rhymes, sometimes quite clever and sometimes nonsense. And music sometimes. [His father] has written songs for Henry from when he was very small ... [his father would] settle him and sing songs before bed. I'd do stories and they'd go off and do music. ... art, painting, drawing, reading. We've spent quite a lot of time on the beach together. Swimming. (H: Parent interview, p. 2)

Other parents also noted that their children particularly enjoyed learning to write; Oscar's mother said he is "Really into writing at the moment" (O: field notes, p. 1). For children who could already read well, but enjoyed a challenge, writing is an area in which precocious readers could be literacy apprentices (Rogoff, 1990). Julia's mother explained: "She enjoys story writing. She saw other children doing this when she started school and [she] wanted to do that too" (J: Parent interview, p. 5). Unlike reading, which was learned "naturally", the children in my research wanted support and 'teaching' with writing, from handwriting and letter formation through to spelling. None of the children had written skills that matched their reading skills; this was not an issue in early childhood, but sometimes became an issue as the children began school.

He doesn't ask for help with reading but sometimes with writing. (A: Parent interview, p. 5)

His perfectionist nature comes out with his art work. He has an idea in his head of exactly what he wants to portray, but it might not come out.' When he had a school visit his teacher said to him that she had heard he was a good reader and asked if he could also write. 'He told the New Entrant teacher he was not very good at that. He has an idea of how he wants it to look like – like our writing or in books. He can't do the letters that small and he's not happy about that, but he can write every letter. (H: Parent interview, p. 6).

One child, in the first few weeks of beginning school wrote the following chapter of an ongoing story:


Chapter II
Snake

Today was Monday and Pooh was at Owl's place for a walk when it started to rain and a snake ...
(see Figure 27).

CHAPTER II
SNAKE!

5.2.01

TODAY WAS MONDAY AND POOH
WAS AT OWL'S PLACE
FOR A WALK.
WHEN IT STARTED TO
RAIN
AND A SNAKE CAME



The size of your letters are much
bigger and it's easier for me to
read. I can't wait for Chapter III

Figure 27. Snake story.

The child's teacher commented on letter formation in her feedback, saying, "the size of your letters are much bigger and it's easier for me to read. I can't wait for chapter III."

Another child, also in the first month at school, wrote the following two stories (see Figure 28 and 29):

The walk was very boring and I didn't like the walk.

I ate lots of food at the picnic. I like the games ... we were playing. One day I nearly got on to level 2 on the car computer.

Feedback from the teacher on this child's work focused on spelling and capitalisation.

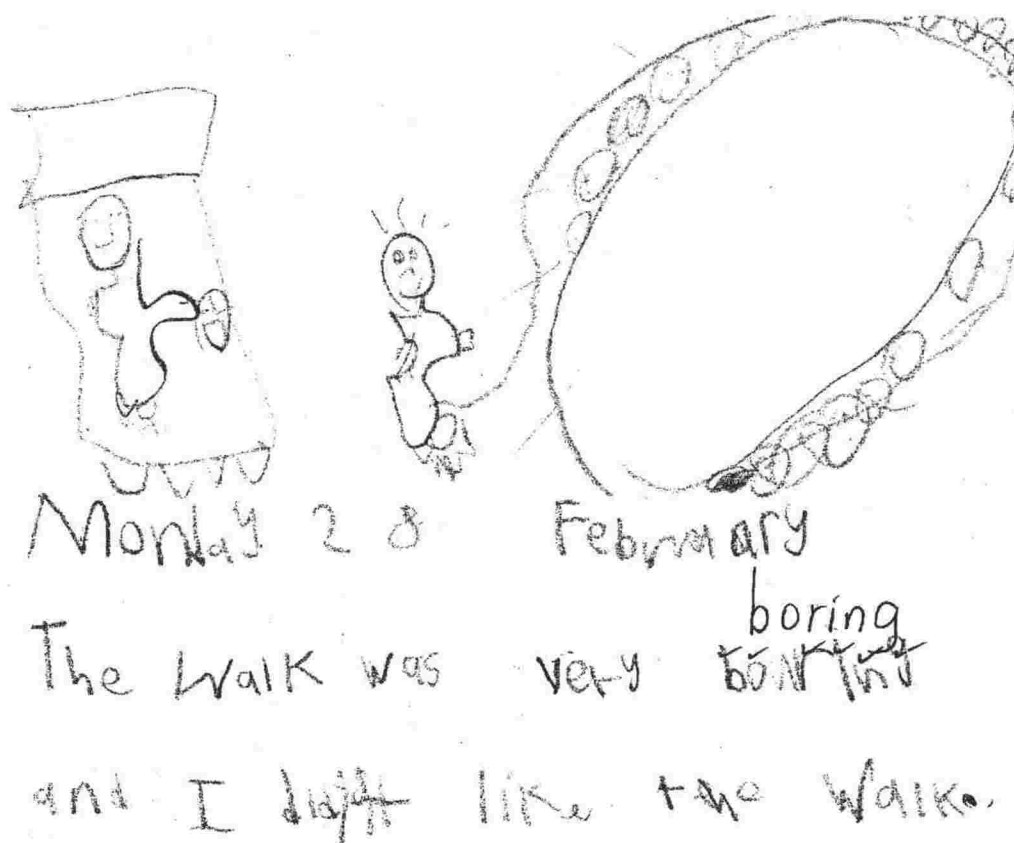
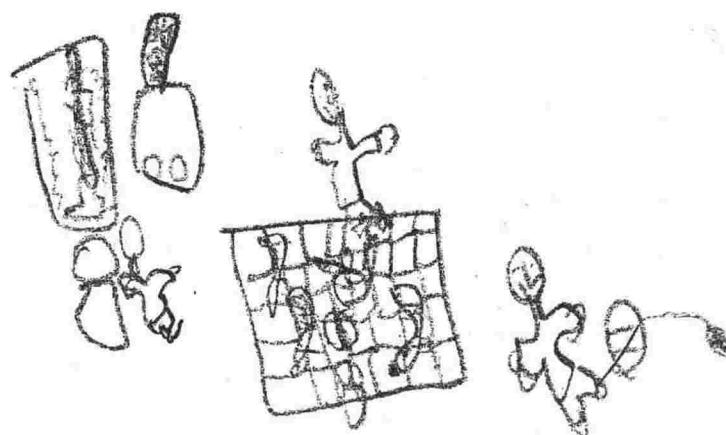


Figure 28. Boring walk story.



Monday 25 February

I

ate lots of food at the

Picnic. I picked the ^{up} Jones. We ^{were} ~~were~~

Prizing. One day I ^{nearly} ~~kept~~ got on

to level 2 on the car computer



Figure 29. Picnic games story.

Art and drawing provide important literacy experiences for young children in terms of their control of tools, expression of ideas, creativity, aesthetic appreciation and social interaction. Henry was passionate about maps around the age of 4 years and created numerous books combining extended, imaginative stories and complex maps (see Figure 31). Writing is also functional: children wrote lists, left notes, provided labels and made

corrections. In one early childhood centre, the teachers had displayed pictures of farm animals, and added labels: “moo moo” and “baa baa”. Henry had added “correct” labels: “8 cows”, “7 sheep”, “5 pigs” and “4 roosters” (see Figure 30). This incident illustrates that the level of expectations for children held by some teachers was far below the cognitive ability many children could actually operate at (see chapter 8).

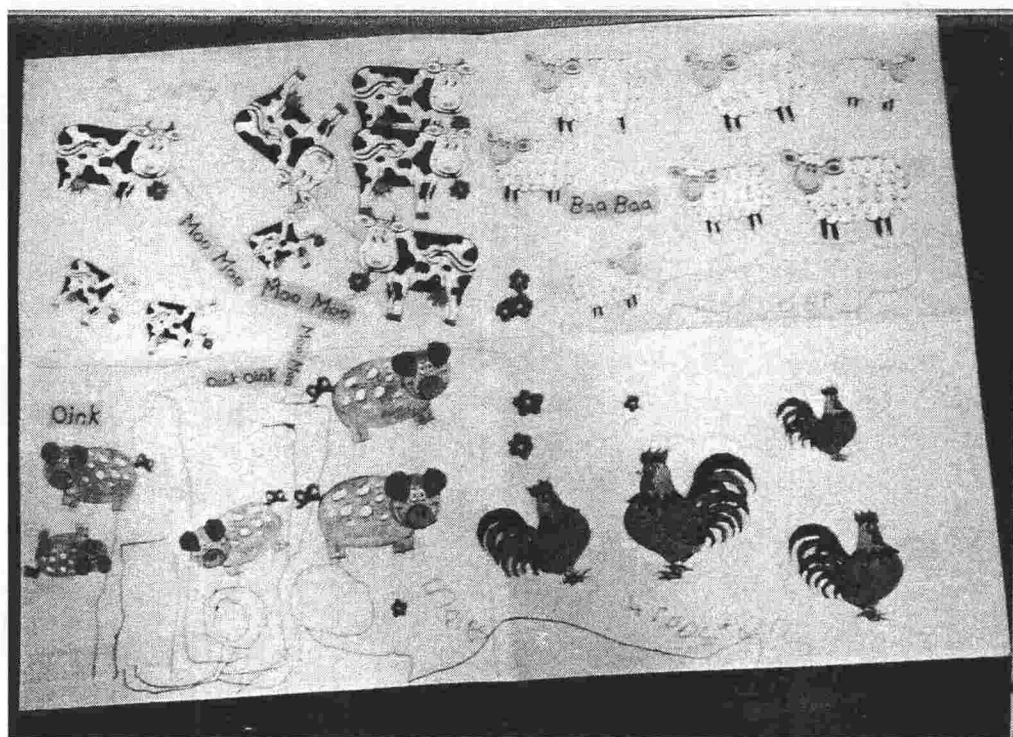


Figure 30. Farm captions .

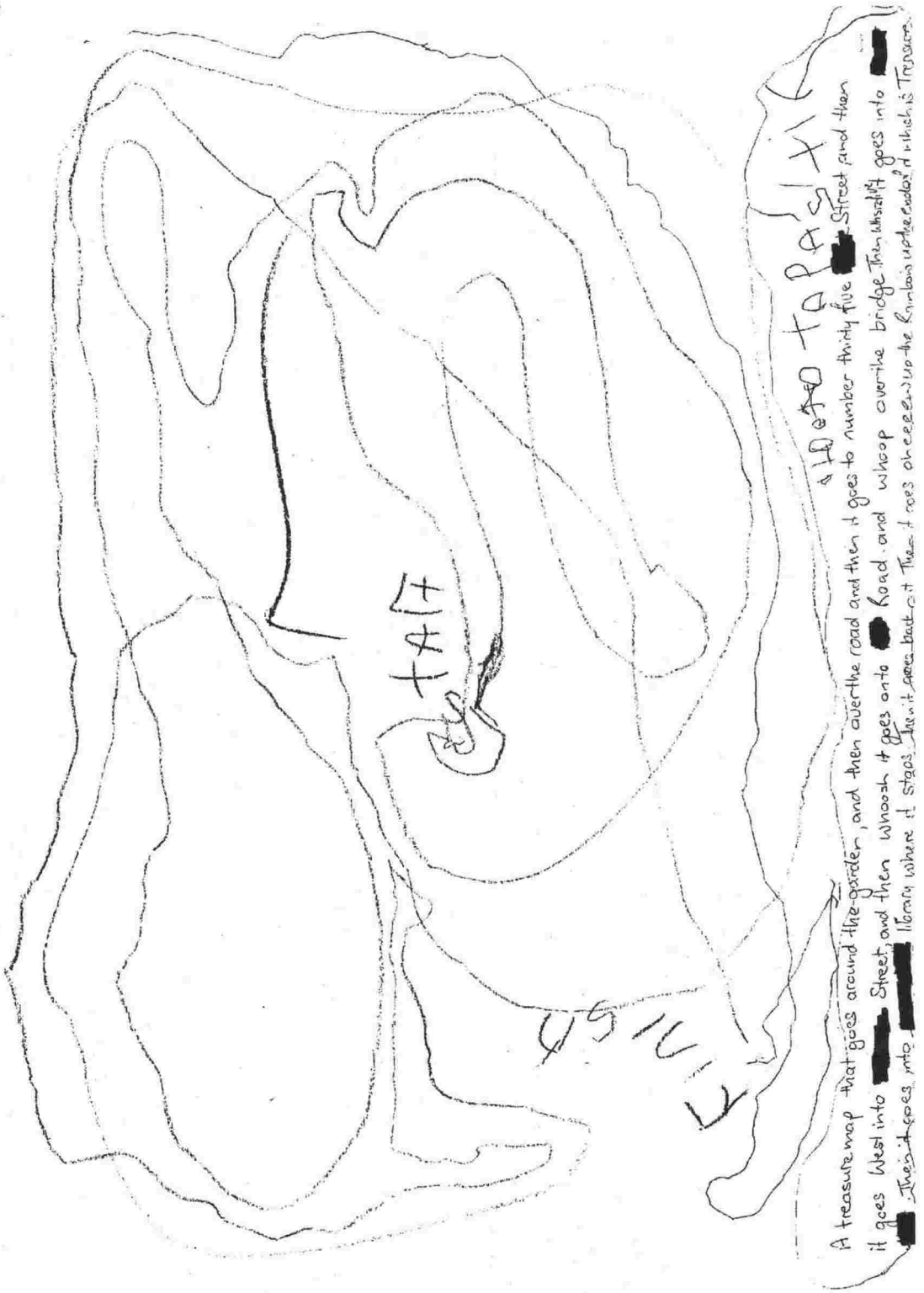


Figure 31. Henry's map.

5.5 Summary

This chapter has highlighted the literacy capabilities, experiences and support of the children participating in this study. The children were not emergent readers and were not learning to read. As independent, voracious readers, the children enjoyed a range of reading genres. Precocious reading ability and fluency were clearly exceptional, with ability levels ranging from 7 to 12 years, and fluency rates from 7 to 13-years equivalency.

Children were able to read competently and rapidly when reading both text and words in isolation. They also demonstrated that they understood the meaning of material well in advance of their chronological age. These abilities should no longer continue to be discounted or disbelieved. It is erroneous to suggest that precocious readers do not understand what they have read; comprehension results clearly affirm children's understanding.

Fluency is important for two reasons: firstly, rapid reading reflected the children's passionate engagement with the process of reading; secondly, fluency appears to be an indicator of spontaneously occurring precocious reading: if early reading ability was "drilled" it is more likely to be measured and focus on decoding.

Parents provided modelling, encouragement and resources to support their children. Books, libraries and computers were particularly influential. However, parents also stressed that the children participating in this research had learnt to read rapidly and "spontaneously"; without being taught. The anecdote of Oscar at the beginning of this chapter illustrated that the children were enthusiastic, engaged readers, who capitalised on support and resources, but they did not learn *because* of teaching or props. As a parent effectively stated, the early reading ability of children was "their own".

In addition to the standardised assessments, the collection of children's writing and art and stories of their literacy interaction, illustrate the richness of the children's literacy

connection. At home, being literate was “just something they did”; it was only beyond the home environment that it was considered to be unusual. This point will be explored further in chapter 8 in terms of expectations of children and in chapter 6 in terms of teacher and peer socialisation of children. The children in this study were able to “fly” with their reading, but children and families soon learned that this was less important than being able to sit still, act like a 4-year-old or be “evened out”. At the beginning of this chapter, a quote was presented describing Oscar’s interest in the solar system and how this was explored through books. A key element of the quote is the assertion that Oscar knew things his parents didn’t as a result of his own reading. This affirms that Oscar had not been hot-housed; rather, his parents were responsive to his lead. From reading the road code, Oscar knew, “You’ve got to stop at a compulsory stop, but if you get to a give way sign you can keep going if nothing is coming”. This comment could also be applied to Oscar himself and the other children: so long as there are no impediments ‘you can keep going’ with learning. In this study, parents saw their role as supporting their children and minimising barriers.

CHAPTER 6

BEING TAUGHT

We [parents] were told early on that the best way to help is to give wide experiences – looked laterally. We haven't done skiing trips but have involved them with daily life. Cooking is good with maths, reading, patterns, conclusions. We go to museums – can be harassing, but they enjoy it. Love libraries. By encouragement and giving him time and the opportunity to do stuff ... We haven't actually sat down and taught him stuff, except in a passive way – but I 'spose reading is active. (A: Parent interview, p. 5)

In chapters 1 and 2, I described the importance to this study of considering social support and ecological perspectives, alongside understanding of children's individual learning competencies. In this chapter, the discussion particularly focuses on social support that children receive from others: parents, other family members, early childhood and school teachers, and peers. All of these people play a role in supporting, guiding and directing the children.

The definition of *teacher* that I have used in this study is “any person who provides teaching support for children”. The definition is not limited to formally trained school or early childhood teachers and does not limit teaching to a directive or instructive approach. Neuman and Roskos (1993) acknowledge that “parents are our children's first language teachers” (p. 65). “Teachers” of children in this study include parents, siblings, extended whānau, peers and the children themselves. All of these groups of people are considered in this chapter, except the children themselves, as self-teaching is discussed in chapter 7. This chapter also considers teaching approaches: responsive teaching, key resources, and philosophical approaches to the accommodation of precocious reading.

Within this chapter, the support roles and perspectives of each of the key groups of people are considered. The anecdote from Alistair's parents at the beginning of this chapter illustrates the belief that parents' key role was to provide opportunities and experiences, to spend time with children and to encourage them. They asserted, “We haven't actually sat down and taught him stuff, except in a passive way – but I 'spose

reading is active". This comment also affirms that parents held a responsive rather than a directive view of themselves as teachers.

6.1 Being a Teacher

Within the questionnaire described in chapter 4, parents were asked "Who is it that mainly teaches [your child]?" Replies from this question and the excerpt at the beginning of this chapter illustrate that the parents have a holistic and responsive perspective of teaching. Although one parent highlighted her own relationship with her child as being critical, another parent noted that the child himself was the main teacher, and yet other parents commented on there being a combination of teaching factors involved:

I 'spose me. Preschool teachers. Mum [grandmother] has a lot of input. (G: Parent interview, p.6)

A combination of factors: upbringing, preschool, home environment, [his sister], us [parents]. (M: Parent interview, p. 7)

The influence of parents, siblings, grandparents, peers, school and early childhood teachers will all be discussed in this section. Each of these groups provides a particular sphere of influence and focus: providing support in different settings, providing particular resources, reinforcing particular behaviours and engaging in social interaction.

6.1.1 *Responsive parents: "I follow her lead"*

Examples of support provided by parents of the children participating in this study illustrate their commitment to responsive teaching approaches and validate the hypothesis that parents of precocious readers have strongly responsive teaching skills. Parents saw their role as being responsive to their children's needs, noting that they were guided by their children's interests:

If she talks about something from [pre]school we talk, look in books, look on the Internet – a learning experience for us too ... Generally whatever she talks about we read about it and talk to her about it. (J: Parent interview, p. 5)

We don't tend to teach him a lot, but he'll ask a question and we'll answer. (O: Parent interview, D1)

Responsive teaching incorporates the elements of acknowledgement, modeling and facilitation. Parents particularly noted the importance of communication within the family, responding to their children's questions and readily providing information:

Lots of explaining, lots of verbal stuff – talk, talk, talk – if it's not him, it's us. This sounds quite rigid and heavy – I don't suppose we have [used teaching activities] – with reading it's like he just about taught himself. (H: Parent interview, D3)

Our family makes a conscious effort to take time to talk to him as an adult, listen to what he has to say. If he asks a question we explain, we take the time. (N: Parent interview, p. 6).

We certainly believe in acknowledging intelligence and respect if they ask us. We might not go into technical detail, but we like to think we give the facts straight. A perfect example is [Matthew's sister] asked us why it says 'don't drink and drive' on car registrations. So we told her in a way she could understand. We don't beat around the bush, just tell them. They do understand. This is our way. We do believe information is good. If they ask us a question, we answer it completely and properly. We believe they learn that way. (M: Parent interview, p. 7)

Parents discussed the importance of having “quality time”, and sufficient time with their children. In chapter 3, it was noted that all except one of the children in my study had substantial periods of one-to-one time with caregivers. The caregivers appreciated the children's curiosity and often the connection, or “meeting of minds” that resulted (McNaughton, 2002): the children had a sense of “belonging” (Ministry of Education, 1996a) in their relationships with these key adults who encouraged the children's curiosity and inquiry. One mother stated “I also *like* spending the afternoons with him” (A: Parent interview, p. 10, italics added):

A lot of the time it's just me and Gill, one-to-one Gill and I ... She likes having Mummy around (G: Parent interview, p. 2). If I couldn't be there, Mum [Gillian's grandmother] has been there for her ... Isn't that what life's about – doing things [with your child]? [I'm] fortunate to have been a Mum for the last 4 years. (G: Parent interview, p. 10)

We spend a lot of time together . . . We do a lot of cooking together – good for reading, maths, consequences. A lot of time reading. (A: Parent interview, pp. 2-3)

Involving the children with daily life and activities that parents did was an important aspect of parenting. Swimming, gym, singing, piano playing, visiting relatives, the park, beach, toy shops, train rides, baking, using the computer, reading, doing puzzles, ball games and doing housework are just a few of the many, varied activities children enjoyed doing with family members. Parents involved children in everyday activities and community outings and valued the social and cognitive opportunities in early

childhood education. These examples illustrate that parents viewed their children's learning holistically. They did not focus exclusively on academic learning exclusively.

- Valerie: Now, thinking about all kinds of learning, what teaching activities, if any, have you used to help Nathan?
 Father: Participation in some of the things we do. We take the time to listen ... If he asks a question, we answer it.
 Mother: Lead by example, for starters
 Father: Wherever he was, if he was interested in something, we explained it.
 (N: Parent interview, p. 6)

Children's involvement with activities was seen by parents as *partnership* rather than as "top-down" teaching. Henry's father mentioned Henry "*helping me* work on things in the garage" and his mother noted "we've spent quite a lot of time on the beach *together*". Isla's activities included "*helping* feed the animals" [italics added].

Parents appeared to have a practical understanding of their children's zone of proximal development, demonstrating skill in recognising teachable moments and ensuring that learning was natural and easy for children.

I don't put her in a situation when I have to help her: it's co-operative, shared reading. She might say "I'll do that", she'll indicate she wants to do that. If she doesn't know a word, if it's in her vocabulary I'll link in to the picture, or if not I'll tell and explain. (I: Parent interview, p. 10)

We sang to her, nursery rhymes, danced around with her (p. 6) . . . We present ideas to see if she's ready to learn new things. [Her mother] is giving her a variety of experiences that will help her. Discuss and present her with books. Try to give her new things, social development, play . . . She's not been allowed to have difficulty – she doesn't normally have difficulty. She's not in a situation of difficulty because we're always supportive. (I: Parent interview, p. 7)

When I see a teachable moment. (I: Parent interview, QB7)

Some parents strongly rejected that they had taught the children, possibly wanting to discount notions of formal teaching, hothousing or being pushy parents. Erin's mother said that she had tried to teach her older son to read, but had not been successful. As a result of this experience, she decided that she would definitely *not* try to teach Erin to read, and had been frustrated when Erin "taught herself" as she felt this showed she was "completely useless" for either of her children. Other parents also stressed that they had not deliberately taught their children:

Compared with other children, she'll go into [her school] and they will not have

experienced other children like her. In fact, I'm worried, and this is why *I've not deliberately taught her* . . . I'm too nervous to have a frank talk in case I get off-side with them [italics added]. (I: Parent interview, B7)

In actual fact Isla hasn't been taught – not consciously – I wasn't aware I was doing it – “taught” in inverted commas – I didn't set out, at no stage . . . (I: Parent interview, p. 8)

At no time did I set out to teach her to read. From her earliest years I have followed her lead and interests though I have introduced new books, tapes, ideas to her to see if she'd be interested in pursuing them. If not I've left it until a later time or dropped it. At all times I've been *ultra careful* with her attitude to learning, being careful not to *turn her off* in any way [original emphasis]. (I: Correspondence)

I have not deliberately set out to teach Isla to read at all – it makes for problems with the school system. Even after I noted she could read I was bending over backwards not to affect her positive attitude – we don't do it if she doesn't want. I follow her lead, but I do present a wide variety of learning [experiences]. (I: Parent interview, B7)

6.1.2 Siblings – ‘He's lucky he's a second child’

It is important not to underestimate the role that siblings play in the early learning of children. McInerney and McInerney (2002) state, “In the early years in the home, parents and siblings are the most important elements in the development of a child's social self” (p. 438). Psychological literature refers to negative aspects of sibling relationships: rivalry, displacement, resentment, friction, envy, being deprived of affection (Berk, 1999; McInerney & McInerney, 2002). Research also shows enhanced social popularity for younger siblings through the development of negotiation, compromise and communication skills (Miller & Maruyama, 1976).

Of the five older siblings, three were sisters and two were brothers. It was seen to be advantageous for boys to have an older sister; older sisters were seen as role models and teachers, and they also clearly enjoyed reading: (However, my small sample size means that this cannot be assumed to be generalisable.)

When asked, ‘Who is it, if anyone who has mainly taught your child?’ the response was: ‘It's difficult to say – still can't pinpoint who he learns most effectively from. We still believe [his sister] is his best teacher. The way they communicate, interact – he learns a lot from her. We don't really know the learning process, which one had the most effect – [his sister] and a combination of factors: upbringing, preschool, home environment, [his sister], us [parents]. (I: Parent interview, p. 8)

He's lucky he's a second child – all the stuff he's needed has been there, for example, puzzles are there. He's benefited by having a bossy older sister who will jump at the chance to show him how to do things – although there are positives and negatives. He has stored information from her. (A: Parent interview, p. 5)

[His sister] Taught herself to read like Alistair . . . [She] is his major playmate – imaginary games, computer, art, drawing, making cards, his main companion. Alistair wants to share with Nicole – a contemporary in his mind despite the 4-year age gap. (A: Parent interview, pp. 1-2)

[His sister] is an avid reader, a great reader, she's proud of her reading. She has just finished her first big book – 140 pages. The teachers noted how well she read, and how expressive. (D: Parent interview, p. 2)

Having an older brother was not perceived to be as influential as having an older sister was. Two girls involved in the study had older brothers and had caught up to their brothers academically. These two older brothers did not particularly enjoy reading and had interests that their younger sisters did not share, for example, sport:

He has been a slow starter in reading ... Shes a better runner, drawer, reader, better at maths, better at everything than he is, poor kid. He actually hated her for a long time. He didn't have to say anything – the way he treated her . . . When she was 3 to 4 [years old] and he was 4 to 5 [years old] I could see something was bothering him. She used to flaunt it, still does. I sat him down one day and told him 'she's lucky – she can do things better than you, you just have to work harder, you can do it.' He's accepted it now, he asks her to help. He didn't want to before. She showed him up in a bad light. He goes to her for help with reading now, which is good I suppose ... It's funny to have one so advanced and one at the other end.

6.1.3 *Grandparents: 'A lot of input'*

In chapter 3, the importance of grandparents was noted; the majority of families participating in this study specifically mentioned the importance of grandparents, even though information about grandparents was not specifically asked in the interviews. Two of the children had particularly strong connection with grandparents: one child was living with his grandparents permanently and called them "Mummy" and "Dad"; another child's grandparents cared for her on weekdays while her parents worked. A further seven of the families mentioned the frequent involvement of grandparents, and only three families did not have frequent contact.

Nathan's Nana and Grandad made a road map. Put McDonalds and Toyworld on it for him to drive his cars around. I thought that was wonderful. They take him physically shopping too ... His grandparents give him lots of praise – 'Oh Wow!' They're the first ones that got us thinking (that he was reading earlier than most children do). (N: Parent interview, pp. 7-8)

Credit to the grandmother . . . she spends hours and hours and hours with the kids in books. (I: fieldnotes p. 4)

Me – she likes having Mummy around, and her Nana – we're the main ones she does things with . . . her Nana has a lot of input. (G: Parent interview, p. 2).

In a study of intergenerational relationships, Nicholls (2000) notes the important contribution of “older adults, who bring their own life experiences, cultural insights and unique developmental characteristics, and enhance the lives of children” (p. 10).

Vygotsky’s (1978) emphasis on social interaction relates to the reciprocal nature of intergenerational relationships. In my study, children contributed *to* grandparents’ lives as well as being supported *by* them. Isla’s grandmother talked about the “strong bond” between them, and Lewis’s grandmother mentioned that she and her husband enjoyed “just having fun with him”. Gillian’s mother talked about the important support role her mother provided, and the time her mother spent with Gillian.

Because of the small number of participants, to protect the anonymity of teachers and families, many of the grandparents have been referred to within this study as “parents”. Unfortunately, this means that the grandparents’ stories have disappeared in the overall parent/family discussion.

6.1.4 Early childhood education teacher-child interaction

In New Zealand, a strong philosophical commitment to *quality* influences research (Podmore & Meade, 2000; Wylie et al, 1996), policy (Ministry of Education, 1996b, 1998, 1999c, 2002) and practice (Elicker & Fortner-Wood, 1997). The Ministry of Education *Statement of Desirable Objective and Practices* (Ministry of Education, 1996a), mandatory for all chartered early childhood services in New Zealand, promotes “relationships and interactions which are responsive, reciprocal, positive and encouraging; extending children’s thinking and actions through sensitive and informed guidance, interventions and support”.

Some positive examples of interaction were also observed; such examples are important because of links between sustained interaction, quality interaction and genuine interest (Dunkin, 2001; Katz, 1994, 1998). Two examples reported here are from unstructured kindergarten settings. Firstly, Henry was observed to have an extended conversation with a teacher about how much the building the children were playing on would cost to buy; he proposed it might cost several million dollars. The conversation continued as

Henry climbed up and down the slide, slid down a pole, and sat underneath the playground fort. Because of the constant movement, I missed hearing many of the words, but the sustained interest in the conversation was clear.

At Isla's early childhood centre, I was able to observe sustained interaction between an adult and child that extended across separate episodes and activities and informed how well the teacher knew the child. The teacher had welcomed the child to a group role-playing fire fighting then later used her knowledge of the child to draw her into a news group. Subsequent communication with the family revealed the significant preparation Isla had made to find a newspaper cutting about a show she had been to, and how appreciative the family was that this was acknowledged. The anecdote highlights the fact that if the teacher had not been invitational, there would have been a lost opportunity for this child to contribute. On another occasion, Isla was walking on long blocks as if they were skis. A teacher facilitated a discussion about Isla's family holiday to a mountain, showing that she remembered details Isla had previously told her.

However, Fleer (1995) states that despite good intentions, "research has shown that some adults spend most of their time interacting with children in ways which facilitate the management of resources and children, but do not stimulate curiosity or promote thinking" (p. 19). This study is about children rather than about teachers, and any comments about teachers that are extracted from my observations of children need to be considered with caution. However, the experiences children had in early childhood centres cannot be divorced from interactions with teachers. Two separate early childhood observations were completed for each child, averaging about one hour per observation. The following finding and trends, from over 20 hours of observational data, have sufficient impact on the experience of the children participating in my study to warrant being reported:

- Only two positive comments were observed from teachers to children, both expressing thanks for things the children had done.
- In three observations, there were *no* interactions between the child and *any* adult.

- In at least one observation, the *only* comments to a child were directive, for example, “do your work”.
- Forty- eight per cent of all early childhood teacher comments recorded were directive, for example, “sit down”, “tidy up” or “be quiet”
- Eighty one per cent of all interactions were brief, rather than sustained, that is, fewer than three exchanges (Dunkin, 2001).
- In some instances children initiated interaction but did not receive any reply from the teacher.
- Nine per cent of the teacher comments appeared to be rhetorical (the teachers walked away after speaking, without waiting for a reply or feedback).
- Nine of the interactions were sustained (three or more exchanges from each partner).

It is not possible to know for certain whether the teacher-child interactions that I observed were typical or atypical, and it is important not to make assumptions. There could be many reasons for the situations where I saw *no* interaction between the research child and teachers. It could be that the particular child was deliberately ignored or that the teacher ignored all children, that this child regularly avoided adults, or that the child assumed that the approach from teachers was not genuine, that it was a particularly busy day for staff, or a centre with a philosophy that prioritised other things, or that the teachers thought keeping distant would assist my research, or other reasons. However, McLaughlan-Smith’s research in New Zealand kindergartens indicated that other early childhood teachers also focus on management and organisation, even when involved with literacy-related experiences. “Despite their belief in the importance of ‘free play’, teachers promote literacy in a very direct and routinised way It can be argued that teachers spend too much time on management and too little time interacting with children” (McLachlan-Smith & St. George, 1997, p. 3).

The following vignette is an example of a teacher actively trying to construct meaning with a child, but failing to gain an understanding of the rationale behind why the child

coloured the sky in her picture pink (see Figure 32). Her efforts to gain understanding prompted the child to provide an “acceptable” explanation. The teacher and child appeared to have a positive relationship, yet did not have shared understanding in this interaction.

(Early childhood setting, in which children are all at tables writing or drawing.)

- Teacher: Right, Penny would you like to tell me about your picture?
 Penny: That's a house
 Teacher: That's a house. What else?
 Penny: That's the sky.
 Teacher: A lovely pink sky. What else.
 Penny: Nothing else.
 Teacher: What shall we write about this picture?
 Penny: Don't know.
 Teacher: A house and a lovely - Why was the sky so pink?
 Penny: Because all of the blue had disappeared (there were no blue crayons in the box; the blue crayons had 'disappeared').
 Teacher: Can you tell me about this part of it (teacher points to the pink sky - perhaps thinking Penny will tell her about sunsets)?
 Penny: That's all of it.
 Teacher: That's lovely, lovely work today (She writes 'lovely work today' on Penny's book). Do you know what this part is here (pointing again to the pink sky)?
 Penny: No (appears unsure why teacher is probing about the sky).
 Teacher: Can you tell me?
 Penny: Fireworks (appears to decide to give a response that will please the teacher).

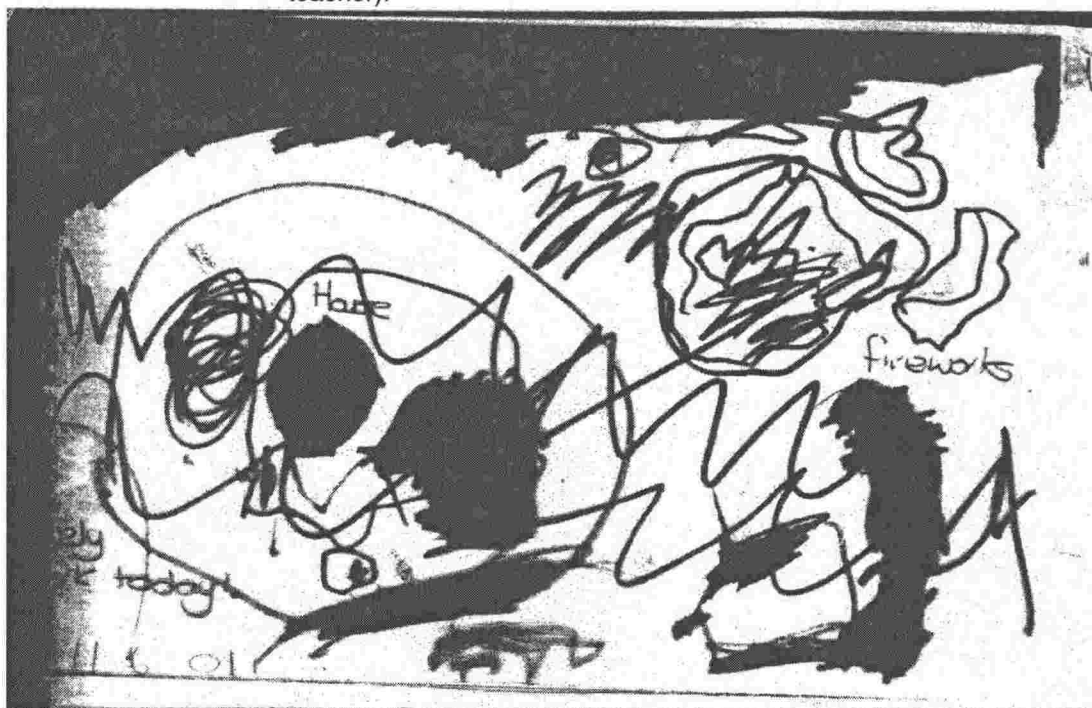


Figure 32. Pink sky picture.

The early childhood centre observations in this study illustrate that interactions between teachers and children were diverse but not always responsive. The early childhood curriculum refers to “warm supportive relationships”, yet organisational and directive interactions dominated several observations. In some of the settings with more formal programmes there was a noticeable amount of wait time as children lined up to have their work checked or to ask permission to use resources, or waited for the teacher to be ready to continue “teaching”. In the less formal settings, interactions were still minimal but were, on occasion, more responsive and meaningful for the children.

6.1.5 School accommodation of new entrant precocious readers

The four schools involved in the early childhood phase of this study were overviewed in chapter 3. In summary, however, of the four schools, two are private, and two are state schools (one is a Catholic state-integrated school). One school has girls only, one has boys only and two are co-educational. The schools were chosen because similarly aged children were beginning there at the same time, and to cover a variety of demographic features. The schools were not chosen on the basis of their teaching approaches, and the outcome of four quite different models of responsiveness to special abilities is purely coincidental.

When I arranged access to schools, I advised teachers that I was interested in observing the child and *how they settled to school*. What the teachers tended to talk to me about, however, was *how they accommodated* children with special abilities. To ensure anonymity, while sharing the information from teachers, I have not matched specific details of schools and teachers within this chapter discussion. Instead, I have focused on the philosophy and general approach to accommodating special abilities. Because there are only four children in the transition phase (two girls and two boys), the gender of the child has not been disclosed in each school example, reference being only to “child”. The general approaches are summarised in Figure 33, with discussion and examples of each of the four approaches following. The school pseudonyms of Accelerating School, Enrichment School, Inclusive School and Conformity School describe their overall

approach to accommodating the children who were precocious readers at school entry. These four examples of approaches to the accommodation of precocious readers illustrate that schools varied significantly within this study.

Acceleration School was able to support the precocious reader from my study in two ways. Firstly, the child was placed in a composite class (Year 1 and 2), which included a majority of children well over a year older. Secondly, the child was "advanced" to a higher class (Year 2/3) for reading. The teacher told me that whenever children finish their work "There is always more work to do". When I visited, the teachers were keen to show me assessment results, work samples and performance comparisons with other children. There was a strong school focus on academic excellence, teaching included a focus on expectations, and parents were informed of achievements. Extrinsic awards were strongly used, for example, the teacher said to the class, "Children who haven't done anything silly will get a merit award". Acceleration is less often used in New Zealand schools (Easter & Moltzen, 1997; Townsend & Patrick, 1993), but is supported in international gifted education literature (Davis & Rimm, 1994; Gross, 1991); Van Tassel-Baska (as cited in Davis & Rimm, 1994) explains, "Acceleration implies no more than allowing students to move at a rate with which they are comfortable and can excel, rather than holding them back to conform to a 'speed limit' set by the average learner" (p. 105). In an address to the Sixth World Conference on Gifted and Talented, Julian Stanley stated, "educational nonacceleration is an international tragedy" (as cited in Davis & Rimm, 1994).

Enrichment School focused on providing new, broad learning experiences for children with special abilities, for example, new languages, music and social contribution. Parents who could contribute to helping children learn new skills were welcomed to contribute to the school. Planning for children with special needs and abilities was a collaborative process between teachers and families. The class teacher thought that I would enjoy observing a "developmental" (free play) session, noting that the child from my study played well alongside the other children, but "at quite a different level". She gave the example of talking on a toy telephone, which in the child's case would be a call

through to Scott base in Antarctica. During one observation, the child I was observing participated in a shared painting experience. While painting, the child engaged in conversations with peers about the blue waves they were painting. With his teacher, there was a discussion about whether Antarctic cod would need fur to survive the cold, and how they could research the answer.

<i>Generic Approach</i>	<i>Philosophy for working with able learners: School perception of child needs</i>	<i>How this works: Programme approaches</i>	<i>Support needed</i>
<i>Acceleration</i> ‘There is always more work to do’	Subject acceleration Academic extension, challenge (vertical)	In composite class with 7 Year Two children, 3 Year One children aged 9 months older, and 1 other child aged 5. Also goes to Year 2/3 class for reading. ‘Weak’ areas (in comparison to ability rather than age) identified, e.g. ‘should improve writing’	Communication between different teachers/families. Acceptance from other students
<i>Enrichment</i> ‘Alongside other children’	Enrichment Experiences New interests, learning experiences (horizontal)	Kept in-class to meet child’s affective needs. Exposure to new language, music, social, leadership opportunities, thinking. Individual projects, e.g. writing about complex topics and ideas	Collaboration with families/mentors. Time to meet one-to-one with child.
<i>Inclusive</i> ‘Preparation is ‘specially for her’	In-class programme adaptation, responsive to child’s strengths/needs. Security of familiar environment	Kept in-class to meet child’s affective needs, depending on child. Teacher adapts class topics and extends content, creates suitable worksheets, individualised pace/ability, e.g. accepting that writing and reading may differ in ability level	Extra planning from teacher, adaptation of resources. Communication with families
<i>Conformity</i> ‘Little bit of a control thing there’	Assimilation with age-peers. Consistent achievement across subjects (evenness). Contribution to class.	Focus on weaknesses, areas for improvement. Use skills for school “jobs” or to peer-tutor others in class, e.g. limiting reading progress until writing ability catches up	Communication to families. Focus on collaboration, co-operation, supporting less able learners

Figure 33. Four Approaches to accommodating early readers at school.

Enrichment provides “richer and more varied educational experiences . . . greater depth and breadth” (Davis & Rimm, 1994, p. 105). Enrichment and acceleration may overlap, and it is important that enrichment is truly *additional* to what is normally provided.

An inclusive education programme supports children with learning needs to have their individual learning needs met in a mainstream setting. Inclusion is a term applied to the philosophy of meeting needs across the need spectrum; children with special abilities can also be seen to have special academic and emotional needs (Davis & Rimm, 1994). The programme for the child in my study at Inclusive School involved elements of both acceleration and enrichment, but was closest to enrichment philosophically. The class teacher at this school said that providing for the child’s needs was “a predicament” in terms of providing a reading level appropriate in both difficulty and suitability. She had considered the affective needs of the individual child, and believed that placement was most appropriate in an age level setting on this occasion. The teacher had considered advancing the child to the next class for reading but felt that this child would feel insecure; it was an option that would be revisited at a later time. The teacher spent time adapting the class content to a higher level and to prepare individual reading activities for the child in her class; she showed me many worksheets and activities that she had created to extend comprehension and reflection, without requiring advanced writing skills (see *Appendix W* for an example). Preparation is “specially for [the child], but that’s what I do for the other children”. However, the child was a social participant in whole class programmes, even when content was elementary, for example learning letter of the week ‘O’. The teacher stated that although the child was “quite a little bright button . . . things that match [the child] match my group”.

At Conformity School, it was felt that the child who was a precocious reader needed to “settle”. The teacher stated that she felt if the child was “allowed” to have their “own way”, then the teacher would lose control. This included being allowed to work at ability level. I was told that once the child “showed respect” for the teacher and “was more established” then more flexibility would be permitted. The example below illustrates some of the organisational and control considerations at Conformity School:

[The child] took a while settling ... lots of sending through to [the assistant principal] – head of the Juniors. [The assistant principal] was backing me up ... The child was very anti-routine. If we ... the child would want to do something else. Handwriting, alphabet. Little bit of a control thing there.' (teacher interview)

At Conformity School, the teachers wanted to work on “broadening out rather than shooting up”. For example, it was felt that a focus on writing would help the child’s writing to “catch up” to reading ability. Becoming “even” was considered to be more important than knowing where the actual reading ability was.

[the child] may be better in another group. The last time they worked the groups out there was not a suitable group ... there would have been eight in the group – ‘we wouldn’t have enough books. (Teacher interview)

Other considerations at Conformity School included social responsibility and contribution. Teachers felt that the child should use reading ability to assist the class, and they asked the child to read to other children and take responsibility for class library books. While children may enjoy leadership roles and social contribution, this focus does not necessarily extend children’s own cognitive skills (Boothby, 1980). Kegley and Siggers (1989), writing with a parent perspective, warns that a “dogmatic, rigid, singular, restrictive” focus of ensuring that children “do what they are told” can have a negative impact of children’s creativity (p. 374).

The four school experiences described in this section illustrate that there are diverse philosophies and teaching approaches used by schools when responding to children with special abilities. The four schools were chosen because of the age of the children transitioning to school; the characterisation emerged from the data. In at least one school, it was the teachers’ first experience of working with a precocious reader, so they developed their response during involvement with the study. Three of the schools, although different from one another, focused on teachers responding to the child’s abilities and providing support. One of the schools focused more on issues and problems, expecting the child to adapt to the requirements of the teacher. In other words, schools accommodate children, but children are also expected to accommodate the needs of school. School teaching is therefore not only about delivery and responsiveness; it is also about socialisation and expectations. These ideas will be explored further in chapter 8.

6.1.6 Peers: “We don’t need you”

During my observations in early childhood centres, children were observed to play with peers in early childhood settings for extended periods of time. The children from my study did not stand out from the other children. Overall, the children in my study appeared to value interactions with others and sought out children’s company. Some examples of positive peer interactions between children included playing chasing games, reading books side by side, playing with trains, animals, dinosaurs and cars, being part of a dragon, joining in music, art, role-play of TV characters, mixing colours, block construction, board games, collage, water play, swinging from monkey bars.

The participating children demonstrated examples of positive interpersonal interaction. For example, Julia pointed to another girl’s work and said, “I like this and that” (J: ECE1, p. 5). When one child drew pictures alone, he created detailed pictorial representations. His parents showed me examples of art that illustrated the difference between what he created alone, and what he created at his early childhood centre with friends. A shared picture painted with his friend at kindergarten looked like colourful, random lines and shapes. The child showed awareness of social context and activity appropriateness: By engaging with his friend within the other boy’s zone of proximal development he ensured that the experience was positive. His mother described, “With [his best friend] he scribbles. At kindy paintings they both do it – it becomes something different, a social activity ... he does not scribble at home” (Parent interview, p. 3).

I was surprised at the extent of the overtly negative interactions between children during my observations in early childhood centres and schools. Despite a curriculum couched in positive language, positive role modelling from teachers, and positive media images, many of the experiences between children were negative. I observed children excluding other children and using disparaging comments. For example, when one child was talking to friends in the playground, another child interrupted stating, “That’s the stupidest thing I ever heard”; having been rejected, the child I was observing didn’t finish his conversation. When another child tried to join in with two girls who were

drawing on a blackboard with chalk, she was repeatedly told that she could not play, including “Too bad . . . and I’m not going to be your friend”. On another occasion, this child was criticised for “scribbling”, when she tried to draw the motion of bees in flight (see Figure 34).



Figure 34. Bees in flight

I observed children at an early childhood centre creating a pretend fire engine by putting chairs into rows. Some children were sitting on chairs. A child I was observing went to join the group, but was told “No, you need to sit down on the floor”. The child continued to try to join in, but was told not to, because there were two children with the same name at the early childhood centre, and only the other one was allowed to join in. This example illustrates that children have social “rules” that need to be learned and negotiated.

In another early childhood centre, the child I was observing was sitting at the play dough table with three other girls and one boy. One of the children was talking about making eggs. “Look at me. I’m squashing play dough out of this”. The child replied with “I’m making an egg too”. One of the girls asserted, “No, don’t help as we don’t need you.” The child remained at the play dough table, and offered some play dough to the girl, presumably in order to achieve acceptance. Two boys joined the table and took the

child's play dough away. The child asked them not to take the play dough, but they ignored the request, and no one else helped. Several times the child spoke, but received no acknowledgement at all. This example shows that children can be bullied and also that children can be excluded and isolated within group settings.

Negativity and exclusion continued at school. I observed a class playing a game with children in a circle passing around a giant inflated ball; when the ball came to the children standing either side of the child I was observing they returned the ball back the other way so that the child was repeatedly missed out (I: School2, p2).

There did not appear to be any valid reasons for the negative peer experiences, although sometimes negativity escalated after the children participating in my study had made intelligent comments. Children appeared to be rewarded by peers and by teachers when they acted "like a 4-year-old" rather than to their ability level. During an early childhood centre observation, a group of children 'socialised' Julia by rewarding her for "off-task" play and excluding her when she focused on completing the academic task "correctly". The example illustrates that peer socialisation in this study encouraged age-appropriate behaviour and discouraged children from using their individual abilities to full potential.

A small group of girls get a tray of animals. Girl 1 comes and grabs the giraffe, saying 'I want the giraffe'. The group argues noisily. The early childhood teacher comes to the group and tells them that they are not using the animals 'correctly'; the task is to sort the animals, and they will need the continent map to help them. Girl 2 [who I was observing] gets a tray with continent puzzle pieces and brings it to the mat. The other girls hold their animals up to the continents and make slurping noises as if the animals are drinking. Girl 2 says, 'You have to look and see where these animals come from', and gestures to a book. Girl 3 replies, 'No, we don't want to'. Girl 2 then says, 'Only if you want to, you have to look in here, only if you want to.' She holds up a reference book to show them that they need to consult it to see which continent the animals come from. There is no response from the other girls. Girl 2 puts the book down and takes a lion. Girl 3 holds a giraffe and a snake on her head and sings, "Na na nana na – you can't get me'. Girl 2 waves her lion about and then Girl 3 smiles at her for the first time. (ECE Observation 2)

Parents commented on negative peer behaviour at various unsolicited times during the study. One parent, while completing a special ability rating scale, commented on the

link between “peer pressure” and perfectionism. Two other parents commented on bullying.

The data presented in this section has illustrated that age peers of the children in this study strongly ‘socialised’ the children. This occurred through the peers being negative toward or socially excluding children if they were “different”. When children minimised or masked their abilities, they were rewarded with acceptance and social inclusion. The children participating in this study generally had positive social skills themselves, with the ability to adjust their actions to different contexts. The desire for social acceptance meant that at 4 years old some children in this study were already beginning to “conform to the norm”.

6.2 Being resourced

Resources are props and artifacts that support learning and teaching. Some of the resources discussed in this section are purposefully used to support teachers, for example, games and puzzles. Other resources form part of the child’s holistic environment, for example, language, music and art materials. There are also resources that are not necessarily *provided*, but that children access, for example, imaginative play and creative movement. Critical literacy resources, such as books, writing materials and computers, were discussed in chapter 5; in this chapter additional resources are discussed that relate to the broader learning of the children participating in this study.

6.2.1 Family resources

When I visited children at their homes, many of them enjoyed showing me a range of things that were important to them: their bedroom or playroom, books, piano, artwork, chalk art on the outside concrete, a box to enjoy hiding in, Lego, animals and computers. These interactions affirm that children were not merely *doing* things that their parents expected; they were enjoying *being* children with the support of a range of resources.

One of Isla’s parents stated: “Early on when she showed an interest or readiness I presented materials”. Subsequent to the interview, I was sent correspondence providing

further details on the huge range of resources available for Isla, grouped in 19 categories (see *Appendix X*). The list that Isla's family provided included both structured materials and informal experiences. Although the list was extensive, the parent commented "left some out"! This family stated that they acquired the majority of their resource collection through "garage sales"²⁰, meaning they were purchased at minimal cost. The 19 headings provided by Isla's family have been collated and loosely linked to Gardner's 8 *Multiple Intelligences* (1991), as shown in Figure 35.

Categories of resource, as provided by family	<i>Gardner's Multiple Intelligences</i>
Books, alphabet materials, writing materials	<i>Linguistic</i>
Maths, sandpit, water play,	<i>Logical-mathematical</i>
Puzzles, playstation, dough	<i>Spatial</i>
Music	<i>Musical</i>
Gross motor tasks, finer muscle development	<i>Bodily-Kinesthetic</i>
Outdoor excursions, Collage	<i>Naturalistic</i>
Puppets, imaginative play, dress-up boxes	<i>Interpersonal</i>
Imaginative play, creative materials	<i>Intrapersonal</i>

Figure 35. One family's resources, with links to Gardner's multiple intelligences

Because they cover all of Gardner's "intelligences", the resources are clearly diverse and holistic. Fears that children are "hot-housed" by families should be alleviated by virtue of the fact that the resources are a) responsive to children's interests, b) broad rather than narrow – covering a number of intelligence or learning areas - and c) include informal experiences as well as structured activities. The range of resources (including walks, ball play, board games, puzzles and books) illustrates that there was an investment of parent time, but not necessarily expensive resources. Parents used the library to borrow puzzles, books and videos. Of the toys, games and other activities that were purchased, some were bought new; in other cases, they were inexpensive and "pre-loved".

²⁰ 'Garage sales' involve people selling unwanted belongings, usually for bargain prices and usually on the weekend, either from their garage or front garden.

6.2.2 *Early childhood education centre resources*

The early childhood centres that children attended all had a rich variety of resources accessible for the children (see *Appendix Y* for description of one centre). The points below summarise some of the early childhood centre activities one child engaged with during the year she was aged 4, according to the early childhood centre's records:

- dramatic play, including sustained play as a dog for several months, “donned in puppy headgear and tail”, and even singing along to songs “barking or yelping in perfect pitch instead of articulating the words”
- Music, including making up “clear and interesting four beat rhythm patterns” for other children to follow
- “Dancing almost every day with others to Irish, classical, folk and storytelling music”
- ‘Has a particular flair and interest in fine motor activities such as drawing, painting, writing, cutting and pasting ... drawing and writing skills are very accurate and carefully executed.’

My observations of children in early childhood centres noted their interaction with a diverse range of activities and resources, including outdoor play, art, music, science, drama, reading books, art activities, and use of community amenities. Children engaged with resources alone, with other children, and occasionally with adults.

The early childhood centres that identified themselves as preschools in my study sometimes directed which activities children were to do, allowed choice from a limited number of options, or directed how particular resources were to be used. For example when one child began constructing with blocks he was reminded that the task for those particular blocks was to construct an ordered staircase then roll the marble down it. After completing the “correct” task, the child experimented with removing various blocks to see how this affected the marble roll. The teacher once again reminded him of the “correct” task. In another example, a girl was told that she could choose any activity she liked, provided it was from a particular shelf. In a third example, children had “free play”, but only when they had finished their writing and handwriting.

The kindergartens involved with the study shared the philosophy that children should be able to use resources in diverse ways. Apart from a short group teaching time, the half-day session was “free play”, with children encouraged to follow their own interests, explore, and create. Some examples in the study include several children being covered by a sheet and walking together as a taniwha²¹, a child making a pinecone creature, and playing chase in the playground. Teachers in one early childhood centre provided me with a learning story of water play activity and interaction that illustrated broad communication and thinking skills of importance for emergent literacy. The children in these kindergarten settings had equivalent reading abilities to the children in the formal preschool and were as passionate about their reading as the preschool children, despite not having “lessons”.

6.2.3 Toys and puzzles

Toys are artifacts used by children during their play; McInerney and McInerney (2002) note that practice play incorporates “use of objects to explore the world” (p. 33). Symbolic play can also include props, and children in this research had a variety of resources available to enhance their play. The vignette at the start of this chapter highlights that play was not limited to structured games with prescribed rules, and included physical play, word play, music, and humour. However, parents often interpreted questions about “activities” as meaning structured games and equipment, such as the commercial games *Scrabble*, *Connect 4* or *Snap*, or traditional games like *I Spy*:

The word cards . . . made a game of it, put them around the house – ‘door’ etc. . . . I have a HUGE stockpile of art, craft and stationery, a huge resource. (N: Parent interview, p. 6)

We’d like to think we don’t buy frivolous things just for the sake of a toy. We buy toys with a purpose for learning rather than just a toy. So learning becomes fun, it’s easy, you learn without realizing you’re learning. (M: Parent interview, p. 7)

²¹ A Taniwha is a sacred spirit from Māori legends that can take many forms. The most well-known form is similar to a dragon in appearance, often living in water.

Puzzles and mathematical games were particularly mentioned by parents, I also observed children engage with these resources. The use of puzzles is extended in chapter 7 as an opportunity for children to engage in 'intellectual' activity.

Always had puzzles around. Books. Lots of music, nursery rhymes. (G: Parent interview, D3)

Computer CDs, puzzles, Morphun blocks, Lego ... (L: Parent interview, p. 5)

Kindy puzzle which showed the planets and their names. By doing this puzzle, Lewis learned the order of the planets. The kindy teachers assumed that his family must have taught him. (L: fieldnotes)

6.2.4 Music

Music was often mentioned as important to children and families in this study, as were computers and mathematics. Many of the families noted that the children had had music lessons and exposure to music at a young age. Other families focused on the children's interest in and engagement with music, again often at a young age. Some of the families linked reading and music development; for example, singing nursery rhymes supported phonological awareness.

Henry's mother noted that he could sing the whole alphabet backwards and forwards at 2 to 2 ½ years of age. (H: Parent interview, p. 4)

He is musical. I forgot to mention that. He can remember tunes, rhythm. He used to boogie quite a lot when he was young, moving to it. (N: Parent interview, p. 3)

When asked when he was first read to, David's mother first mentioned singing to him, 'He was sung to before he came out'. (D: Parent interview, p. 5)

Right from a very early age she had an interest in music, musical ability. [A preschool music teacher] noted she has a sense of rhythm developed far beyond her years. At a very early age with music was patting the beat on the back while dancing. Nursery rhymes and rhymes led to music. (I: Parent interview, p. 4)

Erin, Gillian, Henry, and Isla had attended formal music lessons, provided amongst a range of early learning experiences. Henry had, in addition to kindergarten, attended music, gymnastics and swimming at various times. Gillian had music and swimming classes, Erin was learning to play the piano and Isla had dancing classes. Less formally, Henry enjoyed recording music at home with his father: his parents presented me with a CD Rom titled *Henry's Songs*. Music cassette tapes or CDs were often played at home

– David’s mother stated, “Music of all sorts is played all the time”(Parent interview). Iris’s mother took her to a *Hi 5* concert, and David sent e-mails to *The Wiggles*²².

Musical ability may be linked to mathematical ability (Davis & Rimm, 1994), and supports both affective and cognitive development. Affective dimensions include children’s responsiveness to and enjoyment of music. Cognitive factors include specific new learning (for example, an instrument) and the style of learning (for example, predictable and repetitive). It may be that precocious readers’ ability to ‘crack the code’ in reading allows them to also acquire musical expertise rapidly (Bruce, 1996).

6.2.5 Television

Families had varying beliefs about the role of television; for some it was part of family life and for other families of less importance. I did not gather data on the types of programmes watched, and for how long. However, some families specifically mentioned that their children enjoyed particular television programmes. Alistair’s mother noted that he *learns* from TV, and she linked a TV and computer programme. Oscar enjoyed reading *Sky* weather:

He loves to read the weather. He’s very interested in the weather. He had friends over – he broke off to come and watch the weather, then ran back to tell them, but they’re not interested. Weather channel on Sky [TV]. (O: Parent interview, p. 10)

Matthew’s family first recognised his ability to read when he began to read the written prologue of the movie *Star Wars*, as it played on TV at home; they were sure that he had never seen this movie before. For Lewis, *Pokemon*²³ was his passion. When asked what their child’s currently enjoyed reading, another family stated “television credits” (A: Parent Interview, p. 5). These examples from my study suggest that access to television is not necessarily a barrier to the emergence of precocious reading.

Other families, however, asserted that television was *not* important to their children, providing examples to illustrate this:

²² *Hi5* and *The Wiggles* are Australian groups whose interactive music is popular with young children through television, music sales and stage shows. The *Hi5* television show is educational.

²³ *Pokemon* is a popular animated Japanese television programme, with associated trading cards, movies and merchandising.

One thing she's never done is watch TV. It's always been in [her father]'s office. She has a couple of videos – singing, action songs – maybe one a month, it's not part of [her] life. She has lots of books for entertainment. (G: Parent interview, p. 10)

Henry had a friend that he used to play with. When the other boy became interested in *Pokemon*, Henry lost interest in him and refused to play with him (H: Parent interview).

He doesn't care about TV or cartoons. He will be doing a puzzle or going through books. (D: Parent interview)

6.3 Summary

Teaching influences for the children in this study include a range of people and a range of resources. Jordan's (2003) model of teaching continuum (see chapter 2) ranged from acknowledging and modeling to demonstrating and directing. Parents had particular skills in responsive teaching and use of resources to support children's interests and their teaching spread across the continuum, particularly including the non-directive approaches. This was illustrated in the comments by Alistair's family at the beginning of the chapter, including the focus on "encouragement and giving him time and the opportunity to do stuff". Some early childhood and school teachers also used a range of teaching approaches across the continuum, but the directive dimension of teaching was observed more than expected from teachers. Some early childhood and school teachers were particularly directive.

Peers were particularly influential at "socialising"; mediating what they considered socially acceptable for a 4-year-old. The influence of peers particularly highlights the importance of acknowledging social constructivism.

The consideration of resources as teaching tools connects social constructivist and cognitive constructivist theories of learning. Piaget (1972a) acknowledged the importance of the environment and resources in directly providing learning experiences. Vygotskian perspectives consider social mediation purposes of artifacts and props (1978). Regardless of the paradigm, data from this study affirmed that early childhood centres and families had a rich variety of resources for children. Parents and kindergartens shared a holistic, responsive view of resources, for example in recognising that outdoor play and creativity were important aspects of children's learning. Parents were

particularly able to use resources to mediate learning, rather than simply provide, or direct. Children themselves were responsive to diverse resources in diverse ways, and were able to make connections between resources from different contexts; between home and early childhood, and home and community settings. The preschools, however, placed more emphasis on academic aspects of their programme than kindergartens. The Montessori centres, because of the particular programme philosophy, required children to use resources in particular ways for defined purposes.

Although generalisations have been made, every family, early childhood centre and school was unique. The four different approaches to teaching and support that emerged from the four schools in this study illustrate different philosophies and practices for supporting children and individual learning needs. In an ideal world, children would be able to be matched to the early childhood setting or school that suited them best. In reality, it would seem that children use skills to adapt and accommodate themselves to their environment. The interactions with peers and some teachers illustrated that the children were also resilient. The children's individual learning styles and self-regulatory abilities will be considered in more detail in chapter 7.

CHAPTER 7 BEING A LEARNER

We were amazed at how fast... Something just opened up and there he was ... It was almost overnight – that was it, he just knew how to read ... at 2 ½ [years old], everything happened for David. I'm finding it difficult to pinpoint – it was not over an extended period ... It was like the penny dropped one night. I remember him bringing me a book to read, then Bang! he could read. Wow! I was amazed. (D: parent interview, p. 6)

David's parents, in the quote above, focus on *David's* learning, not on their own 'teaching'. They acknowledge that he would initiate storybook reading with adults by bringing books to them. They also reported that the process of learning to read was an extremely rapid, self-internalised experience. Finally, their amazement at his ability and achievement also illustrates that they gave credit to *David* (not themselves or others) for his success. Consideration of the process of the children's learning is integral to this chapter, as is recognition of the children's role and their experiences

In this chapter, the focus is on the children as learners; their actions, inclinations and receptivity to learn. In the first part of the chapter, aspects of self-regulated or deliberate metacognitive learning are discussed. In the second section, dispositions for learning are described, and in the third section, the concept of spontaneous learning, as reported by parents, is considered. Results of special ability rating scales are reported in the final section. Because teaching, social support and resources were the focus of chapter 6, in this chapter the focus returns to the children. A holistic focus on learning, rather than an exclusive specific focus on literacy competencies, influences the chapter.

7.1 Self-Regulated Learning

The children participating in this study had strong self-regulatory and, self-management skills. The section begins by discussing links with the zone of executive functioning (see chapter 2), and then considers aspects of self-regulation, including logical problem-solving, self-concept, memory and motivation.

7.1.1 *Zone of executive functioning: 'A way of analysing what the problem is'*

The zone of executive functioning (ZEF) focuses on independent, child-centred factors, due to the withdrawal of the scaffolding support from the Zone of Proximal Development (see chapter 2 and Berk & Winsler, 1995). The ZEF appears to link with research literature relating to metacognitive thinking and reflection, self-teaching and self-evaluation. In this study, many examples were provided of children's systematic or metacognitive thinking. Nathan's mother noted that he had a strong sense of how things "should" be. Later in this chapter, related dispositions of curiosity, logic and order, and internal control are discussed. Children combined systematic and analytical approaches to learning with questioning, reflection and memory.

He has a way of analysing what the problem is – probably putting a grown-up context onto it. He has the ability to think a problem through and think of a way to fix it. I never thought about it [before]. A very quick learner. (D: Parent interview, p. 3)

He sits and looks a long time first, then gets it right when he tries. He's pretty successful, whether riding a trike or whatever – I don't see that he gets it wrong. (A: Parent interview, p. 2)

Several parents of children participating in this study highlighted a specific focus on self-teaching. The children were perceived to "teach themselves" more than they were "taught" by others. When asked "Who is it, if anyone, who has mainly taught your child?" – Henry's parents emphatically stated "Henry!" (H: Parent interview, p7).

She taught herself, that's the amazing thing. (G: Parent interview, p. 6)

Reading – she sussed that one out. (E: Parent interview, p. 5)

Mostly he's a self-starter – we try to keep up with him. (H: Parent interview, p. 7)

Children who participated in this study made comments that evaluated their task completion and showed awareness of the upper limits of their ability, knowing when they were getting something "wrong". They also appeared to enjoy a challenge, not wanting experiences that were too easy. This implies that the children in this study had awareness of their own zone of proximal development (Vygotsky, 1978) and were thus able to operate in the ZEF. The children were able to self-assess their own achievement. Gillian had drawn some hearts on her work, and was proud of having learnt to draw them recently. She pointed to them, explaining "These ones are good one, and these one are not very good" (G: field notes, p. 4).

Children showed self-reflection as they read. Isla was aware when words became too difficult for her on a reading assessment, saying, "I don't know these words". Her comments coincided with the point at which she did begin to make errors. At the exact point the test procedures suggested I should ask her to stop, she emphatically stated, "That's all", indicating she wished to finish the task (I: field notes, p.2). Gillian also appeared to know the precise accurate level of her reading ability. At the third reading passage, she stated, "My energy's gone away now" (G: Field notes). Half way through the last set of comprehension questions, at the level appropriate for ending assessment, David similarly stated, "I think I've done enough reading now, thank you!"

Henry's new entrant school teacher encouraged him to set goals for himself during his first term at school. The three goals Henry negotiated with his teacher were "to go outside more", "to write longer stories" and "to say kind things". These goals illustrate his awareness of and reflection on personal, academic and social challenges.

7.1.2 Logical problem-solving

Children commented that they enjoyed completing puzzles and problem-solving challenges. They were enthusiastic about the two forms of puzzle included in the study: the standardised *Coloured Progressive Matrices (CPM)* and the informal use of the three-dimensional puzzles.

CPM norms used were from Great Britain, for children aged 5:03 to 5:08; the highest percentile band on these norms is above the 95th percentile. Seven of the 11 children scored at or above the 95th percentile. Only one child scored poorly (see Figure 36). The New Zealand *Competent Children* studies (for example, Wylie et al. 1996) also included *Coloured Progressive Matrices* assessment, and I had hoped to be able to compare the children participating in my study with the wider cohort. However, after deciding to include the task in my study, I discovered that only selected items from the matrices (14 items rather than the full test) were included in the *Competent Children* project (C. Lythe, personal communication, October 2000). Thus, a direct comparison between the results would not have been possible.

I offered children the opportunity to try a three-dimensional puzzle to provide variety amongst the activities tasks children completed with me (see *Appendix O*). The puzzle was also carefully chosen to be within where I predicted the children's zone of proximal development to be. No children were able to complete the puzzle independently, but all were able to complete the puzzle when supported. On the puzzle activity, children were engaged and persistent. Some comments and results are shown in Figure 36.

	Coloured Progressive Matrices raw score (max 36)	CPM Percentile	Comments from children as they completed CPM	Comments from children as they completed 3D puzzle
A	22	95		What does this one have to have on it up here? ... I get it!
D	23	>95	No, because that one is ... so it's supposed to go that way	Ha ha, that side matched this time, ha ha I'll trick you this time!
E	23	>95		This is harder than I thought ... I don't want a clue
G	19	75-90	I'll have to have a think about that	I'll start all over again because I want to do the same way as it was before
H	23	>95	I am sure it is that one - anyway it couldn't be any of those.	
I	18	75		
J	8	5		It's supposed to go here ...
L	27	>95		
M	16	50-75		
N	21	90-95		
O	26	>95		

NB: highest per centile band possible is >95

Figure 36 . Results of logical problem-solving activities.

Some of the schools shared maths assessments taken during the children's first weeks at school. David's assessments showed that he could round numbers to the nearest 10 (for example, 88 rounded to 90, 51 rounded to 50), use ordinal numbers (for example, to identify the fifth number from a list), and use the symbols $<$, $>$ and $=$ correctly.

The problem-solving results show that although many of the children scored highly, they were not all exceptionally high. This illustrates that precocious reading ability does not necessarily mean that the children were gifted in areas other than reading.

Nevertheless, children's comments during their completion of both the *CPM* and the 3D puzzle illustrate that they enjoyed challenges and new experiences. Their body language and sustained focus also reinforce this broader interest in learning, which is supported by the fact that *all* the children completed the *CPM* or asked to finish the 3D puzzle. Data which affirms the children as "interested learners" is just as important to this study as the formal results of the problem-solving tasks are.

7.1.3 *Self-concept: "I'm a good reader"*

Children's self-descriptions also illustrated an awareness of their own abilities. David's mother told me that he had said "I'm brilliant", referring to himself (D: parent interview, p. 5). Alistair's teachers noted that "He has commented he is clever" (A: field notes, p. 5). When I asked Oscar's parents how he saw himself as a reader, they stated:

Oscar's father: He knows he's good

Oscar's mother: He doesn't show off – he's not one for bringing attention to himself

Oscar's father: He will sometimes say, 'I'm a good reader . . . always known he's good'.
(N: parent interview, p. 13)

An additional behaviour relevant to this section pertains to children's comparison of themselves with others. This is a form of comparative self-evaluation. Comments ranged from tentative awareness of others through to strong awareness. The following comments are responses to the interview question: "How do you think [your child] sees him/herself as a reader?"

Not sure if he recognizes the fact that he's young to read, though ... I think he knows that what [he's] doing is for a 5-year-old. Confident, has ability. (M: parent interview, p. 10)

He knows he's good. He knows his friends can't do it. He doesn't boast or tease. I've talked to him about when God created him, he gave him a special gift – he does understand that. (H: parent interview, p. 11)

He thinks he's a good reader, a great reader. He knows he's special. He says that as well, knows he's special. He knows he's smart for a 4-year-old, sometimes acts it out. Can be too smart at times. He's not cheeky, but can rub it in, rub it in to [his sister]. (D: Parent interview)

Not all children engaged in comparisons with others. When asked the same interview question “How do you think [your child] sees him/herself as a reader?” several parents commented that children reflected on their own achievement and progress:

I don't think she compares herself with anyone as such. I never heard herself say that to me. She has told me that she's in the purple level and is happy to be in that level, but has never talked about other children. (J: parent interview, p. 8)

She doesn't see herself in any particular way. I don't think she sees herself as any more capable. I don't think she sees herself as any more capable [original repetition]. It's still that way. It's something she has always been able to do; she probably thinks everyone should be able to read that way. (E: parent interview, p. 9)

Normal. I don't know that she's aware she's brilliant . . . She enjoys it. She's happy with being able to read. It's just another something she's able to do. (G: parent interview, p. 9)

Research from Chapman and Tunmer (2002), linking self-concept and reading ability, was reported in chapter 2. Although formal measures of self-concept were not undertaken in this study, during many discussions with parents and teachers there did not appear to be any evidence of low self-concept. It is not possible to ascertain whether early reading ability caused or completed strong self-concept, but it is likely that by the time children joined the study, the ‘reciprocal boot strap affect’ applied to both ability and self-concept owing to the reinforcing experience of ongoing success.

7.1.4 *Memory: ‘Like a sponge’*

Parents of children participating in this study noted their children's inquisitive nature and thirst for knowledge. The analogy of being a ‘sponge’ was repeatedly used as the children ‘soaked up’ all that they could from their environment. When I visited Henry's school, the teacher said to me “he's such a sponge”. (H: School1)

He learns from everywhere. Comes home with things from other kids' houses, TV, books, phrases from the computer. The ‘sponge analogy’ – learns from everywhere. (A: Parent interview, p. 10)

It put me off when he wanted encyclopaedias read. He likes picturepaedia. He likes things with facts more than stories, like a sponge, wants to learn things. (O: Parent interview, p. 8)

It does not even seem like Matthew is learning. Yet he is constantly absorbing information and remembers them in context, and that is just amazing. (M: Parent interview)

As well as absorbing information ‘like a sponge’, children were also reported to have excellent memory skills. They learnt quickly and retained their knowledge. Perez,

Peynircioglu and Blaxton (1998) noted that learning strategies could be secure at a young age. While conceptual explicit memory performance improved with age, certain forms of memory performance were not affected by age. The results suggest that the processes that guide performance on both perceptual implicit and perceptual explicit tasks as well as on conceptual implicit memory tasks appear to be fully functional at an early age” (p. 183).

Just really quick in grasping anything. Anything you teach her once or twice she gets it. At the [early childhood] parent-teacher meeting the teacher confirmed it – she grasps things very quickly. (J: Parent interview, p. 3)

He has a very good memory . . . he really could remember it - he had that retention of his memory. (L: Parent interview, p. 7)

Because they're born with three trillion brain cells, the more you use the more you retain. I don't believe it's an overload to inform them if they ask, give the answer. It's difficult to see what their world is going to be like when they are adults. I hope they'll be able to cope with the complications that will be there at the time and still be happy and successful. (H: Parent interview, p. 11)

Memory is important because understanding of children's learning necessarily involves more than one perspective. The social constructivist perspective highlights the role of parents and other involved people who support children to develop their growing memory-use skills. Cognitive constructivist and information processing perspectives acknowledge the role of the individual in developing and using memory-use strategies (Hulme & Roodenrys, 1995). The bio-ecological model also acknowledges innate and potential capabilities of individuals. The parents' reference to children learning 'like a sponge' acknowledges the role of the individual child. No matter how much information is provided *to* children, whether they learn is influenced by *their* thirst for learning, and how willing and able *they* are to absorb new knowledge.

7.1.5 *Motivation: "Pleasure from completing something"*

Oldfather and Wigfield (1996) make the unsurprising research conclusion that "when children believe they are competent and efficacious at reading, they should be more likely to engage in reading" (p. 91). It is also unsurprising that parents of the precocious readers in my research frequently pointed out that their children engaged with reading because they personally enjoyed it; if they had not sustained self-motivation to read,

then they would not have gained the reading experience that they had. Later in this chapter, motivation and engagement are explored within the learning dispositions of “passion” and “persistence”.

Csikszentmihalyi (1978) links engagement with “emergent motivation” through the learner becoming caught up in the activity. In terms of reading this is demonstrated when by children lose track of time and becoming immersed in reading, thus demonstrating what Csikszentmihalyi describes as the “flow experience”. Oldfather and Wigfield (1996) extend the concept of engagement with their construct of the “continuing impulse to learn . . . characterized by intense involvement, curiosity, and a search for understanding, as the learner experiences learning as a deeply personal and continuing agenda” (p. 94). The children participating in this study clearly had a strong continuing internal impulse to learn.

She feels pleasure from completing something. (G: parent interview, p. 3)

It all comes from her. (I: parent interview, p. 4)

If he wants to [do something], he'll just do it. If we want him to – nothing [will motivate him]. (O: Parent interview, p. 3)

David's mother: If it's something he's interested in . . .

David's father: Yes, that's the key. If he's not interested then he'll go so far then not bother. (D: Parent interview, p. 3)

She's always been a very independent child, from 2, 2 and a half. [Her sister] is the other way around – needs us around. Julia doesn't need us around – she'll find something to do, and does it. Self-motivated I think. [Her father] is a lot like her. (J: parent interview, p. 2)

Csikszentmihalyi (1990) noted that the “flow experience” is impeded if there is a mismatch between skills and opportunities for challenge. In my study, parents affirmed the necessity of an appropriate level of challenge for children. David's mother stated, “He is frustrated at preschool now, and ready to move into the next level, he can do that level. He could do it now, wish he could” (D: field notes, p. 3). Once David was aware of how to do the three dimensional puzzle that I brought with me, he asked to do it again, completing it on the second attempt within about a minute. He clearly wanted to achieve completion of the activity (D: field notes, p. 5).

At the teacher interview she showed us an example of his work: /h/ hat. He never got around to cutting it out, couldn't see the reason for doing it. (O: Parent interview, p. 4)

Many of the children responded well to challenges provided within competition; parents did not see challenge and competition as negative. Isla, for example, “loves competitive games” (I: Parent interview).

More simply, McNabb (1997) states, “the concept of motivation is understood by researchers, educators, and lay people as the difference between *potential* and *performance*” (p. 408). Precocious readers were clearly uninhibited in their early reading performance, which allowed them to extend their literacy skills and potential. A pertinent consideration is whether the children are able to maintain motivation for optimum performance, or whether they focus on fitting in – even if this means sacrificing their potential. The data shared thus far from this study suggests that some highly achieving children prioritise social acceptance over performance to their achievement potential.

7.2 Learning Dispositions

In this section, the discussion on learning dispositions from chapter 2 is connected with results from my research exploring evidence of dispositions that contribute to the intellectual thinking, academic development and social contribution of young learners from the case studies of precocious readers. When I analysed data from my study, 11 dispositions for learning emerged. *Subsequent* to my analysis, I turned to literature and read about dispositions, (see chapter 2). I had not read extensively on this topic previously, not expecting the findings to take me in that direction. From my reading, I first concluded that the set of dispositions that I had extracted from my research data was broader than the set of learning dispositions described by Margaret Carr (1999, 2001). On reading further, I found that three of my “new” dispositions were included in the thinking dispositions discussed by Perkins et al. (1993). Thus, 10 of the 11 dispositions derived from my research combined the intellectual emphasis included in Perkins et al. and the sense of social agency or responsibility in Carr’s work. The 11th disposition derived from my research is the disposition of “being passionate”, and is additional to the dispositions discussed by either Carr or Perkins et al. Links between learning dispositions from Carr, Perkins et al.’s thinking dispositions, and the

dispositions of children from this study with precocious readers are presented in Figure 37.

Learning dispositions (Carr, 1998b, 2001)	Dispositions from this study with precocious readers	Thinking dispositions (Perkins, Jay, & Tishman, 1993)	<i>Te Whāriki</i> Early Childhood Curriculum (Ministry of Education, 1996a)
Courage	Courageous		Belonging
Curiosity	Curious	Seek and evaluate reasons	
Trust and Playfulness	Trusting and playful	Broad and adventurous	Well Being
	Logical and ordered	Intellectually careful	
Perseverance	Persevering	Sustained intellectual challenge	Exploration
	Inquiring	Planful and strategic	
Confidence	Confident	Clarify and seek understanding	Communication
	Passionate		
Responsibility	Responsible		Contribution
	Internal control	Metacognition	

Figure 37. Dispositions: Three models.

Because Carr's (1998b, 1998c, 2001) learning dispositions are particularly well known in the New Zealand early childhood education sector, the four dispositions from my research that are additional to Carr's list: inquiry, logic and order, passion and internal control are summarised here (the full set of dispositions will be discussed later in this chapter):

- *A disposition for inquiry* reflects the learner who is inquisitive, explores, studies and researches.
- *A disposition for logic and order* reflects the learner who delights in number, pattern and predictability.
- *A disposition of passion* reflects the learner who is emotive, excited and enthusiastic about their learning, who is "on fire" to learn.
- *A disposition of internal control* reflects the learner who takes responsibility for their own learning and for their successes and failures.

Description of these additional dispositions from my study is not meant to imply that they were missing from previous studies. Carr (1998b) notes, “This framework of dispositions emerged from observations of children” (p. 20), within five early childhood settings. The framework that has emerged from this study with precocious readers also came from observations of children, but different children, at a different time and place, and was limited to 11 children.

7.2.1 *A curriculum framework for dispositions*

Learning dispositions, from Carr’s (1998a, 1998b) assessment project and Podmore and May, with Mara’s (1998) evaluation project have been linked to the New Zealand early childhood curriculum *Te Whāriki* (Ministry of Education, 1996a) strands (Carr, et al., 1998). The dispositions that have been derived from my study with precocious readers, also link to all five strands of the curriculum (belonging, well-being, exploration, communication and contribution), and conversely the five strands still accommodate the broader range of dispositions from my study (see Figure 38). Discussion of the 11 dispositions that emerged from this study will now follow, grouped by the *Te Whāriki* curriculum strands of belonging, well-being, exploration, communication and contribution (Ministry of Education, 1996a).

7.3.2 *Belonging: Courage and curiosity*

The *Te Whāriki* strand of belonging has the primary purpose of ensuring that “children and their families feel a sense of belonging” (Ministry of Education, 1996a, p. 15). Dispositions from my study that link to the strand of belonging are being courageous and curious. Carr’s (1998b) discussion of the learning dispositions of courage and curiosity, noted that that these dispositions enable children “to find something of interest”, and Perkins et al. (1993) referred to a disposition for sustained intellectual challenge; my interpretation of “being courageous and curious” for the children in my study encompasses their need for intellectual challenge and curiosity.

<u>Learning dispositions</u>	<u>Action & behaviour</u>	<u>Te Whāriki</u>
Courage and Curiosity <i>(to find something of interest here)</i>	Taking an interest	Belonging Mana whenua
Trust and Playfulness	Being involved	Well-being Mana atua
Logic and Order	Being satisfied	
Perseverance <i>(to tackle and persist with difficulty or uncertainty)</i>	Persisting with difficulties and uncertainties	Exploration Mana aoturoa
Inquiry <i>(to examine, study, research and be inquisitive)</i>	Engaging with challenge, investigation	
Confidence <i>(to express an idea, a feeling, or a point of view)</i>	Sharing a point of view or feeling	Communication Mana reo
Passion <i>(to have ardour, enthusiasm, desire, fire & excitement)</i>	Being expressive	
Responsibility <i>(for justice and fairness, and the disposition to take on another point of view)</i>	Taking responsibility	Contribution Mana tangata
Internal control <i>(Responsibility for own successes and failures)</i>	Reaching potential, self-extending	

Based on Carr, et al. (1998) (Bold content denotes additions from this study of precocious readers).

Figure 38. Learning dispositions and curriculum.

Microsoft Thesaurus [Microsoft Word Thesaurus, Version 2002] provides synonyms for courage, including bravery, valiance, grit, guts, nerve, heart, patience and audacity.

These words bring to mind a child who not only perseveres, but that also faces obstacles and challenges when making contributions. In chapter 6, examples of social challenges and negativity toward precocious readers were discussed. The children in my research were interested in topics that had advanced subject content (astronomy, history, paleontology) and advanced concepts (death, aging, family responsibility). Their

inclination toward intellectually challenging experiences and time with older peers were balanced against social expectation of same-age peer group interaction. At times, the children dared to be different (had the courage to be curious), yet fundamentally they needed to be included and accepted.

Curiosity is a disposition natural to all young children. Whether the curiosity of precocious readers is any different than for other children would be difficult to prove empirically. However, results of this study suggest that the participating children had understanding of a broader range of knowledge and concepts. This may mean they were more broadly and deeply curious. Henry, for example, extended the stimulus of a group sea mural to being curious about Antarctic cod: could they have fur to keep warm he wondered? He suggested that the people at Scott Base would know about Antarctic cod and animatedly discussed his ideas about how to contact Scott Base with a teacher while painting blue waves alongside other children.

He asks a lot of questions – not always at reading, at other times. Even when we drive the car he will ask about what he's read. (H: Parent interview, p. 11)

In settings where children's curiosity is truly fostered, courage may be subtler. In early childhood education, learning should be so natural and instinctive that children learn 'just because they do'. It would also be adultocentric (Litowitz, 1993) to assume that curiosity necessarily means children will ask questions of adults. As discussed earlier, constructivist theories of learning note that children will create their own ideas about learning based on their experiences of the wider world and their own ideas.

7.3.3 *Well being: Trust, playfulness, logic and order*

The *Te Whāriki* strand of well-being has the primary purpose of ensuring "the health and well-being of the child are protected and nurtured" (Ministry of Education, 1996a, p. 15). Relevant dispositions for the children participating in my study are trust, playfulness, logic and order. Trust and playfulness are dispositions previously referred to by Carr (1998b); logic and order is a disposition that emerged from my data but links to Perkins et al.'s disposition of being intellectually careful.

For young children, trust includes a necessary dependence and reliance on adults. The children in this study had relationships within which they could question, critique and debate. Fundamentally, however, children trusted that parents and teachers would carefully consider their affective needs. Taylor (1996) notes that gifted children “relate to the environment in unique ways . . . they may perceive intellectually things which they do not as yet have the emotional skills to cope with” (p. 393). For example, when Henry’s younger brother had a hospital appointment, Henry read information on the waiting room wall about Sudden Infant Death Syndrome (SIDS, also referred to as ‘cot death’). The information made him upset and worried about his brother, interfering with his sleep for several months. Hospital staff would not normally consider that a 4-year-old would be able to read such detailed medical information. In another example, Henry’s parents asked me to ensure that the dinosaurs in any stories I gave him were herbivorous. Henry could identify and classify many kinds of dinosaurs, and was terrified of carnivorous dinosaurs but he was interested in the herbivores. He knew, that “Pteranadons have a silent P” (H: Field notes), and were extinct, but he was frightened by illustrations of them (H: parent interview, p. 6).

Davis and Rimm (1994) link humour and playfulness to creativity, stating “humor is a first cousin to the ability to take a fresh, childlike, and playful approach to problems” (p. 35). With the exception of one “solitary” and “serious” child, all of the children in this study appeared to be happy and settled, and I saw them all smiling and laughing on occasion. For most 4-year-old children, delight and fun occurs naturally and spontaneously. Davis and Rimm (1994) note that humour can be superior with gifted children owing to their enhanced cognitive processing and interpersonal confidence, yet there is obviously a danger in trying to define humour as “superior”. The anecdotes below involve an element of playful creation. Henry adored games with language and music. He enjoyed playing with language, often to music or rhyme. Amongst peals of laughter, he created a special rhyming song for his baby brother (H: Field notes). David was playing a card game with a girl. He sang to himself, then laughed and explained to her that he had changed the rules and tricked her (D: ECE2, p. 3).

All children deserve an environment where fun and laughter are enjoyed with others. In at least one early childhood setting, adults demonstrated their belief that learning involves “paying attention” and “concentrating”, and is thus quite separate from “playing around” or “being silly”. One of the early childhood teachers repeatedly reminded one of the children of the “correct” way to play a game. When the child I was observing laughed, the teacher said, “if you’re going to be silly, you can’t play”. Children learn through interaction and discovery: “the creative adult is essentially a perpetual child, the tragedy is that most of us grow up” (Fabun, 1968 as cited in Davis & Rimm, 1994 p. 35). On the other hand, this does not mean that children should be denied intellectual extension so that they just enjoy being a child. One of the early childhood centres disapproved of a family who supported a child’s passion with computers. They felt he should be “playing” instead of attending computer classes, even though he played games on the computer and “just loved it” (Teacher interview).

Logical-mathematical strengths emerged as being relevant to the children even though interview questions and observations did not specifically or intentionally explore mathematical interests. Vialle (1994) considers logical-mathematical intelligence to be the ability to explore patterns, categories and relationships by manipulating objects or symbols, and to experiment in a controlled, orderly way (Vialle, 1994). Davis and Rimm (1994) also state:

In light of their swift and logical thinking, it is no surprise that questioning ability, a good understanding of cause-and-effect relationships, convergent problem solving, persistence (Cox, 1926; Walberg *et al.*, 1981), and insight (Davidson, 1986; Davidson and Sternberg, 1984) are frequently cited as traits of gifted children (p. 30).

Mathematical exploration and equipment are regular features in early childhood settings in New Zealand. The children participating in my study may have been particularly drawn to mathematical activities, however, because of a logical disposition or a *need* for logic and order, for example, when using patterning or puzzles. Children demonstrated interest in experimentation with regular materials, such as puzzles, blocks and *Lego*. These activities allow children to explore and create with an open-ended approach but with logically ordered materials. The data from this study suggests that a disposition for logic and order is linked to the disposition of perseverance. Children enjoyed the

opportunity to engage with tasks involving repetition and clear completion. Early childhood education experiences certainly need to include open-ended tasks, but there is also merit in allowing children the satisfaction of task achievement:

He was always ahead with patterns. (A: parent interview, C2, p. 4)

An avid puzzler. I buy hard puzzles – 50 pieces and up. David will figure it out before the end of the day. On Saturday morning he'll be sitting with the puzzle going over and over it. (D: parent interview, B2, p. 3)

During the administration of standardised assessments, several children showed an interest in number, exemplifying the fact that the children's cognitive ability was not centred on text reading only. The children appeared to be as genuinely interested in number as they were in reading. They did not seem to have been drilled by parents (see chapter 6). Parents and teachers reinforced that the children in this study had gained competent numerical knowledge at an early age:

He could count very early. He recognised the alphabet letters very early too. (N: parent interview, C10, p. 5)

Her number knowledge is fantastic . . . she didn't appear to be processing, she didn't want to work it out, just said it . . . She's quite a bright little button, full stop. (G: school 2, p. 1)

7.2.4 *Exploration: Perseverance and Inquiry*

The *Te Whāriki* strand of exploration states, “the child learns through active exploration of the environment” (Ministry of Education, 1996a, p. 16). Children who participated in my study demonstrated the disposition of persevering, linking to Carr's (1998b) learning disposition of perseverance and Perkins et al.'s (1993) thinking disposition to “seek and evaluate reasons”. A second disposition that relates to exploration is inquiry; this is additional to Carr's (1998b) learning dispositions, but relates to the “planful and strategic” thinking disposition of Perkins et al (1993).

Parents commented on children's perseverance and perfectionism. Although some children demonstrated attributes of perfectionism and frustration, most children participating in my study displayed attributes of diligence, determination, concentration and perseverance with tasks.

He worked diligently and wanted to be successful. (M: Parent interview, p. 2)

His perseverance with activities like the computer. (M: Field notes, p. 3)

The teacher at her previous preschool said she [Gillian] would concentrate enough to see it through to the end . . . The teacher commented that some other children gave up when puzzles were difficult . . . She has a longer attention span than most children. (G: Parent interview, p. 3)

When asked how Nathan attempted new tasks, his parents replied:

Nathan's father:	Usually with grim determination.
Nathan's mother:	He'll have a go. Has pretty good patience for a little child, his frustration point is quite high.
Nathan's father:	When he was 2 he used to spend a long time doing jigsaws and not get frustrated. (N: Parent interview, p. 2)

Although persevering was more often described, there were some references to perfectionism. Perhaps because the participating children had experienced significant academic success, a tendency toward perfectionism was apparent in a few instances.

When completing the interview checklist, Erin's mother paused at the statement 'Anxious about perfect work', then emphatically stated 'YES!' Children may have been used to achieving well and expected to do so consistently. Some children became frustrated when their own standards were not met:

She gets frustrated at times. She'll try two or three times, then gets frustrated. She likes things to come to her quite easily. A bit difficult. I remember when she was a small baby she did everything early. You know – they roll over and then sit up – she just sat up. (J: Parent interview, p. 2)

David doesn't like being told what to do at times . . . David doesn't like to make a mistake. Gets cross if told he's wrong . . . Not keen to take risks. (D: School 1, p. 5)
He is not a big risk-taker – needs to be 100%. (D: School 2, p. 2)

Inquiry is a disposition that illustrates the way that the children participating in my research investigate, examine and study ideas, their interests and scientific curiosity. Components of inquiry include being able to sustain perplexity, being critically aware, and being continuously skeptical. The learning disposition of perseverance is a critical aspect of exploration, but only one aspect. A learning disposition of inquiry describes the child's *want* to learn; perseverance is application of that desire.

Schema (Athey, 1990) are an example of explorative thinking, investigating concepts (such as "vertical" or "rotational"), connections and representations (Meade, 1995; Meade & Cubey, 1995). Teachers may observe, consider and cater for children's schema thinking. However, it is *the child* who originally generates the schema interest

and conceptual inquiry. Often, schemas are apparent to teachers only because children have so clearly engaged in activities that allow them to investigate the schema further. The definition of schema as “pieces of thought” (Meade, 1998, p. 27) highlights thinking rather than teaching. One of Oscar’s parents noted that it was the *process* of learning rather than specific knowledge that inspired him, saying “I think he likes the thought of something new” (O: Parent interview, p. 9).

Metacognition is cited as a thinking disposition by Perkins et al. (1993). Metacognitive inquiry and problem-solving can be linked to the *Te Whāriki* curriculum strand of exploration (Ministry of Education, 1996a) through the following goals for children’s learning:

- “they learn strategies for active exploration, thinking, and reasoning” (p. 88)
- “they develop working theories for making sense of the natural, social, physical, and material worlds” (p. 90).

7.2.5 *Communication: Confidence and passion*

Carr’s (1998b) disposition of confidence clearly relates to the *Te Whāriki* stand of communication. Being a confident communicator also links to Perkins et al.’s (1993) thinking disposition of clarifying and seeking understanding. An additional disposition of ‘being passionate’ emerged from this study with precocious readers, acknowledging the non-verbal, affective forms of communication. A disposition of being passionate also encompasses specific important goals and learning outcomes of the ‘communication’ curriculum strand in ways that ‘confidence’ may not. The strand goals include an emphasis on verbal communication, *non-verbal communication*, cultural stories and symbols, and *being creative and expressive* (Ministry of Education, 1996a). The italicised goals relate particularly to being passionate.

Are precocious readers more confident and active communicators than other children are? This is also a question that it is not possible to answer empirically. It does appear that the precocious readers in this research had the confidence and ability to

communicate at an advanced level. However, adults must understand and appreciate children's cognitive abilities for communication to be effective, as the following example demonstrates. A child and several friends were playing dinosaurs at kindergarten. They were using footballs as their eggs, and the child I was observing was incubating the eggs. In their play, a ferocious meat-eater was nearby, and some of the children needed to go hunting. The child, being responsible for the eggs, began gathering up the football eggs. The children began arguing over the best place to hide the eggs from the meat-eater, and a teacher came over to resolve their supposed conflict. She had seen that the child had several footballs, heard some raised voices and made an incorrect assumption. She told the child to share and said that the other children might want to kick a ball too (ECE1). The child *had* been sharing, and the children had shared in an experience despite their varying levels of knowledge about dinosaurs. The teacher had not understood their play and had misinterpreted their communication. A significant body of research highlights the importance of effective communication between adults and children, including the research surrounding joint attention (Rogoff, 1990; Smith, 1996), intersubjectivity (Berk & Winsler, 1995; Bruner, 1995; Nuttall, 2003; Rogoff 1990), responsive communication (Howes, Phillips & Whitebrook, 1992), and co-construction (Jordan, 2003; McNaughton, 1995; Rogoff, 1990). All of these research perspectives highlight the importance of reciprocity and shared understandings as two key elements of communication within high quality early childhood communication (Carr, et al., 2000).

Davis and Rimm (1994) describe "extremely bright children" as having "emotional excitability" (p. 31), and Taylor (1996) notes "unusual emotional depth and intensity" (p. 392). The passionate motivation for reading was a key factor in earlier research of New Zealand "young able readers" (Margrain 1998). A disposition for passion links to the communication strand of *Te Whāriki* because children not only "confidently" communicate their ideas and understandings; they also passionately communicate their enjoyment of and passion for the process of learning. As well as being motivated, children from this study were engaged as readers and learners (see chapter 5). Parents used the following words when reporting their children's engagement with reading:

“likes”, “loves”, “prefers”, “wants”, “obsessed”, “interested”, “happy”, “enjoys”, and “devoured”. These descriptors link well to the *Microsoft Thesaurus* [Microsoft Word Thesaurus, Version 2002] synonyms of passion including obsession, zeal, ardor, excitement, enthusiasm and delight.

7.3.6 *Contribution: Responsibility and internal control*

The *Te Whāriki* strand of contribution (Ministry of Education, 1996a) asserts that opportunities for learning are equitable, and each child’s contribution is valued.

“Children experience an environment where:

- there are equitable opportunities for learning, irrespective of gender, ability, age, ethnicity or background;
- they are affirmed as individuals; and
- they are encouraged to learn with and alongside others” (p. 16).

The curriculum therefore does not only place responsibility on children to contribute to society: it also reminds us of society’s responsibility to ensure that children are fully, and equitably, supported to reach their potential. In chapter 2, I reported research that questions that gifted children receive educational support to allow them to reach their potential. All of the children in this study attended early childhood education for at least 15 hours per week. Part of their early childhood experiences involved sharing, cooperating and contributing with other individuals. Erin took responsibility for tadpoles in her early childhood centre, trying to keep other children’s fingers out of the water (ECE2) and Oscar called out to his teacher that he would finish his art at home, as he needed to help at tidy-up time (ECE 2, p.1). There were instances where the children were leaders although overall my observations were of the children as colleagues, allowing their peers to be leaders also. For example, David was perceived to be the computer ‘expert’ in his early childhood centre. On the day of one of my school visits, he was the book monitor (D: field notes). A group of children came inside to find Lewis and ask him to resolve a conflict they were having outside (L: ECE 2).

However, it is important that contribution and responsibility are not simply concepts expected *from* children. Social responsibilities of justice, equity and fairness of relationships must be extended *to* children. Some of the precocious readers in my research had not had their abilities recognised by teachers: there were some negative reactions to parents and barriers to young children accessing extension opportunities.

Davis and Rimm (1994) describe internal control as a concept evident in children who “feel responsible for their successes and failures and who feel in control of their own destinies” (p. 32). Internal control is a critical disposition because it provides differentiation from luck or chance achievement. A learning disposition for internal control acknowledges the responsibility of individuals for achieving their achievement of potential, capability, capacity and faculty. These characteristics relate to precocious readers because of their clearly demonstrated “performance” capability.

Schunk (1989) defined self-regulated learning as “learning that occurs from students’ self-generated behaviors systematically oriented toward the attainment of their learning goals. Self-regulated learning processes involve goal-directed cognitive activities that students instigate, modify and sustain” (p. 84). Biemiller, Shany, Inglis and Meichenbaum (1998) propose that “it may be only rarely that children under 4 or 5 years of age will be able to truly self-regulate activity” (p. 209). Self-regulation was discussed in some detail in chapter 2. Children participating in this study link to the description of self-regulation provided by Paris and Byrnes (1989) who state, “Some students thirst for learning. They seek challenges and overcome obstacles sometimes with persistence and sometimes with inventive problem solving. They set realistic goals and utilize a battery of resources. They approach academic tasks with confidence and purpose” (p. 169). Parents highlighted issues of challenge and competition. In part this was seen as intellectual challenge – to avoid getting bored, and at times this was about achievement: being “a winner”. Often children’s own motivational desire for learning and personal achievement led to a demand to be taught. Children’s learning disposition of internal control shaped their learning potential, driving them to achieve to their potential.

Needs to be challenged – David and [his sister] need to have something to challenge them. (D: Parent interview, p. 4)

He is motivated by the challenge, the race. Likes competition – getting into the car first, getting the car seat belt on . . . (O: Parent interview, p. 3)

My name is David. I am in [name of school house]. I want to be first [story by David on wall at school]. (D: School 2, p. 1)

I think she has to do it; she has to get it done. (J: Parent interview)

7.3 Spontaneous Learning

Parents perceived that the learning of children participating in this study to be “instantaneous”, and they described a different concept from the zone of proximal development and the zone of executive functioning. A key difference is one of rapidity: a “flash” of inspiration or a “moment” of intuition are terms we use in discussing learning. This view links to the differentiated giftedness-talent model of Gagne, which recognises the importance of a learning “catalyst” (1985, 1991), that the catalyst will often be external, but that receptivity to the catalyst is within the learner. Spontaneous learning can also be linked to independent and non-conscious learning acquisition, described by Lewicki, Hill and Czyzewska (1992), and to the work of Walters and Gardner (1986), who refer to a “crystallizing experience”. Crystallizing experiences are not “sufficient for ultimate achievement”, but can, when timely, prove to be powerful (Gardner, 1986). The experiences of the children in this study illustrate that it is the individual’s receptivity rather than the experience that is ultimately decisive. Inagaki (1987) notes the ability of young children to make spontaneous developmental gains, and discusses children’s “genetic predisposition” for learning (Inagaki, Hatano & Inagaki, 1992).

Thompson and Fletcher-Flinn (Fletcher-Flinn & Thompson, 2000; Thompson & Fletcher-Flinn, 2003), in their work with precocious readers, refer to “induction”. As described in chapter 2, they describe Induced Sublexical Relations (ISRs) as the source of many precocious readers’ ability to read, and discount explicit “working out” as the sole explanation for reading. The process of calling upon implicit theories is not, however, confined to the process of reading. Perez et al. (1998) have provided evidence

that implicit memory processes are fully functional at a very early age rather than developmental. Dienes and Perner (1999) also investigated the role of implicit knowledge. *Microsoft Thesaurus* [Microsoft Word Thesaurus, Version 2002] provides three relevant definitions for induction: reasoning, making electricity, and initiation.

These definitions link to this study in the following ways:

- Although spontaneous learning differs from ZEF/metacognitive reasoning, it does involve reason in terms of intelligence and understanding.
- The electrical analogy of a ‘spark’ or ‘bolt of lightning’ describes the spontaneous learning catalyst.
- Initiation acknowledges the learner rather than the teacher.

In this study, many parents referred to their children’s implicit and intuitive understandings as “spontaneous learning”; the example of spontaneously learning to read was discussed in chapter 5. Sometimes parents referred to children’s “teaching themselves”, but clarified that “it just happened” or was “natural”. It therefore appeared that children’s learning was not always taught, not always metacognitive, and sometimes spontaneous.

A little concerned at the fuss everyone was making over his reading – it is just something that happened and no big deal . . . spontaneous. (A: field notes, p. 1)

Isla revealed she could read just before 3 years when she took a cereal packet out of the cupboard and began to perfectly read what was written on the side – I couldn’t believe my ears. [The packet text] included the word ‘fantastic’. (I: Parent interview)

Several of the children were not aware that other children couldn’t read; they thought that everyone “just could” read. Oscar would not have been able to articulate all of his computer skills, or describe the skills that he had not yet mastered, he simply used (and explored) the computer. Other parents affirmed that the learning “just happened”, but inadvertently propose as a possible reason that children sometimes learn so rapidly that it is impossible to tell if they are passing through stages or leaping them. It would be interesting to further this question with some experimental research.

It may be compressed in my memory, but it seemed to go quickly from knowing names and knowing sounds to being able to attempt words – all within a span of 3 months. (H: parent interview, p. 6)

She's one of those kids that things happen so rapidly through the stages that you just about miss it. (E: Parent interview, p. 5)

Erin's mother described to me her opinion that she viewed Erin's reading was something that had 'just happened', and that Erin had ownership of it (Field notes). David's parents commented that his reading development didn't appear to be in stages – the comment was made repeatedly that it happened 'overnight' – 'one day he couldn't read, the next he could' (D: field notes, p. 3).

Children autonomously create and capitalise on opportunities to learn. Co-construction describes a process of shared understandings and interaction that acknowledges the important role of the learner (Jordan, 2003; McNaughton, 1995; Rogoff, 1998). However, co-constructive perspectives may also imply that learning *necessarily* occurs in collaboration with an adult or peer. For example, Malaguzzi (1993) stated'

The term 'co-construction' emphasizes the child as a powerful player in his/her own learning. The child as co-constructor provokes an image of the child as 'rich in potential, strong, powerful, competent, and, most of all, connected to adults and to other children (p. 10).

The children demonstrated that they are rich in potential, strong, powerful and competent²⁴. However, my thesis challenges that the learning is *necessarily* through connection with adults or other children; this is often so, but not necessarily at all times. Children also "just" learn; it would be adultocentric (Litowitz, 1993) for adults or peers to claim responsibility for, or even partnership with, all the learning of children. Children are not merely recipients of given, or even shared, experiences; they also exploit situations and resources to best advantage and actively generate learning opportunities. Erin's mother highlighted her daughter's independent learning, stating:

She's quite happy to go off and learn ... will go off and read a book because it's something new. (E: Parent interview, p. 4)

A more egalitarian view of power and influence is proposed by Baker, Scher and Mackler (1997): "The direction of influence is not simply from parent to child; rather, children's behaviors influence those of their parents, which in turn influence future behaviors of the children" (p. 78). Scarr and McCartney (1983) proposed biological effects "determining not only which environments are experienced by individuals but

²⁴ Also 'ready, willing and able' (Carr, 2001).

also which environments individuals seek for themselves” (p. 424). If we honour the child as an active, empowered learner, then we also acknowledge that adults learn from children. As Oscar’s father related,

He likes sharing things with us too. [Oscar’s voice mimicked] ‘Did you know hedgehogs can’t climb?’ . . . I think he likes the thought of something new. (O: Parent interview, p. 9).

7.4 Special Ability Rating Scales

The results of two special ability rating scales are reported on in this section. Each scale used a multi-categorical perspective of special ability, not focusing exclusively on intellectual abilities or literacy. Each of the scales provided useful information about some of the children, but neither of the scales identified all of the children in this study as having special abilities. The scales are a quick and easy addition to a repertoire of potentially useful strategies that could be useful in supporting young able children.

The first scale, a checklist of 15 items, was completed by parents during semi-structured interview (Jones, 1988, see final page of *Appendix L*). The checklist suggests that if eight or more items are checked, further assessment is warranted, and if 12 or more items are checked then the child is almost certainly gifted. Only one child scored 12 or more (Nathan, who had 14 of the 15 items ticked). However, all except one child scored at least 8, meaning that if the test was used in a school, further testing should have followed (see Figure 39). The only child who scored less than eight was the youngest (aged 4:01), signalling that identification approaches for young children need to be varied; no single method is definitive, and the youngest children are at greatest risk of being missed.

Only two items were checked by *all* parents, suggesting that these items have particular significance. The first was: “asks a lot of questions”, affirming the children’s expressive communication skills and inquiring disposition. The second statement was: “shows interest and aptitude in many areas”, acknowledging a holistic perspective of the children. Six additional items were checked by at least eight of the 11 parents, indicating that they are also items of particular importance for the children in this study:

“learns new material quickly”, “has a larger than usual vocabulary for age”, “has a quick sharp memory”, “is able to verbally express ideas easily”, “has a long attention span”, “adjusts to change easily” (see Figure 39).

	A	D	E	G	H	I	J	L	M	N	O	Total
Has a quick sharp memory	√	√		√	√	√		√	√	√	√	9
ASKS A LOT OF QUESTIONS	√	√	√	√	√	√	√	√	√	√	√	11
Is nervous about relationships with other children				√						√		2
Learns new material quickly	√	√	√	√	√	√	√		√	√	√	10
Easily performs difficult manual tasks	√								√	√	√	4
Is bored by normal activities			√					√		√	√	4
Has difficulty making friends										√		1
Shows unusual talent in a special area such as music or art		√	√		√	√		√		√		6
SHOWS INTEREST AND APTITUDE IN MANY AREAS	√	√	√	√	√	√	√	√	√	√	√	11
Has a larger than usual vocabulary for age		√	√	√	√	√	√	√	√	√	√	10
Prefers solitary activities			√	√							√	3
Is able to verbally express ideas easily	√	√		√	√	√		√	√	√	√	9
Is anxious about work being perfect			√		√					√	√	4
Adjusts to change easily	√	√		√	√		√	√	√	√		8
Has a long attention span	√		√	√	√	√	√		√	√	√	9
Total	/15	8	8	9	10	10	8	6	8	9	14	11

Bold statements are those which at least 8 families ticked, with capitals for the 2 most common statements. Shaded columns denote the children with 8 or more of the 15 statements ticked.

Figure 39. “Describing your child” checklist.

When completing the interview checklist, parents added anecdotal comments that strengthened their responses. For example, when checking the item “is anxious about work being perfect”, Henry’s parents wrote “Yes, yes, yes!” For the item “has a long attention span”, Oscar’s parents added “especially computer and reading”.

McAlpine and Reid’s (1996) *Special Ability Rating Scale* involves rating the strength of statements on a four-point scale. The scale has five clusters of characteristics: learning, social leadership, creative thinking, self-determination and motivational (see *Appendix M*). The scale was completed for nine children in the study, either by parents or by teachers. Five of the nine rated children were rated as having a probable or highly probable strength (see Figures 40 and 41). Each characteristic cluster applied to at least one child; however, of the nine scales completed no single characteristic cluster had any

more than three children rating strongly. No child rated strongly in every category of characteristic, although it should not be expected that children must demonstrate ability in every area. Interestingly, the most cognitively able child in the study was one of five children who did not rate strongly in *any* of the characteristic clusters.

	J	A	M	O	D	E, H, I, L
Learning Characteristics	Highly probable strength	Highly probable strength				
Social Leadership Characteristics	Highly probable strength					
Creative Thinking Characteristics	Highly probable strength	Highly probable strength	Probable strength			
Self-Determination Characteristics	Probable strength		Highly probable strength		Highly probable strength	
Motivational Characteristics	Probable strength			Probable strength		

Figure 40. Special ability rating scale domains of strength.

	Probable Strengths	Highly Probable Strengths	Maximum Rating	Ratings with strength
Learning Characteristics	43-45	46+	52	A: 51 – Parent report J: 51 – Teacher report
Social Leadership Characteristics	37-39	40+	48	J: 47 - Teacher report
Creative Thinking Characteristics	33-36	37+	44	J: 41 – Teacher report A: 38 – Parent report M: 36 – Parent report
Self-Determination Characteristics	28-31	32+	36	D: 32 – Parent report M: 32 – Parent report J: 31 – Teacher report
Motivational Characteristics	27-29	30+	32	J: 29 – Teacher report O: 27 – Teacher report

Figure 41. Special ability rating scale scores.

7.5 Summary

This chapter has discussed three particular aspects of being a learner: self-regulation, learning dispositions and spontaneous learning. Children as learners have been central to this chapter, with recognition that they contribute to and co-construct learning. The children's self-regulatory ability was illustrated by the children's metacognitive and problem-solving skills, and their self-motivation. The children illustrated competence within the zone of executive functioning.

Although the special ability rating scales did not confirm conclusive identification of special ability, the reading results reported in chapter 5 provided domain-specific evidence of ability. Parents referred to some children's learning as "spontaneous", commenting that it "appeared from nowhere". Social support is, of course, important. However, the data in this study illustrates that adults are not responsible for, and cannot claim credit for, everything children learn.

Simply having ability is not necessarily meaningful. Carr's (1998) dispositions have been strongly connected to the New Zealand curriculum *Te Whāriki* (Ministry of Education, 1996a) strands and goals (Carr et al., 1998). However, the dispositions from this study can also be linked to the curriculum strands. As well as linking to the curriculum, dispositions of logic and order, inquiry, passion and internal control strongly relate to self-regulative strategies, such as self-concept and motivation. Dispositions for learning are particularly relevant when one considers the academic potential of precocious readers; the children *can* learn effectively, *do* learn avidly, *desire to* learn, and *are driven to* learn.

Dispositions can also reflect personal learning styles and strengths, which can be built on for "survival" in a social world. The dispositions of internal control, perseverance, confidence and responsibility may particularly support children's resilience and social participation. In the following chapter, children will again be viewed within a social world, their abilities and dispositions being linked to self-expectations and parents, teachers and peers' expectations *for them* and *of them*.

CHAPTER 8

EXPECTATIONS AND ADVOCACY

I am checking ERO reports. Am looking at a school that has extension/enrichment – a prerequisite . . . extension/enrichment, behaviour of children, flexibility, a ‘feel’ – a whole gamut of things . . . I don’t want him to be bored. If he’s bored he’ll talk – can lead to put-downs. I want him to fit in and feel part of it, to feel comfortable.

Parents, teachers and the children’s peers all had expectations of children, including what it means to ‘be a 4-year-old’. They also had individual reactions to the abilities of the children in each case study. As in the vignette at the start of this chapter, parents of children in this study balanced a number of factors, particularly children’s social and emotional well-being and the need for the children to be challenged. Parents did not focus on academic factors exclusively; however, it was parents who were the key advocates for academic challenge and extension. There was tension between the need for children to have their special abilities recognised and catered for (through extension/enrichment), and the need for them to “fit in” (to belong and feel part of it, to feel comfortable). In other words, they were different, but did *and* didn’t want to be seen as different.

In the first part of this chapter, the expectations for the children held by teachers, parents and the children themselves are reported. In particular, the tension between the need for children to be challenged and extended while not being “pushed” is discussed. In the second section, parental expectations of teachers are reported across early childhood and school settings. The early childhood data illustrates that parents heard different expectations from different services within the early childhood sector. The data from new entrant class settings reinforces the tension between “fitting in” socially and individual, intellectual needs.

Children’s self-expectations are critical dimensions to consider; expectations are not simply imposed by adults. Children’s self-regulation, including self-concept has been considered within chapter 7.

8.1 Expectations for Children

Expectations held for children are considered in this first part of the chapter, including expectations of parents, teachers, peers, and the children themselves. Firstly, age-related expectations are discussed, including social pressure to conform to what was considered to be age-appropriate for a 4-year-old. Secondly, the importance parents placed on children's social and emotional needs is reported, with parents stating that they did not want undue pressure placed on their children. Parents also emphasised the importance of supporting children's potential and providing challenge.

8.1.1 Age-related expectations: "How old are you?"

Perspectives of how a 4-year-old 'should' act repeatedly emerged within this study. Teachers and the children's age peers appeared to focus on chronological age, making judgements about what they considered to be age-appropriate. The peers applied strategies for social inclusion and exclusion to influence the children's behaviour (see chapter 6). Parents appeared to be more flexible and based their expectations on their children's individual potential, but reported they repeatedly received age-related comments from other people.

Teachers highlighted the chronological age of the child, with statements such as "just a little 4-year old". Teachers may have commented on the children's chronological age to justify systems that keep the children with their age peers rather than ability peers.

David is still a little boy – cries if he doesn't have a pencil (teacher).

She's a little girl, matches my group. Things that match her match my group [of children the same age] (teacher).

(Despite her reading ability) In other ways she's a normal little 5-year-old (parent).

Social positioning based on age might be expected in early childhood centres that include infants, toddlers and young children, for example, the older children having seniority. It might also be assumed that horizontal age-groupings would avoid any social hierarchy based on age. All of the early childhood centres involved in this study were restricted to children aged 3 and 4 years, with many of the sessions being for 4-year-olds only. However, the children appeared to be well aware of fine degrees of

chronological age. Because most New Zealand children begin school on their 5th birthday, there seemed to be more status for a child with, for example, a March birthday than an April birthday because the child with the March birthday would have their party first and would go to school first.

An example of the awareness and judgment of children regarding chronological age involved a group of children looking at a bowl of tadpoles. Some of the children reached in to touch the tadpoles. The child participating in my study told the other children "Don't touch it, otherwise it won't grow". A peer turned to the child and asked "How old are you?", as if to query the child's right to comment, implying that children perceive that older children have more authority or right to comment than younger ones do. The child responded to the question by holding up four fingers. The peer then sought clarification by asking, "Are you 4 ½ ?", affirming the idea that being older has more status amongst the children. The child then asked the peer, "Do you wanna come to my birthday party?". This appeared to be an attempt to seek social acceptance. The peer then sought clarification again, asking, "Are you nearly 5?". Erin replied, "I'm 4 ½" (E: ECE2, p.1). Being "nearly 5" has more status amongst children than being 4 ½, which in turn has more status than being just 4 years old. Children explored these shades of difference in age in their dialogues with one another.

Early childhood teachers reinforced this social hierarchy with regular comments about the order of birthdays and the order of when children would be going to school. This social hierarchy reinforced that the social "order" is based on age, not height, cognitive ability, leadership skills, socio-economics or length of time at the centre. It may be that New Zealand teachers feel that, if there must be a "pecking order", age is a more comfortable criterion in a supposedly egalitarian education system.

Some teachers focused on children's difficulties rather than their strengths. A school principal, for example, told one child's mother that unless a child was outstanding in every curriculum area they could not possibly be gifted. Another teacher minimised a child's reading ability by noting that the child was "still a 5-year-old writer". In another

example, a family member who had been a primary school teacher warned a family in this study that the teachers would see early reading negatively and give them “a hard time”. This deficit approach highlights the child’s “needs”, and also validates the teacher’s role to “help” the child. This approach may indicate that some teachers wanted to find reasons to justify that the children were not “special”. The examples reflect the “dumbing down” of “tall poppies” as described in chapter 2.

A former kindergarten teacher of one of the children in this study met the child’s primary school teacher at a professional meeting. The kindergarten teacher said how lucky the school teacher was to have the child in her class, and what a wonderful reader he was. The primary school teacher reportedly snorted and said, “Hm, but he can’t tie his shoe laces and he takes forever to eat his lunch”. She also criticized him for sitting and daydreaming alone with his lunch on his lap instead of playing with the other children as soon as possible at break times. The school teacher valued independence in her class pupils more than advanced academic skills. The kindergarten teacher reported this anecdote to me because she was sad that the child’s ability and potential was not appreciated once he began school.

It is interesting that 20 years after publication of Macaluso and Busche’s (1985) article *If I can read at a fifth grade level . . . Why can’t I tie my shoes?*, that issues of cognitive ability and independence continue to be positioned as contradictory. Other school teachers have described to me that they considered that it was their job to teach children to read at school, but they expected them to come to school with skills of independence. Some school teachers clearly enjoyed the professional aspects of their job, such as teaching reading, but rejected so-called “child care” roles such as helping with lunches and clothing. Therefore, the expectations that teachers had of children were not only about what 5-year-olds should be able to do for the children’s own well-being. The teachers’ expectations of children also strongly related to their perception of their own role as teachers. Expectations were placed on children regarding how they should “fit in”, how they could make life easier for the teachers, and how they could make teachers’ work more satisfying. When early childhood teachers are aware of this perspective,

they are faced with an interesting ethical dilemma: does part of preparing the child for school include preparing them for school agendas and expectations, even if these are not child-centred?

8.1.2 *I don't want . . . a pushed child*

Parents, in this study, expressed the wish that their children *not* have unfair expectations imposed on them. The parents did not want limits imposed on their children's potential (see 6.3.1), but also didn't want the children to feel "pushed", "under pressure", "different" or "misunderstood";

They go, 'Oh, Wow! He's very bright – he's genius material.' It makes one very uncomfortable. Or they say 'He's Dux material' – I don't want expectations put on him of what he'll be when he's 17. I don't want him to be a pushed child. (A: Parent interview, p. 7)

Parents acknowledged that they didn't want the 'academic side' of their children to be focused on exclusively. They wanted their children to have experiences that would support cognitive, affective, social and physical skills. The experiences were provided as "opportunities", without achievement expectation. The children were involved with a range of activities including music, dance, swimming, playing with friends, visiting the beach, computers, building, drawing, languages, and family walks (see chapter 6). Parents did not "hothouse" the children with standards to achieve in each area; they simply wanted their children to be "broad". Alistair's mother stressed that his reading was just "one part" of him. She provided a list of "things that are more important to later life" than reading:

- To socialise with other children confidently and effectively.
- To have an understanding of other people's feelings
- To use manners and socialise effectively
- To develop the co-operative skills you need as a grown-up.

Parents also wanted to provide experiences so that the children had *opportunity*. The expectations that parents had included that their children be open-minded, curious, active and social. With some of the activities, the children were naturally exceptional, with others, they were participants, but in neither case were they 'pushed'. The parents believed that if "pushed", their children would feel stressed and unhappy; they focused on strategies which supported "happy and healthy" children.

8.1.3 *We encourage them to do whatever they can*

Parents had insisted that they did not want their children to feel pressured by external expectations; however, they also recognised that the children needed challenge. Parents were aware that general expectations of what a 4-year-old could do were lower than what their children could achieve in specific areas, and this meant that some opportunities were normally not available. For example, a child wanted to attend computer-based math classes with his older sister, but the organisation offering the class initially insisted that he would not have the concentration or ability at age 4 to handle them. Parents saw their role as supporting, encouraging, advocating and minimizing barriers. One mother pertinently stated, “We don’t impose any limits ... we encourage them to do whatever they can”:

[We] Don’t stop encouraging. We don’t impose any limits on what he wants to do, or read, and [his sister]. We encourage them to do whatever they can. ... I have tried to encourage him, point him in the right direction, open doors If anything, the frustration is to convince the authorities that he’s ready to do these things. They say we don’t do these things before [age] 4 or 5, we need to keep at them to give him a shot. (D: Parent interview, p. 13)

An interesting finding from the study was the differing, sometimes conflicting, perspectives of teachers and parents. For example, an early childhood teacher had concerns that a parent “didn’t allow” this “poor child” any “play” time, but instead focused on “only academics”. The parent perspective was that she was responsive to her child’s passion; he had begged to “play schools” and learn more things, and he found the reading material provided by the teachers to be so simple that he had asked for more challenging material. When judging parents, it must be remembered that as well as representing their own interests, they also act as advocates for their child. The “play” that occurred in this home reportedly included academic elements *because it engaged the child*. Intellectual play is nevertheless still play:

We do school sessions on a Saturday if time permits. One of us is the teacher or a student. We do spelling, times tables. We line up the chairs, have pretend students – teddy bears. My living room changes around – it’s a painting room, a classroom, a living room.

The early childhood teachers commented that the child of another family got quite a lot of academic “stimulation” and “rote learning” at home. When I commented to the

teacher that some children “taught themselves” I was advised she wasn’t sure that I’d find that on this occasion: “they have *Reader Rabbit* on the computer and so on”²⁵. As discussed in chapters 6 and 7, children can direct their own learning, including when using props such as computers. The early childhood teachers felt that their early childhood centre had provided the only context in which the child “learned to laugh, to play and to be a child”. The quote below illustrates that the parent perspective did link learning and play:

Telling stories ... every night. We sometimes play with him and read, you know. ... some writing time and reading. He plays by himself. I don’t try to impose on him. He tells me ‘Mummy, I want to write, I want to read’ ... he wants to be a pilot [so] he knows how to read maps, knows continents ... It depends on his interest, the more he knows. He likes *Bob the Builder*²⁶, so knows parts of the house.

Teachers at another early childhood centre were concerned that the abilities of the child participating in this study might lead to his thinking he was “better” than others. Parents appeared to mediate this concern by balancing individual challenges with skills for social participation:

He’s slightly confused by why everyone doesn’t (read) – why all his friends don’t. It worries me that he’ll say this to others ... I don’t want him to have an ego. Recently he said (about another child) ‘how come I know lots of stuff and he doesn’t?’ I said “he know lots about Australia – maybe you should ask him about that”. (A: Parent interview, p. 10)

8.1.4 *Summary of expectations for children*

Early childhood teachers, new entrant teachers and children’s preschool peers all reinforced social hierarchy based on age, with older 4-year-olds having higher status. This social hierarchy reinforced expectations around the milestone of “turning 5”.

Expectations for children transitioning between early childhood and school settings are influenced by the perceptions of teaching roles. Some school teachers had expectations that children should have self-management skills and be able to “fit in” socially at school. They did not expect children to be academically advanced and did not necessarily appreciate their being so. Teachers’ expectations of children related to their

²⁵ Reader Rabbit is a popular series of computer software for early learning, including early literacy skills.

²⁶ Bob the Builder is an animated television and book character who has a building/construction company.

perception of their own roles as “teachers”; they expected to be teaching reading and not performing “child care” duties.

Te Whāriki, the New Zealand early childhood curriculum (Ministry of Education, 1996a) has a holistic perspective of the child, with the five curriculum strands being “belonging”, “well-being”, “communication”, “contribution” and “exploration”. The expectations that parents had for their children supported this broad curriculum focus, balancing affective and cognitive dimensions of the children. Parents were aware that for children to be truly happy and healthy they should be appropriately challenged, yet not under stress. Parents also acknowledged that expectations should be pertinent to the individual child: parent expectations differed for Alistair, David, Erin, Henry and each of the other children.

8.2 Parent Expectations of Early Childhood and School Teaching

Parent expectations of early childhood teachers were influenced by the type of early childhood service their child attended. Early childhood was seen as a time for both learning and play, although the balance between these aspects was seen to vary between kindergarten, Montessori and “private preschool”.

Parent expectations of primary school teachers focused on the tension between ensuring that children were happy and were stimulated. This tension reflects the earlier discussion in relation to children’s need to be challenged without being under “pressure”. Parents wanted their children to have further challenges, but didn’t want to have to ask the teachers for anything special for their child.

8.2.1 Expectations of early childhood education – “They learn [and] play”

Parents had expectations that sometimes differed from the perspective of early childhood teachers. While early childhood teachers focused their discussion on play and social interaction, there were academic learning opportunities within the programme that were valued. Parents evaluated early childhood education by considering the social, affective *and* cognitive needs of their child. When asked if she had any goals for her

daughter's early childhood education, one mother wanted a "balanced education" (E: Parent interview, p. 9).

A mother appreciated the physical and social play experiences that kindergarten offered her son, although she felt his previous centre had been more intellectually stimulating. She stated, "Kindy is physically enough, though not mentally". She wanted the kindergarten to support socialisation, confidence, compassion, manners and cooperative skills, and did not feel that reading was a necessary objective for the teachers to focus on. She stated,

Reading is him – these things are more important to later life, to help be a part of society, not aggressive (Parent interview).

Open communication between the kindergarten and family was highlighted at another kindergarten. The mother described the teachers' willingness to consider planning extension activities for her child if needed: "we've discussed things a lot as we've gone along". However, it was agreed by both teachers and parents that the regular early childhood programme appeared to be enough and the child concerned "provided his own extension" (EC teacher interview).

Another parent commented on her expectations of the kindergarten teachers as trained professionals. She believed that these expectations were not met in many ways, particularly with literacy and school transition. She decided that kindergarten supported the child's social needs, and "any other gaps" could be addressed by the family.

But in some ways I was disappointed – their philosophy has not changed to cater for the twenty-first century child. They are not accepting that most of these children have skills that previous children didn't have. They are fearful of encroaching on schools – for example with teaching the alphabet. The way I saw them using big books made me want to ring up and ask how they teach kindergarten teachers now – I saw big books folded over on their knee – why haven't they got an easel? Why not show kids words, why aren't they? [Are they] lacking on knowledge or fearful?

The only thing I want from the kindergarten for Isla was her great need of social skills and friends. I don't care about anything else – she's a people person there – anything else is a bonus. [My goals for her are that she is] prepared for school, able to socialise and share. How to cope when a child snatches, skills in a group, that's all. [Isla's mother] and I have the skills to fill any other gaps if necessary.

Kindergarten was described as "only a play school" by one family, although they appreciated that this was important for social skills: "When there, they see other

children, they learn, play, they need the experience". It was commented that the child would be going to "learning school" [primary school] soon (Parent interview).

Parents did not see organisational structure and routines as a key strength of kindergartens, particularly in afternoon kindergarten sessions or sessions that had a wider mix of ages. Parents did, however, note that there were "realities and constraints" for teachers:

Mother: Social skills ... there's only so much that adults can provide. He's very good around adults, not shy at all, but with children, it is different. He doesn't know how to approach them to say, 'Can I play with you?' – he will go and stand in their face. But more and more he will say, 'I'm lonely, I want a friend'. I had hoped that he'd learn a routine, but they have a floating morning tea. My friend's child is finding it difficult to adapt [to school] because s/he is not used to the structure.

Father: But there's a reasonable routine at home.

Mother: Not lessons, but a living routine. I wish they'd had the two sessions²⁷ – then the morning would have been more structured. But I know the teachers can't be everywhere at once, and we don't have the numbers for two sessions (parent interview).

Most of the parents of children at "private preschools" and Montessori "preschools" saw early childhood education as preparing for school. They also reported that they had deliberately chosen preschool forms of early childhood service because they believed that they were more formal, structured and academic. Despite this perception, many families felt that their children could be working at a higher level than expected by the early childhood centre teachers.

He only has the rest of this year. We want to see him with a really good grounding for moving into 5-year-old 'real school', as opposed to preschool. It certainly worked for [his sister]. She was well-prepared, well-prepared . . . He is frustrated at preschool now and ready to move into the next level, can do that level. He could do it now, wish he could (Parent interview).

We trust the [pre]school, but one thing I ask is push, push, push. They tell me '[he] is a preschooler: they don't do homework' (Parent interview).

The thing that gets her going most is if she has competition. She's bored at preschool now because she's at the top of the range: there's no challenge. She's clingy in the mornings, won't let go, holding on more and more. She used to do that at kindy, used to cry. It stopped when she went to preschool, it was obviously what she needed. She was happier, using her brain. Do schools do that? (Parent interview)

²⁷ The mother here is referring to many larger kindergartens having two separate rolls: older children in the morning (generally 4-year-olds) and younger children in the afternoon (generally 3-year-olds). This smaller kindergarten had one combined roll of 3 and 4 year olds.

Our aspirations are for him to extend and use the challenge of an all round education i.e. general knowledge/geography/maths and in addition to (be) improving his reading ability. (Parent interview)

A mother said that her choice of centre included consideration of learning and structure. She didn't like the "free play" philosophy of other forms of early childhood service.

Family friends shared their philosophy of early education.

For early childhood I thought Montessori was a good method of teaching. When we came here [she] was 2 years old. We didn't know much about how things were taught here. We talked to friends. She's not the type ... in kindy they go from activity to activity ... she's the type to sit and wants to finish. In kindy kids are running around - I'm not sure if this is right [information]. We were very new. [Our friends] prefer to keep the children home and teach them than send them to kindy. We went to the [Montessori] school to see what they did and we liked it. (Parent interview)

Preschool parents however also commented on how much they valued their children's contentment and enjoyment of their early childhood centre. When asked if she had any goals for her daughter at her preschool, one mother stated:

I don't really. Obviously the preschool is offering her reading and maths. I certainly don't want her knowing 10 times tables or reading at a particular level. She really enjoys it and that's the most important thing. Contentment, whether academic achievement or her own example is very important. (Parent interview)

Parents appeared to have higher and more defined expectations of the preschools than of the kindergartens. This would be partly because the 'preschools' were fee-paying (approximately \$100 per week) while the kindergartens had a minimal charge or donation asked for (see chapter 3). Parents expected a stronger academic aspect to the 'preschools', and believed that the main strength of kindergartens was social interaction between children. The various expectations parents had of early childhood teaching no doubt differ from the philosophies held by the services themselves. However, underlying expectations regardless of the service acknowledge the importance of *both* social and cognitive opportunities in early childhood education.

8.2.2 *Expectations of school – 'Hopefully the school will understand her needs'*

Two key themes emerged from data regarding parent expectations and values relating to beginning school. Firstly, parents affirmed that it was important their children were happy, confident and settled. Secondly, they asserted the importance of challenge and stimulation. These factors are complementary, yet also in tension with each other.

Although it can be difficult to facilitate an effective balance between challenge and support, providing children with appropriate challenges is part of providing support and contributes to children's happiness and satisfaction.

Parents recognised both cognitive and affective aspects; key issues for children were independence, motivation and social interaction. Motivation was linked to appropriate challenge; however, social and personal goals for children in the first few months at primary school were frequently also mentioned as important to parents. One mother stated that her goals for her daughter would be "integration with school friends" and "a feeling of 'this is my school and be happy about that'".

Mother: That he'll get enough stimulation to keep him intrinsically motivated, that he'll be happy, make friends, not be bullied in the playground ...

Father: I don't know that I've thought about it much – I hope he'll find that he can learn a whole lot of new things, not just in books. If it's only what he (already) knows he'll wonder what the point is.

Mother: That he'll eat his lunch (Parent interview H:F8).

Another family highlighted social and behavioural goals when considering goals for their child during her first few months of primary school. "Above all", they hoped that 'positive attitudes' toward reading and learning would be maintained, and not "destroyed":

Adjusts happily to the teacher and routine of school. Hopefully, the school will understand her needs and be very conscious of not destroying the positive attitude she has at this stage, and that she will understand her personality ... That she'll settle happily and is happy. It won't matter if she doesn't make a huge amount of progress. May need to monitor her adjustments – she could fly ahead (Parent interview).

Parents were particularly concerned that schools provided an environment within which the children participating in this study were challenged and stimulated. Fear of boredom was a repeated concern of parents. The comments below are all from interviews with different families, even though the comments made are similar:

I don't want him to be bored. If he's bored he'll talk – can lead to put downs.

My biggest worry is that she'll get bored. They have a sunshine room for the new entrants. I hope she doesn't get bored – a couple of weeks there at the most. If there's no challenge or competition, someone to compete against, she'll get bored.

Her brother goes there, it's local. I don't know what we'll do if she doesn't get what she needs from that school. My biggest worry is that she'll get bored. They have a sunshine room for the new entrants. I hope she doesn't get bored – a couple of weeks there at the most. If there's no challenge or competition, someone to compete against, she'll get bored.

I hope it fosters the sort of environment where he *wants* to learn. We don't want a babysitting service, we want his mind stimulated.

My hope for [him] is that when he starts primary school ... I know in my head he'll have no problems. In year one he'll sit in year 2/year 3 reading and maths, will interact with older kids. They won't hold him back, for example, Year 3 reading and year 1 Art. Year 1, 2, and 3 are all together in one big room. The classes go this way (she gestured horizontally and vertically); some have the ability to go up.

The parents were uncertain that school would be sufficiently challenging for their children. Although they continued to want their children to be happy and accepted, moving on to school meant that cognitive challenge within the programme was more of an issue than in early childhood. The parents were concerned that if the children became bored at school it would have a long-term negative affect on their learning and motivation to learn. Parents wanted their children to be accepted and to fit in, but they also wanted assurance that their individual needs would be met. They were worried that unless their children were recognised as “different”, they would not have their academic needs met. However, they were also concerned at any possible consequences of “being different”, and wanted reassurance that their children would “belong”.

8.3 Parent Choices

New Zealand parents choose early childhood services from amongst a number of options, including home-based, parent-led, sessional, full-time and particular philosophies. Parents considered that schools were varied, and they did not necessarily choose the closest school. Choices reflected the philosophies, beliefs and values of individual families. This section describes reasons that parents gave for their choice of early childhood centre and school. The choices relate to parent expectations of teachers, but also reflect pragmatic influences and constraints such as accessibility and affordability.

8.3.1 *Choosing early childhood services*

Many families acknowledged that recommendations from friends had influenced their choice of early childhood centre.

It has a good reputation; our . . . friends told us it is a good kindergarten. (L: Parent interview)

Most of the PIN group were going there.²⁸ (Parent interview O:F3)

Matthew's mother reported a positive experience with her older child's early childhood centre and school, commenting on the "caring, dedicated staff" (Parent interview M:F3), and wanted to replicate the experience.

There were many reputable full-day early childhood education and care centres available in the participating families' communities, but none of the families chose full-day early childhood centres. The kindergartens, private preschools and Montessori preschools involved with this study had part-time hours of 3 to 4 ½ hours per session. Only one child attended an early childhood education setting for more than 20 hours per week. A mother explained that the kindergarten's part day programme enabled her to spend spend time with her son:

I also *like* spending the afternoons with him – we have other kids home etc – maybe I'm being selfish – he's my baby. (Parent interview A:F5)

Another mother stated that she believed children who attended sessional early childhood centres were healthier than those attending full-day education and care centres:

Health – I think the health of children is better in [sessional centres]. The length of day too. He was at work with me [in an education and care centre] – he got everything going around and was susceptible to tonsillitis and ear infections – was getting sick a lot. (H: Parent Interview)

In the New Zealand *Competent Children at Five* (Wylie, et al, 1996) study, only 30% of children had used just one form of early childhood education service. The three mothers in my study who were in paid employment outside the home were all combining two forms of early childhood education; Wylie et al. (1996) refer to this as "packaging". The three "packaging" arrangements were a) kindergarten and home-based care with a family member, b) sessional preschool and a nanny, and c) 30 hours 'fulltime' early

²⁸ (PIN is an acronym for *Parents in the Neighborhood* – a support network for parents.

childhood centre attendance, plus an after-school-care programme with a school-aged sibling. The 'packaging' examples in this study reflect that parents chose early childhood services that they considered would best suit their children. Parents did not choose centres that were open longer, even when more convenient for working parents.

Parents who chose 'private preschools' and Montessori preschools did so for a number of reasons, including "figured it was the best available . . . It provides a good foundation". When describing why they had chosen a preschool, several parents mentioned that they valued the academic focus of preschools. One mother questioned whether other forms of early childhood education enabled children to "focus", but noted that the preschool they chose was an expensive option, not available for all families:

Basically, because she had reading ability and we thought she needed levelling out in other areas. They teach maths skills, etc. They have activities they have to sit down and finish; they are kept on task. Mother-in-law offered to pay. I don't know what we would have done otherwise.

I heard you needed to get names down early so I put her name down at four different places. I felt at [age] 2 ½ she was ready for something.

All of the parents who chose the private preschools specifically valued the preschools' attachment to private schools. The private schools were considered to have strong academic reputations. Parents felt that association with the private schools meant that the early childhood centres would also be academically focused. In addition, some parents believed that by attending a private preschool the child would have more chance of being selected for entry by the schools. Parents of 4-year-olds were aware that acceptance by some schools was a competitive process. Parents were making early childhood choices based on what the service currently offered and also on how early childhood education might facilitate *future* opportunities for the children, including connections with schools.

A mother commented on the Montessori philosophy, commenting that she liked the 'structure and discipline'. The Montessori parents considered that their children's early childhood services were quite different from kindergarten options. A parent commented that her child was studious and liked to complete tasks. She felt that kindergarten would

not suit her child because she believed that children did not sustain activity with tasks for extended periods of time at kindergarten. The parent had not visited kindergarten but had talked to friends who were also parents, asking their advice.

The geographic location of early childhood centres was an important selection factor for parents, particularly for parents who chose kindergartens. Awanui Kindergarten was adjacent to a community shopping centre and across the road from a primary school attended by a sibling and the closest to Alistair's home, within walking distance.

Alistair's mother said that she chose the kindergarten because

It feeds onto Adventure School. I wanted him to make friends to go to school with . . .
Wanting the bonds for school. (Parent interview A: F3).

Affordability was also a factor in selection of early childhood service. Table 3, in chapter 3, illustrates that fees per week varied from a small voluntary donation to \$180 per week for sessional attendance. Some parents noted that if they could have afforded to, they might have considered alternative options.

One family cited a range of reasons for choosing their Kindergarten, including locality, cost, community networks, and 'time out' for the at-home mother. There was a belief that early childhood education was necessary for their child (and sometimes the parents), and a 'family expectation'.

He had to go somewhere – the fees were cheaper than creche ... local.

Father: It gave [his mother] free time.

Mother: Not really – get him prepared for school.

Father: Not really – just improve [Nathan's mother]'s sanity – free time.

Mother: I just assumed he'd go to kindy - (she turned to Nathan's father) you went to kindy.

Father: The creche was for free time. It was a logical progression from there.

We had tried [education and care centre A] and didn't like it. I had a friend who had [her child] at [education and care centre B]. [Centre A] was run by 3 dotty older ladies and seemed like a babysitting service. The creche was used by schoolteachers for an hour or so – I didn't think he was safe. [Centre B] was smaller and better organised.

Overall, parents considered that they had choice, and they were also prepared to change centres if the experience did not suit their child. Parents valued each early childhood service that they used, but the parents who chose more formal 'preschool' types of early

childhood education had higher expectations of the centres, including the expectation that they should challenge the children academically. Parents of children attending kindergarten felt that they should not have the same expectations because they were not paying for the service. Instead, parents of children attending kindergarten focused on social outcomes.

8.3.2 *Choosing schools*

Many factors influenced the selection of schools; these are discussed, and then illustrated with the experiences of two families choosing a school. The case studies highlight that finding a school that suited the children and family was both 'stressful' and difficult.

Parents of the children in this study had all begun looking ahead to when their children turned 5 years old, and where they might go to school. The parents chose schools for their children with great care, considering many factors. Of the four schools included in this research, none were physically closest to the children's home.

Parents recognised that their choice of school environment was a critical factor to their children's affective, social and cognitive development, recognising the importance of belonging and well-being in school environments. The factors parents considered when choosing a school are numerous (see *Appendix Z*). Because some of the factors overlap, they have been grouped in categories. The frequency factors cited for school choices have been converted to a percentage of all responses, shown in Figure 42.

Of the factors influencing school selection, family and community factors were cited most frequently, particularly local and socio-economic factors (34% of all of the comments were in this category). Of course, schools cannot easily change their location, buildings, socio-economic catchment or special characteristics (Catholic, single-sex or co-educational, private, rural or urban, roll size and so on); these factors in fact create the school identity. However, the factors that schools *can* influence if they want to attract a wider clientele include: welcoming factors, staff empathy and

understanding, organisational approaches that provide programmes to support children (for example, extension groups) and reputation. These factors combined to form at least 50% of the considerations cited by parents in this study when selecting schools for their children. In other words, school environments have elements that are distinctive and individual, but also elements that are co-constructive with community participants and that can change according to need.

Selection factors	Examples	Percentage of all responses
Family/community	Being local, socio-economics Friends/friends children go there	36
Reputation	ERO (Education Review Office) reports Internet information	16
Staff	The principal Consistency of staff year-to-year	14
Special school characteristics	Size of roll/individual classes Quality of resources and facilities	14
Organisational/ programme	Extension programmes Streaming by ability	11
Welcome	'A nurturing, caring place' Fit in, feel comfortable	10

Figure 42. School selection factors.

Some parents valued schools according to the decile rating of the school. In New Zealand, decile rating for schools is based on a range of factors such as home ownership, income and household size; decile is a 1 - 10 scale, with 10 being the highest. Schools with lower decile ratings are provided with additional funds and resourcing. Parents believed that high decile schools were of better quality than low decile schools, and more likely to recognise, value and provide for academic ability. This may have been why some parents considered private schools, although only one parent limited her choice to private schools *only*. Schools that had a 'zone' (prescribed geographic catchment area) were also viewed favourably by parents as it indicated demand for these schools. Most New Zealand schools are not zoned, and negotiate a zone with the Ministry of Education only when they become so popular that demand on their resources is stretched. Influences include the following:

[Her brother who goes to the school], I'm in the area, Socioeconomics. Initially [relative] and the kids were here in the community until [brother] was 3 [years old]. I came to the conclusion after looking around the [city] that it was [School i, School ii – both high decile zoned schools] or here. So here was the choice, and [second child] has followed. The school is better than some others. (Parent interview)

The high decile socioeconomics. Most children with needs are in the low socioeconomic areas. (Parent interview)

Most of our friends' children go to the same school. We have no other time to socialise. Those with sons all go in that direction. I was surprised you could go to [private school] if you're only average. One of the mothers told me her son was average, but most schools like to take on the academically gifted. (Parent interview)

Couldn't afford the \$10,000 for [a private school] for [him]. [He] loves it [at School X – Decile 10], enjoys it. (Parent interview)

The data in Figure 42 illustrates that parents made informed choices of school. They “looked around at choices”, talked to friends and school staff, and read reports. Parents did not choose schools based on only one reason or expectation. Their choices included academic, social and emotional considerations; they looked for a school where “children want to learn”.

The varied choices also indicate that different schools meet the needs of different children in diverse ways. No school met every need for every child, and no parent expected this. They acknowledged that the process of choosing a school was finding the best fit possible for the children and families.

8.3.3 *Experiences of finding a school*

The process of choosing a school was, for many families, a stressful experience. The following comments summarise two families' experiences. Both families made a decision to choose state schools, but found strong differences between individual school environments. Neither parent found *any* school that convinced them that they could cater for their child's reading abilities:

[Choosing] has been a hell on earth. A lot of bloody research. The size of the roll, quality of resources and facilities ... We paid attention to the atmosphere, a nice atmosphere. The local school is **Sandy Cove School** – the pool is condemned, the place was untidy – the same with all state schools We seriously thought about home schooling but he is starting to need the social interaction with [child's] peers. I know you can do other things with other home schoolers, but it's not the same as on a daily basis. The state system treats kids as if they're all going to learn at the same pace

[discussion of two other schools continued] . . . We felt happy that we'd made the effort to go round and look.

The following anecdotes all describe the second families search for a school:

I went to **Lakeside School**, and mentioned the word gifted - a friend said you should mention the word gifted to see what response you get - as well as saying he was a good reader. [The principal] asked if he was talented in every aspect, and if not, for example with physical, he is not gifted. I was a bit upset by that, and left there (upset). I heard via gossip that he didn't believe me. He said in the staffroom that a parent had come in and *claimed* her child could read. We were looking for a principal to say 'we will work with you to do what's best for [your child]' . . . The door was closed - not willing to go down that path. The visit was very frustrating. I had asked to see the new entrants' class and the next class up as the new entrants was a settling place. They hadn't rung to say the class would be in the hall. I was pregnant and struggling. If he was bored and a behaviour problem I felt I needed to be taken seriously, if I could go to the principal.

At **Beachside School** the principal quoted the curriculum and what the curriculum said - flexibility to work alongside older children for one subject, flexibility. The new entrant teacher said [something different] . . . I went back to the principal and asked how come the head of school says one thing and you say another, the principal said the head of school decides, and backed down, and said that if we weren't happy with their school we should look elsewhere, the world was my oyster and we could walk . . . It was annoying, as I quite liked the principal. Other things concerned me - crowded classes.

At **Woodside School** the principal was very good at giving me information from the curriculum. I was put off because she only talked about reading. Watching the new entrant class, the learning process for new entrants, I was staggered about how basic it all was. What was he going to do while they were all going 'a/a/A, b/b/B' - it still worries me - what's he going to do? Is he going to play up? There is a community feeling about the principal not being very good. Giftedness never came up. I'm not sure how I'd get on.

With **Hillside School** I was not impressed at all with what [the principal] told me. He told me [my child] would go into the next class - away from (peers) - old hat . . . dismissed it out of hand - most unimpressed at the open night. We're looking for a good education.

Park School [private, with high fees] would extend him no problem, but bankrupt us. Socially I was worried [my child] would have trouble keeping up with friends or accept s/he'd not have everything they had . . . I went into the class with [my child] and s/he didn't feel comfortable - s/he wasn't welcomed, left sitting in the corner.

Riverside School took [my child]. I took [my child] with me on this visit. We happened to have a book in case s/he had to sit and wait. She [the principal] very quickly picked up what s/he was doing and believed everything I said. She was very keen to have [my child] at the school and keen to work with me. The New Entrant teacher had had an early reader herself and had empathy . . . The principal is supportive of his special ability, willing to give it a go. The new entrant teacher's background. Small size . . . (not) a big school - not too daunting. A family atmosphere - all the teachers work together [clarified the school said they weren't sure how to support child, but would try, and would work with the family].

The family who chose Riverside School was reassured to find a school that they felt was empathetic to their child. They valued its small roll, family atmosphere and community location. In particular, they appreciated the school's honesty in saying that they didn't know how to cater for the child's needs, but they would work with the family to do what they could to support the child.

These experiences of trying to find a supportive school illustrate that it can be extremely difficult. Parents found that few schools were able to reassure parents that they would be able to support the learning and emotional needs of their children. Parents found the reality of needing to choose the best of "less than perfect" alternatives to be stressful.

8.4 Advocacy and Support

Parents are children's key advocates, and the parents of the children in this study maintained a balance between social-emotional well-being and asserting the need for challenge and extension for their children. Parents facilitated opportunities for their children to have diverse learning experiences and opportunities. Without the advocacy of one parent, for example, a child would not have been able to attend computer-based math classes. Parents chose early childhood centres and schools carefully, considering their own family values and beliefs and finding out about the philosophies of the centres and schools. Many parents decided to have an 'at home' parent because they believed that it would be the best way to support their children.

However, it can also be argued that the ability of parents to advocate for their children was limited by general social prejudice and misconception. On many occasions, parents felt that it was in their children's best social interests to hide their child's ability. A parent explained that she "bit her tongue" and chose not to comment about "small concerns". Instead, she made sure that she made affirming and positive comments to the teachers about their teaching. She cleaned paintbrushes and put away reading books at the end of the week, helped in the library, was on the fundraising committee and helped with class trips. By contributing her time and resisting approaching with small concerns, she hoped that if there was ever a bigger issue that the teacher would be more

inclined to listen to it. For the same reason, the parents were careful in how they spoke about their child to teachers and other families. They were also careful to be seen to support the teachers – building the foundations of a relationship that might be beneficial later.

Mother: We tried very hard not to talk to other parents [about his reading]. They get green, it feels like you're boasting.

Father: Also, because of your early childhood philosophy about not pushing, or formal teaching.

Mother: I feel embarrassed, people will think I've been one of those pushy parents – it's not very trendy, popular 'PC'²⁹ ... We went to see the kindy teachers when he first started kindy – I didn't want him to be misunderstood.

Father: We don't want him to feel ... that he's different.

Mother: Or embarrassed that people are talking about him over the top [of his head], (H: Parent interview, D9)

Other examples within the study illustrate that people may have been *more* negative *because* of the children's abilities. The new entrant teacher who was frustrated that a child with a reading age of 8 years could not tie his shoelace and ate his lunch slowly may not have been so frustrated with other children in the class if they needed help. Children in some of the early childhood centres excluded children from play as long as they appeared "clever", and included them when they acted the same as their peers.

These examples challenge that advocacy is simply about speaking up for children's needs and rights. Advocacy is also about supporting the best interests of children. In this study, there was tension between advocacy for children's individual needs and for their social acceptance. In many instances, working to cognitive potential would conflict with social inclusion. Children had learned at a young age to adjust their behaviour to different contexts, for example, drawing complex maps at home but doing 'scribble pictures' with friends at an early childhood centre. Many parents appeared to accept that this disjointed functioning was necessary. They focused their support on the areas of extension and challenge in the home context and on social acceptance in the early childhood and school settings, advocating for them both.

²⁹ PC is an abbreviation for 'politically correct'. In this instance the parent is clarifying that it is not PC or socially acceptable for parents to be seen as a parent who "pushes" their child to achieve.

Teachers, as professionals, are also advocates for children. The case studies suggest that teacher advocacy was influenced by a number of considerations: what was in the best interests of the class, what would most effectively support individual children, and what was most supportive for the teacher. Despite the curriculum referring to the needs of individual children, teachers also talked about the importance of not treating children as if they were “special” because then all children would need to be treated that way. An example reported earlier was of the teacher who could not provide books at the child’s instructional level because there would be too many in the group and had sets of only eight books (meaning that the number of books dictated children’s reading group level, not the children’s ability or need). Some teachers advocated a vision to parents that it was in the children’s best interests to learn rules and expectations; if they “settled down into a class routine” the teacher could get on with teaching and the children with learning. This reasoning also suggests that teachers were advocating for approaches that were manageable for them.

8.5 Summary

One of the key findings reported in this chapter was the focus on age-related expectations. The focus on chronological age positioned the children as ‘4-year-olds’ rather than as “precocious readers” or as “children with special abilities”. The children are, in fact *each* of these descriptors. However, there appeared to be a clear agenda from teachers and other children that age should shape socially acceptable behaviour. This view may reflect the principle of egalitarianism, with a hidden agenda of “normalising” the children. Parents were more open to focusing on individual abilities and interests regardless of the age-equivalency of the ability reached. They did not want there to be any limits on their child’s learning although they realised the importance of social acceptance. Parents also did not want the children to be under any external pressure and recognised that motivation and passion were initiated by their children.

Children demonstrated the ability to operate in different ways in different settings. They did “normalize” themselves in early childhood and school settings and accepted the social directives applied by peers. At home, with the support and encouragement of their parents, they flourished intellectually. The children’s ability to effectively operate

in different settings demonstrates Margaret Carr's description of the "bimondial child" (1998d).

This chapter has highlighted the difference between what we say we advocate for children and the reality of their experience. Children are given a mixed message: that schools and early childhood centres are places to learn, play and have fun and also that they are places to conform, 'fit in', learn rules, assimilate and behave.

Parents recognised a particular tension with their expectations of teachers. They believed that they could more effectively advocate for their children at 'critical times' by building a relationship with teachers and choosing not to advocate for the 'smaller' issues. When advocating for children, they acknowledged multiple perspectives: the child's cognitive potential, affective needs and social contexts. At times, however, these aspects were in tension with each other.

At the beginning of this chapter, a parent clarified that her expectations for her son included that he "fit in and feel part of it . . . to feel comfortable". The tension parents found was that "fitting in" sometimes meant being acting "average", yet this process minimised children's opportunity to "fly" and reach their potential. The children are less likely to "feel comfortable" if they have *only* their social needs met, without opportunities for intellectual/cognitive challenge.

CHAPTER 9

CONCLUSION AND COMMENTARY

“Fostering the dispositions of caring, collaboration and critical inquiry that are at the heart of our vision of education” (Wells, 2002, p. 205).

In this final chapter, I begin by reviewing key findings relating to the precocious readers who were the case studies of this research, then consider issues relating to the learning, teaching and parenting of the children and relevant theoretical perspectives. Tensions experienced by the children and their families are then discussed, particularly regarding differences between espoused values of education and society, and the lived experience of precocious readers and their families, including those of being a 21st century learner (Wells, 2002). One key tension is that between the individual need for cognitive extension and challenge, and the need for social acceptance, which is conditional on children acting “normal”. Such tensions suggests that society undermines its own ideals for 21st century learners

The main research question for this study asked: “*How are social scaffolding and self-scaffolding demonstrated within the learning of precocious readers?*” and was supported by an interest in whether there was evidence from precocious readers for spontaneous learning. In this chapter, the sections on “precocious readers” and “learning” summarise insights on self-scaffolding demonstrated by the children. They also include insights on spontaneous learning demonstrated by precocious readers within the case studies. The sections on “parenting”, “teaching” and “tensions” review insights gained from the study on the social scaffolding that occurred for the children in my study, and how.

Within each section of this chapter, propositions are provided that summarise key messages from the study. The propositions reflect the experiences of the case study children, but also apply more widely to other young children with special abilities, and to the broader process of learning overall. They extend from the propositions drawn from the literature at the end of chapter 2. This chapter concludes with an

acknowledgement of limitations and a broad range of recommendations for future research.

9.1 About Precocious Readers

The collective achievements of the children in this study are reviewed and individual differences acknowledged in this section. One aim of this study was simply to present the children: to show evidence of their intellectual and practical abilities and to advocate for their recognition. The study contributes to greater awareness of young children with specific special abilities. Before any specific strategies and recommendations can be applied, true recognition and appreciation of diversity and honouring of potential is important. Recognition of individual abilities will also support parents as they continue to advocate for their children. The children were all passionate and motivated learners. Parents reported that it was the children's interest that led learning. The children could all be described as self-regulated learners, particularly because of their use of metacognition, metalinguistic skill, motivation and reflection skills.

The results of this study illustrate that the children in the study had reading abilities well beyond their chronological age, and well beyond most of their teachers' expectations. Parents reported that the children's abilities were not always believed, accepted or appreciated. The children were encouraged by some peers and teachers to hide their abilities and to act like "normal four-year olds". Children demonstrated that they were able to adjust their behaviour to different situations, and on occasion did "dumb down" (Price, 1995).

The children were exceptionally fluent, voracious readers and demonstrated comprehension that was well above their chronological age. Their reading abilities meant they were able to read material that is not normally expected capable of being deciphered by young children. The typical pattern was of always being interested in reading, showing unexpected reading proficiency by the age of 3 years and reading independence before 4 years.

This study also acknowledges the children's individuality. One child had an imaginary friend, another child loved Pokemon, and yet another child adored animals. Each child had a unique blend of personal, family, cultural and social factors. Some of the children achieved highly on assessments of receptive language and problem-solving, but this was not so consistent for all children. Interest and ability in writing also varied among the children. Each child also had diverse opportunities and circumstances. One child had farm holidays, another child had been overseas to visit family, and another child had a shelf of his father's old books. Several children had contact with grandparents and extended family. Almost all of the children had access to computers. However, even within the use of computers, children demonstrated their individual personalities. One child was motivated by the challenge of "cracking" his mother's laptop password, another enjoyed looking at her areas of creative interest on the Internet, and a third child appreciated being able to learn specific new facts. There is no simple recipe for precocious reading: no formula for parenting or teaching, and not a simple genetic template. Individual interests, attitudes, dispositions, circumstances, families, environments and resources all diversely contribute to a unique combination of factors for each child.

Propositions:

- *Precocious readers are unique individuals.*
- *Precocious readers are voracious, passionate, exceptionally fluent readers, who are able to competently read well above their age level and with sound comprehension skills*
- *The abilities of precocious readers are not readily recognised, believed or appreciated*
- *Children adjust their behaviour and achievement according to the expectations of different people and settings.*

9.2 About Learning

Parents asserted that they had not formally 'taught' their children to read. Three key factors influenced the children's learning in this study: firstly, their ability to capitalise on their environment, support and resources, secondly, their self-regulation and, finally, "spontaneous" learning. This thesis asserts that all three aspects of learning are important.

Social constructivism recognises the important role of social interaction and environment. However, social support was not only "given to" children. The children also actively solicited support and information and capitalised on their environment. They asked to be read to, they asked for books and library visits, they asked for literacy-related games and challenges, and generally "demanded" literacy extension. It is important that adults recognise children's role in social constructivism; co-construction recognises the process of *joint* interaction, but in addition some social learning situations are *managed* and controlled by learners.

Children in this study had self-regulatory, self-teaching abilities. Metacognitive ability was demonstrated by their thinking about their own thinking. The children were also reflective, had metalinguistic ability and analytical and problem-solving skills. It is important that adults recognise and appreciate children's self-regulation. Vygotsky's (1978) zone of proximal development acknowledges children's learning in the zone between what they can achieve independently and what they can achieve with support. Children do not only move within this zone because of adult intervention, but also as a result of their own initiation of support. By taking responsibility for their learning progress, children are operating within the zone of executive functioning (Berk & Winsler, 1995). Skills and abilities that support independence, motivation and ongoing learning provide a valuable "tool kit" for 21st century learners.

A learning-related outcome of this study is the data relating to spontaneous learning. Parents reported experiences of the children learning without having been taught, and without deliberate metacognitive self-teaching and reflection. The notion that children

can learn spontaneously challenges contemporary contextual perspectives of learning and especially threatens the idea that children's learning is necessarily attributable to adults' co-construction and facilitation. However, the literature presented in this thesis indicates that spontaneous learning does not necessarily conflict with the ideas of key theorists; Vygotsky, Piaget and other theorists have discussed "implicit", "induced", "intrinsic", "unconscious" and "non-conscious" learning (see chapter 2). Results of this study support these important social support roles, but also assert that such adult roles are not the only factors responsible for children's learning: *children and spontaneous catalysts* are also key influences on learning.

The notion of spontaneous learning challenges traditional ideas about teaching and learning, with some people disbelieving that it is possible. This may reflect the proposition of Litowitz (1993) that adults with adultocentric views need to have their own contribution validated. Teacher-child relationships therefore reflect power issues and the belief that adults have responsibility for and control of children's learning.

Believing in children's abilities and achievement requires respect for children and the belief that learning can occur in diverse ways. The notion of spontaneous learning does not suggest that children's learning is divorced from social context, but it does affirm that social context cannot explain all learning. The results of this study suggest that adults should be more open to noticing the innate abilities and potential of children and learn from them.

Propositions:

- *Learning can be socially supported, self-regulated or spontaneous:*
 - *Children can capitalise on and direct social and ecological supports.*
 - *Self-regulated learning illustrates operating within the zone of executive functioning.*
 - *Learning can be spontaneous.*
- *Learning can be attributed to the learner (rather than teachers, peers or other people).*

9.3 About Teaching

Early childhood education critically impacts on young children's learning and development, with the impact of quality in their early childhood education still being of influence beyond the children's twelfth birthday (Wylie, 2004). Fler (1995) states that "the most important part of a centre's program is not the resources available to children, but the quality of interaction between staff and children" (p. 1).

Figure 43 illustrates an elaborated teaching and learning continuum, extending Jordon's (2003) teaching continuum (see Chapter 2). The figure illustrates that at one end of the spectrum, teaching dominates by being directive, and learning by being directed. Midway on the spectrum, teaching and learning is mediated, reflecting contextual teaching approaches. At the other end of the spectrum, teaching is responsive to the learner, and the learner self-directs, self-discovers and spontaneously learns. Regulation, interaction and induction are broad influences on learning that relate to use of direction, mediation and spontaneous learning or self-regulation. Learning occurs across the spectrum; for example, one child complied with rules about where to store equipment, co-constructed a dramatic presentation with a group of children and a teacher, and reflected on differences between children in the setting. Teaching roles for this child included directing and demonstrating the "rules", co-construction with children, and "simple" acknowledgment of what they are able to achieve independently of the teacher.

The data from this study illustrated a significant number of directive comments from both school and early childhood teachers. Figure 43 illustrates that directive teaching approaches include scaffolding, demonstrating and directing. While there is nothing wrong with directive, purposeful comments, it is concerning if children *only*, or predominantly, are spoken to directly. It is not possible to judge the reason for directive emphasis in observations at early childhood centres and schools. However, possible reasons for the teachers' directive emphasis may be due to any combination of the following reasons:

- Teachers may espouse a philosophy of responsive teaching as a result of training and professional development, but not actually personally hold this belief.

- Teachers may have a belief in responsive teaching but need support to develop teaching skills.
- Teachers may be unaware that practice and philosophy are not in accord.
- Teachers may have a desire to teach responsively, but are limited by the realities of a busy programme, teacher-child ratios, interaction with parents and visitors (including researchers!), and completion of administrative requirements and so on.

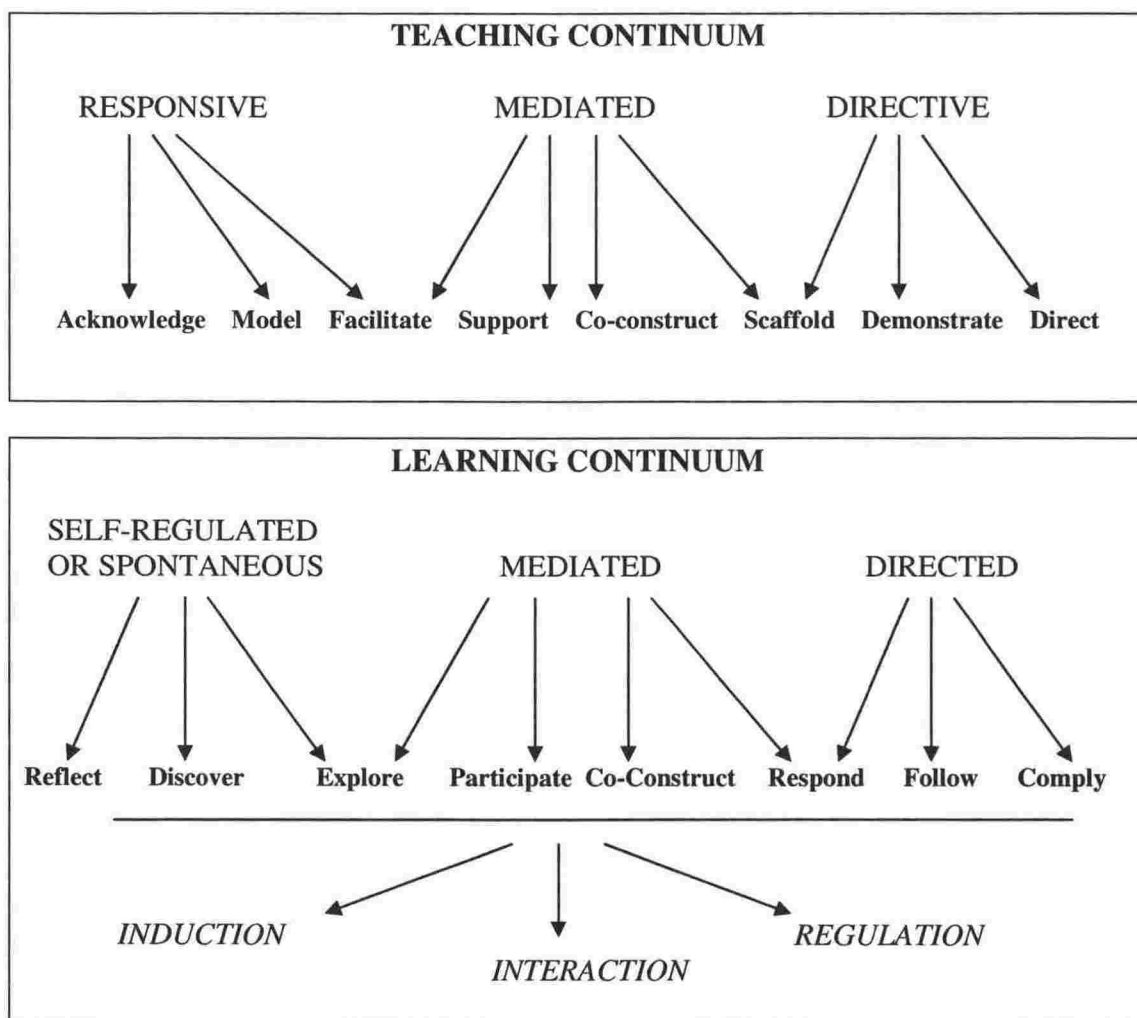


Figure 43. Elaborated teaching and learning continuum.

Whatever the reason, it is important that advocacy for responsive teaching and recognition of children's individual potential continues, so that the focus of teaching relates to what is in the best interests of children.

Where practical realities of everyday teaching result in the majority of interpersonal interactions between teachers and children being directive ("sit down", "tidy up", "be quiet"), relationships are more likely to be superficial. There is a 'catch 22' or self-perpetuating difficulty as teachers and children are less likely to engage in sustained, quality interactions if they have not had the experience of sustained, quality interactions with each other. Understanding another person's perspective is essential if meaning is to be shared and interactions are to be purposeful. Dunkin (2002, p. 33) states, "When we demonstrate positive regard for the child and respect for their ideas and feelings, we foster their sense of identity – an important factor in self-confidence and self-esteem". Positive regard for children cannot be measured only by the expression of positive comments, but also through positive non-verbal communication (smiles, nods), and through spending quality time together. Children need to see that teachers' positive philosophies are enacted through their teacher-child interactions.

Claire McLachlan (2002) hypothesised that "most [early childhood] teachers have a limited knowledge of how to effectively promote literacy development in the early years" (p. 13). This study has highlighted that the early childhood and early primary school teachers involved were uncertain how to provide for the needs of precocious readers, or other children with special abilities. It would be most unfortunate if the encouragement given for children to "normalise" was because this would make teaching somewhat easier.

Propositions:

- *Practice and theory illustrate that teaching encompasses a range of approaches including responsive, mediated and directive teaching*
- *Practical realities of teaching mean that directive organisation may dominate interactions between teachers and children*

- *Teachers can learn more about the needs of young children with special abilities, including early reading competence.*

9.4 About Parenting

Research by Tizard and Hughes (1984) “found that children at home with a parent or carer are likely to initiate, on average, 27 conversations an hour”. Their research has shown that parents tend to interact with their children by *listening and responding to* their initiations, rather than by *talking to or questioning* the children. In this study, parents were most likely to use the responsive teaching approaches of acknowledging, modelling and facilitating. The powerful modelling effect of parent literacy behaviour was one example within this study.

Roopnarine and Johnson (2000) note the *intensity* of interactions and relationships in the home setting between parents and children. This intensity was illustrated by the many hours some parents spent reading with their children, talking to them, enjoying their company. Parents described their parenting role positively, not as a responsibility or chore. Berk (1999) states that “despite the family’s flexible and changing nature, child development specialists have discovered some general rules about good parenting practices ... parental *responsiveness* is repeatedly associated with better development” (p. 75). Although I have asserted in this study that the achievements of the children should not be attributed to their parents, it is also clear that parents provided key support for the children, allowing their potential to flourish.

Most of the families in this study had a parent who was predominantly “at home” for the children. Berk (2001) notes “The importance of considering the needs of children when making work and child-care decisions” (p. 9). Although *quality* and *quantity* are different concepts, it may be easier to ensure quality interactions when children and adults have sufficient time together. In some families, grandparents were able to additionally support and respond to the children. Beyond this study, it is possible that a number of people may be able to support the roles of parents in this way, for example, home-based care options for early childhood or after-school care or extended family.

For families who are unable to have a parent at home, there may be other solutions for ensuring that the children have quality individual interactions with key adults who can support and respond to them. It would be inequitable to assume that all children have “at home” parents, or that parents are equally equipped to provide support.

Propositions:

- *Quality individual time with a key adult who can support and respond is important for children.*
- *Parents of children with special abilities provide effective, responsive support.*

9.5 Tensions

Of particular importance from the data was the tension between different, but equally important, aspects of the children’s development. Parents repeatedly discussed the need for their children to be academically challenged, yet stated that their social and emotional needs were equally, or possibly more, important factors at school and early childhood centres.

At times, the data seemed to suggest that conformity was favoured over diversity. Some teachers and peers of the children employed strategies that focused on “socialising” and “normalising” the children. Behaving like the other children and “learning the rules” were rewarded, but children were rejected when they demonstrated different interests and abilities. The children showed considerable expertise in being able to work out the hidden expectations. In many contexts, the espoused goals were “achievement”, “learning” and “self-concept”. In reality, the agendas appeared to include the expectation that children:

- “Achieve as much as is normal to achieve”
- “Learn what is expected of a 4-year-old”
- “Act socially appropriately”.

Social acceptance from teachers, other children, and family friends appeared to be conditional upon the children acting “normal” and conforming to the expectations held for 4-years-olds. Parents had broader, more flexible, expectations, yet recognised that

social acceptance was necessary, and that this meant compromising the level of cognitive challenge and expectation outside family environments. Beyond the homes of the children, the difference between people's ideals and rhetoric and the reality was considerable.

Children growing up in the 21st century need to have skills that enable them to manage rapid change, including those relating to technology and work opportunities. Wells (2002) argues that caring, collaboration and critical inquiry are at the heart of our vision of education for the twenty-first century child. In this chapter, I argue that these ideals can, for the children in this study, be limited and contradictory. The case studies of precocious readers illustrate a group of young 21st century learners who demonstrate early strength as critical inquirers and who have empathy and social skills. The children have intellectual and practical abilities that contribute positively to society, yet efforts are made to "normalize" the children. In this study, it was observed that the notions of collaboration and caring were applied to the children as the reward for conformity.

A number of tensions for the children in this study and their families, are expressed below in Figure 44. The figure collates the collective tensions from the overall study, particularly in terms of the difference between espoused societal values and the reality experienced by the children in this study. For each child, however, there is a slightly different configuration of tensions and different points of equilibrium were reached.

Propositions:

- *Precocious readers need opportunities for cognitive extension and challenge, and they need to be socially accepted; however, social acceptance of precocious readers outside family settings can be conditional upon the children acting like "normal 4-year-olds".*
- *Children may hide their abilities in order to be socially accepted.*

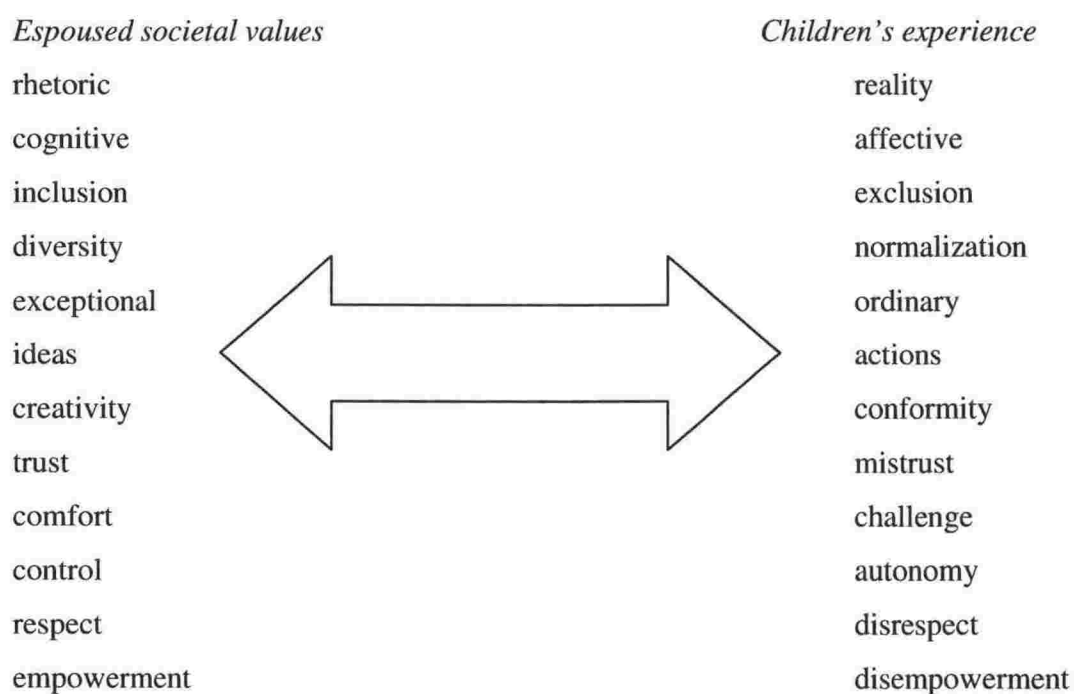


Figure 44. Tensions: Societal values and experiences of precocious readers.

9.6 Theoretical Perspectives

This study has illustrated that it is important to consider more than one theoretical position for learning. Social constructivism is a key contemporary perspective that illustrates appreciation of social support and interaction. Other important perspectives in this study are cognitive constructivism, and use of the bioecological “lens”.

Cognitive constructivism highlights the “intellectual” thinking skills and abilities of children. Children do not engage in cognitive processing only as a result of social interaction; they also think, learn and explore autonomously. If cognitive constructivism is not acknowledged for individuals, children’s learning may be limited to whatever the social “norm” is. Although the group is important, individuals are also important. This is especially so for precocious readers and other able children; so they must not attempt to repress their abilities in order to achieve social acceptance.

The bioecological model extends cognitive construction by highlighting the importance of both contextual and biological factors. Reluctance to acknowledge genetics as an important contributing factor may be due to the pedagogical focus on the role of teaching; Vygotsky's theories, for example, have highlighted the important role of adults within the zone of proximal development. However, no matter how effective the support of adults, children's individual abilities are influential. If bioecological factors did not exist, a group of same-age children with the same teacher would all learn at the same pace and to the same potential limit.

Of the many models in the field of gifted education, Gagné's (1985) differentiated giftedness-talent model is particularly relevant to this study. This model acknowledges the role of "catalysts" as being a powerful force affecting learning (Gagné, 1985, 1991). Catalysts do not create learning, but they provide a "spark" or "ignition", depending on relevant social, cognitive, ecological and biological factors. Catalysts can include a number of events, experiences and thoughts: adults and adult actions are not the only forms of catalyst. The catalysts referred to in Gagné's (1985) model link to the theoretical discussion on spontaneous learning.

A multi-method research approach has informed this study. This research approach reflects the use of multiple perspectives. Social constructivism and cognitive constructivism have variously been represented through the research methods of observation, interview and use of standardised tests. The study draws on both psychological and educational approaches and illustrates that a mixed method approach provides a broader range of data than a purely contextual or purely quantitative study would. For case study research, a broad approach to assessment and data-gathering has been important. The study shows that early childhood research can claim to maintain a contextual, or specifically sociocultural perspective, as espoused in current early childhood education, yet can also accommodate multiple theoretical perspectives and methods.

Propositions:

- *Accommodating multiple perspectives and approaches provides broader understanding of children's learning.*
- *A contextual perspective can be used in partnership with other perspectives; it does not need to be exclusive.*

9.7 Policy Considerations

This study has showcased precocious readers as a group, and also discussed the individual diversity of each case study. In addition to providing these outcomes, the case studies also highlight some issues relevant to broader groups of learners, including the pressure of social norming and conforming. Related to this issue is respect for diversity. Attempts to socialise, normalise and make the children conform to whatever was deemed “normal” for a 4-year-old implies lack of respect for individuality. The issues of acceptance, rejection and conformity would relate equally to other learners, for example children with different special abilities, children with special needs, and families of diverse cultures, with cultural diversity relating to ethnicity, parent sexuality, socio-economic status, religion, or other factors. If children from diverse backgrounds are being pressured to “conform to the norm” (“the norm” often being white, middle-class children within the “normal” bell curve range) in the same way as the case study children, then it is not true to say that diversity is appreciated, celebrated and honoured. Children in this study had specific academic and cognitive skills; other children may have nurturing abilities, leadership, physical, artistic or musical abilities, resilience or other skills. For teachers, researchers and policy makers to truly value the competencies that children already have, they need to avoid a focus on the deficit view of what the child needs to learn, and “top-down” consideration of what the teachers can teach.

One competency that the children in this study demonstrated was the ability to operate bimodially (Carr, 1998d) or multimodially. Children altered their behaviour, interactions, use of materials and levels of achievement according to the context they operated in, for example, using a more complex vocabulary at home than at school or early childhood centres. This study has illustrated that the ability of children to gauge

social expectations and subsequently adapt their own actions was established at an early age. An important consideration is that the ability of children to “fit in” can mean that their special abilities are not recognised. This also means that in addition to consideration of children who *are achieving* at an advanced level, children who could *potentially achieve* highly should also be considered.

A further issue relates to the importance of parent-teacher partnership. Genuine partnership includes effective communication and respect (Blanc, Clausier & Murcier, 2004; Cattermole & Robinson, 1985). However, in several of the case studies, parents commented that their knowledge of their child was disbelieved, ignored or disparaged. Many parents wanted to contribute to schools and early childhood centres, but felt that they would be less accepted if their child was ‘different’. Despite being the principal advocates for their children, parents often felt powerless. This issue is particularly relevant for parents as they choose schools for their children and the children begin school for the first time.

Philosophical perspectives of children have shifted over time, with contemporary perspectives including government acknowledgement of the economic benefit of early childhood investment (May, 1997, 2001). It might be expected that an economic perspective would particularly value advanced academic abilities, yet there was little evidence in this study of children’s advanced abilities being valued at all other than by their parents or grandparents. While intellectual thinking could be appreciated as a transferable skill for the 21st century, it was often discouraged. This may suggest that the ‘economic’ approach that is valued by society is a conservative one rather than entrepreneurial or innovative. This study has illustrated that the key support for precocious readers was their family, and that they were rejected elsewhere. Policy considerations relating to these issues mean that central agency decisions need to be made as to whether families will be relied on to provide for all children, or whether the state “invests” in children by ensuring that wider support and responsiveness are provided. If children continue to learn at an early age to hide and diminish their abilities, then the contribution of their talent pool to society is also diminished. In

addition, if families are relied on to support young children, because of the assumption that there is an “at home” parent, some children will inevitably suffer as a result of changing work patterns.

An important policy action that could be taken to support young gifted children is to ensure that each child has effective individual mentorship. For some children, this will be a parent, but in other cases, additional support would need to be provided, in the same way that it is for children with learning difficulties. It may not be possible for teachers or working parents to provide the individual support and responsive interaction required of a mentor. A more effective strategy would be to provide a suitably qualified or experienced education support worker for children with precocious abilities. This strategy would also ensure that all eligible children receive support, not only those who have parents “at home”. In some cases, children’s parents or grandparents may prove to be the most suitable person to continue as mentor, in other cases it may be a subject specialist or “kindred spirit”. In other cases, home-based childcare options in early childhood and after school care could be beneficial owing to the lower adult-child ratios. Reporting on one case study of a precocious reader in England who was not given support, Stainthorp and Hughes conclude, “We can only speculate what might have happened if her precocious skills had been recognized and she had been given specific help to enable her to capitalize on her self-taught skills” (2004, p. 119).

Propositions and recommendations:

- *Potential achievement should be considered in identification approaches, not only performance.*
- *Children are pressured to “conform to the norm”; this may also apply more widely to other aspects of social diversity.*
- *Parents of precocious readers can feel powerless, and this may be more widespread despite aims of educational partnership.*
- *Some children will be disadvantaged if the state assumes that families, such as those with an at-home parent, can provide for children with special abilities.*

- *Lack of provision and support for some children, and the pressure to be “average” may mean that children’s social contribution is diminished, including their future economic contribution to society.*
- *Education support workers and/or mentors could be provided to precocious children, providing necessary and more equitable support and individual responsiveness.*

9.8 Limitations and Recommendations for Future Research

This study was limited to 11 children and families, 10 early childhood centres and 4 schools. Limitations of time meant that it was not possible to increase the sample while maintaining the breadth of data-gathering. Other studies might have extended the sample size with a narrower range of research methods. Although families were diverse, there was no specific research requirement that a range of socioeconomic levels or ethnic groups was represented. It would have been of interest if the study had been able to include children from low income or single parent families, Māori children or children younger than 4 years old.

One of the research methods involved scales and checklists for identification of giftedness. The ethics application for this study, which identified the specific methods to be used, was approved in 2000. Shortly afterwards, New Zealander Barbara Allan (2002) produced a resource specifically for identification of giftedness in early childhood. This would have been an ideal assessment tool to include in the study, and should be included in any future New Zealand studies of precocious readers. Although I have tried to position the children prominently within this thesis, for example by including children’s art, if I was to replicate the study I would strongly consider directly interviewing the children.

The findings of this study illustrate that there are a number of areas for further research, including:

- further studies in early childhood linking cognitive and contextual perspectives with cognitive, behavioural, information-processing, bioecological and

sociobiological perspectives; including mixed method studies and further use of standardised assessments in early childhood studies

- studies investigating longitudinal outcomes and experiences of children who demonstrate giftedness and talent at an early age
- evaluation of teaching methods and strategies that are most supportive and challenging for early readers and other children with special abilities, and recommendations for future policies
- further studies of resilience and peer socialisation in early childhood education and recommendations for “How to beat the tall poppy syndrome”
- investigation of conditions which would more effectively allow spontaneous learning to emerge and be socially accepted; given the right conditions, could there be a greater number of children with the potential to achieve precociously?
- the role of grandparents, “at home” parents, home-based early childhood and after school care options, and other forms of individual mentorship and support for young children
- further issues of effective identification, particularly with young children
- the positive contribution of computers to children’s learning, including literacy acquisition
- evidence-building for the notion of “spontaneous learning”
- further studies considering individual and social outcomes of “at home” parenting and how children’s needs are balanced with family economic decisions.

In 1991, Podmore and Bird suggested that future research should include “greater efforts towards finding intersections of goals sought by parents, children, other relatives and researchers” (p. 77). The findings of this study suggest that this goal is still relevant, as is the need to find intersections of goals between parents, children, early childhood and early primary school teachers.

9.9 Conclusion

At the beginning of this this research journey, I knew that I wanted to explore the learning of precocious readers. I had an idea that learning should not always be explained by adult's teaching and scaffolding, but I also wanted to be open-minded to ideas that emerged from the data. I also knew that I wanted to have a broad research focus surrounding the children rather than a narrow one on aspects of reading competence. The thesis was therefore simultaneously about two interests: firstly a broad consideration of learning processes, and secondly a specific understanding of the experience of being a precocious reader. The thesis also has a third function, which is to tell the story of my research journey. I have deliberately included descriptions of the mixed method approach because few early childhood studies appear to be using such a range of instruments.

I have been fortunate to have been able to work with the 11 children and the many family members and teachers important in their lives at the time of data-gathering. Case study research highlights that there are multiple sources of data, multiple perspectives and multiple outcomes. Parents have generously provided copies of children's art work and writing, enabling the children to have a stronger voice in this thesis.

The study included the role of parents and teachers *because of their impact on children*; however, the study focus has been on the children themselves. Although adults play a critical role, responsibility for the children's abilities should be attributed to the *children*, rather than to adults. Adults cannot create a precocious reader. In some instances, the children's learning was supported by adults, but in others it was a result of self-regulation or "self-teaching", and in other cases it appeared to be spontaneous. These three approaches to learning (socially supported, self-regulatory and spontaneous) are not exclusive to precocious readers; however, the case studies of precocious readers have provided illustration of these three approaches to learning. Spontaneous learning is the approach to learning which receives least acknowledgement in the education sector, perhaps because it has the least teacher input. It is important that teachers recognise that children can learn with teachers, but also without teachers, and even despite teachers!

One of the most important role that teachers could take has already been identified by Adrienne Alton-Lee, for the Ministry of Education. She includes in the best evidence synthesis for quality teaching for diverse learners the notion that “teachers must care for students and be knowledgeable about ways to build care amongst student community – but must also care about effective teaching” (Alton-Lee, 2005, p. 23). Experiences of the children in this study have highlighted that there is a need to enhance teaching effectiveness and care for children. The children in this study experienced negativity rather than care. The experience of trying to find a suitable school reported in chapter 8 illustrates that there can be a difference between the best practice vision and what parents and children experience in reality. Ongoing efforts from the Ministry of Education to support the integration of policy and practice are of crucial importance for children.

The children in this study had passionate dispositions for learning. Their dispositional, academic and motivational skills resulted in positive contribution to their communities as successful young 21 st century learners. Whether the children are able to contribute to their full potential will be influenced by the extent to which social pressure to “normalise” continues, the children’s resilience and ability to mediate such pressure, and future policy initiatives that support the needs of young children with special abilities.

This study concludes with an excerpt from a letter to me from a parent of one of the children in the study, almost a year after involvement in the project. She reiterated many of the themes discussed in this chapter: children being “normal”, parents being supportive, teachers being in control and learning which appears unexpectedly:

Lewis is growing fast and developing normally. He is growing with heaps of energy. I’m so pleased and proud of him. He stayed 5 months in Room 1. He was transferred to Room 2 with the older children. I think he is the youngest. I believe he is doing well in his class. He loves his teacher. What the teacher says is his law. Whenever he brings home a book and I ask him to read more pages, he would tell me, ‘My teacher says, ‘Read this and this only’. Well, you can’t tell him to do something that does not conform with the teacher. One very good thing about Lewis is, he is very good at spelling words. Sometimes I just wonder ‘Where did he learn all these words?’

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APPENDIX A
RECRUITMENT FLYER

Victoria University of Wellington research:

SEEKING

PRESCHOOL READERS

Do you know of a preschooler who is able to read?

I am wishing to study early readers for my PhD.

If you are a parent of an early reader, or know of such a child, I would like to be able to explain more about the research.

VALERIE MARGRAIN

Home ph. 970 5284

E-mail valerie.margrain@vuw.ac.nz

APPENDIX B: INFORMATION SHEETS

Information Sheet: Research Project on Precocious Readers

For parents, teachers, management committees and other interested caregivers:
This sheet is to introduce myself and to tell you a little about the research I am doing.

Who am I?

I am a PhD. student at Victoria University, and also tutoring for the School of Education, VUW. I have worked as a teacher for 12 years, including primary classroom teaching, work as a resource teacher for students with special learning needs, Reading Recovery teaching, and supporting students from non-English speaking backgrounds.

My first degree was in History, from Victoria. I then finished a Diploma in Educational Studies and Master of Educational Psychology from Massey University. The M.Ed.Psych. was part of a training programme for registration as a psychologist. My current research combines my interests of special and gifted education, early childhood and educational psychology.

I am parenting four children from teenage to preschool ages. As a parent I have been particularly interested in seeing the development of my children's reading abilities.

What is the research?

The research I am conducting for my Ph.D. examines how children help themselves with their learning. This includes considering independence, social interaction, and specific skills and strategies used. I hope to work with preschool precocious readers, and possibly 'follow' some of them until they begin school. The research will involve interviews, questionnaires, testing the child, observing in different settings, and reading any records available.

Families participating in the research would be involved with about 10 hours total time, divided into several sessions. I will make extra visits to early childhood centres and schools.

All participants in the project (children, parents and teachers) need to be willing to be involved but have the right to withdraw at any time. A profile on individual children will be collected in a record book for the family to keep. Individual results will be kept confidential to the family, with the exception of university supervisors and transcribers. A summary of general findings will be available to all involved. Pseudonyms will be used to protect confidentiality.

What is a precocious reader?

There are different definitions of precocious readers, but for this research I am looking for preschoolers who can read independently. Children can be any age up to 4 years 10 months of age. Parents can nominate their children directly to me. I will then do a short reading test for screening. Although the child may be able to read, I will limit my sample to those who read at similar levels to precocious readers in previous studies. I hope for a balance of girls and boys.

I welcome questions and feedback at any time. For further information you can also contact my supervisors at Victoria University (PO Box 600, Wellington). They are Prof. Helen May and Dr. Brian Thompson from the School of Education. Thank you for your interest in the research.

Valerie G. Margrain.

24 Jocelyn Crescent, Pinehaven, Upper Hutt

E-Mail valerie.margrain@vuw.ac.nz

Home phone 04 970 5284

SCHOOL INFORMATION SHEET

Information Sheet II: Research Project on Precocious Readers - Valerie Margrain

For teachers, principals, boards of trustees and other interested caregivers:

This sheet is to introduce myself and to tell you a little about the research I am doing.

Who am I?

I am a PhD. student at Victoria University, and also tutoring for the School of Education, VUW. I have worked as a teacher for 12 years, including primary classroom teaching, work as a resource teacher for students with special learning needs, Reading Recovery teaching, and supporting students from non-English speaking backgrounds.

My first degree was in History, from Victoria. I then finished a Diploma in Educational Studies and Master of Educational Psychology from Massey University. The M.Ed.Psych. was part of a training programme for registration as a psychologist. My current research combines my interests of special and gifted education, early childhood and educational psychology.

I am parenting four children from teenage to preschool ages. As a parent I have been particularly interested in seeing the development of my children's reading abilities.

What is the research?

The research I am conducting for my Ph.D. examines how children help themselves with their learning. This includes considering independence, social interaction, and specific skills and strategies used. I have been working with preschool precocious readers in home and early childhood settings. Some of these children are now beginning school and it would be of great interest to extend the existing research to include some early school experiences. The school-based phase will involve observing the child in the classroom, talking to the teacher and or principal, and reading any records available. Families participating in the research have been involved with additional aspects of the research for some time, including observations, interviews and standardised testing. Parents/caregivers have provided written consent for their child's involvement in the school-based phase.

All participants in the project (children, parents and teachers) need to be willing to be involved but have the right to withdraw at any time. Individual results will be kept confidential to the family, with the exception of university supervisors and transcribers. Pseudonyms will be used to protect confidentiality. Victoria University has granted ethics approval for the research.

It is my expectation that findings will be of assistance to teachers in meeting the needs of diverse learners. A summary of general findings will be available to all involved. I have been publishing and presenting findings within New Zealand, but will also be presenting for international audiences. The completed thesis will be kept in the Victoria University of Wellington library and at the Institute for Early Childhood Studies.

What is a precocious reader?

There are different definitions of precocious readers, but for this research I worked with children who read fluently and independently as preschoolers. The sample was limited to those who read at similar levels to precocious readers in previous studies.

I welcome questions or comments at any time. You can also contact my supervisors at Victoria University (PO Box 600, Wellington). They are Prof. Helen May and Dr Val Podmore from the School of Education. Thank you for your interest in the research.

Valerie G. Margrain

M.Ed.Psych., Dip.Ed.Stud., B.A., TTC., Dip.Tchg.

E-Mail valerie.margrain@vuw.ac.nz

24 Jocelyn Crescent, Pinehaven, Upper Hutt

Home phone 04 970 5284

Letter to Class Parents

Dear Parents/Caregivers

Over the next few months I will be occasionally visiting your child's classroom to observe aspects of reading and learning in Junior classes. The observations form part of a Ph.D. in education from Victoria University of Wellington. The results of the study are being reported at conferences and in journals in order to assist schools and teachers with meeting the needs of children.

Your child's class teacher and principal have given permission for me to observe in the classroom. I will not be reporting the name of the school or any individual children within the thesis or in any publications, and your child should not be identifiable in any way.

In addition to being a PhD student I am also a parent of four children, and have worked as a teacher for 13 years. If you have any questions about my research or research methods then you are welcome to telephone me on 970 5284 (home).

Many thanks

Valerie Margrain

M.Ed.Psych., Dip.Ed.Stud., B.A., TTC., Dip. Tchg.

**APPENDIX C:
SUMMARY OF RECRUITMENT APPROACHES**

<i>Recruitment approaches and sources</i>	<i>Centres mailed to</i>	<i>Centres personally Contacted</i>	<i>Estimated 3½-4 year olds</i>	<i>Children assessed</i>	<i>Children accepted</i>
Kindergartens, via 2 kindergarten associations.	68	0	2,820 (av. of 40 per centre)	4	3
Montessori early childhood centres	6	0	90 (av. of 15)	1	1
Preschools affiliated with Private Schools	0	2	40 (av. of 20)	4	3
Library flyers	9	1	?	3	3
Personal Network	0	Numerous	?	1	1
Local newspaper article describing my research (30,000 readership)	0	Several telephone inquiries	?	2	0
2 Family daycare Networks each with many home-based care-givers	Several fliers given	0	?	0	0
Playcentres, via one playcentre association	17	1	136 (av. of 8)	0	0
Childcare centres (full day care or sessional)	0	11	110 (av. of 10)	0	0
Total	100	15	>3,200	15	11

**APPENDIX D:
PERMISSION FORMS**

**Parent Consent To Research Participation:
Victoria University Of Wellington**

Short Title of Project: Precocious Readers **Researcher:** Valerie Margrain

- ✓ I have received an information sheet describing the research and introducing the researcher.
- ✓ I have had an opportunity to ask questions and have them answered to my satisfaction.
- ✓ I know that I may withdraw myself, my child, or any information we have provided - I can do this at any time until the end of data collection without penalty or need to give reasons.
- ✓ I understand that if my child does not wish to participate they will not proceed.
- ✓ I understand that a range of methods will be involved, including interview, questionnaire, observation, and testing. I understand that some observations will be undertaken in early childhood settings, and that early childhood centres will be asked for research consent.
- ✓ I understand that any information my child or I give will be kept confidential to the researcher, university supervisors and any person who transcribes tape recordings. Published results will not use my name, my child's name, or any information that specifically identifies our family.
- ✓ I understand that I will have an opportunity to proof read any transcripts of interviews.
- ✓ I understand that no other parties, including early childhood centres will have access to any test results of my child unless I specifically authorise the release of this information.
- ✓ I understand that data will be securely stored for a period of up to two years from the completion of the PhD., after which time it will be destroyed. The information will not be used for any further research without my permission.

Please tick if relevant (as many boxes as needed):

- I agree to take part in this research.
- I would like to receive a summary of the research when it is completed.
- I would like to receive a record book/case-study of my child at the end of the research.
- I would like to receive test results on my child as they are completed within the research.
- I agree that _____ (child's name), who is under my guardianship, may take part in this research.

Signed: _____ Date: _____

Name of participant: _____

EARLY CHILDHOOD PERMISSION FORMS

Early Childhood Teacher Consent To Research Participation: Victoria University Of Wellington

Short Title of Project: Precocious Readers **Researcher:** Valerie Margrain

- ✓ I have received an information sheet describing the research and introducing the researcher.
- ✓ I have had an opportunity to ask questions and have them answered to our satisfaction.
- ✓ I understand that I may withdraw myself, or any information I have provided, from the research - I can do this at any stage until the end of data collection without penalty or need to provide reasons.
- ✓ I understand that teacher interview, observation and examination of permitted records are methods of this research. We understand that parents will have provided research consent.
- ✓ I understand that no records or copies of records (eg. Work samples) will be taken without the express authorisation of the staff concerned.
- ✓ I understand that any information gathered will be kept confidential to the researcher, university supervisors and transcriber. No published results will use the name of the centre, staff, children or families involved, or any information that provides specific identification.

Please tick if relevant:

- I agree to take part in this research.
- I would like to receive a summary of the research when it is completed.

Signed: _____

Name and Position: _____

Date: _____

Early Childhood Centre Consent Form for Management Committees

**EARLY CHILDHOOD CENTRE CONSENT TO RESEARCH PARTICIPATION:
VICTORIA UNIVERSITY OF WELLINGTON**

Short Title of Project: Precocious Readers

Researcher: Valerie Margrain

- ✓ We have received an information sheet describing the research and introducing the researcher.
- ✓ We have had an opportunity to ask questions and have them answered to our satisfaction.
- ✓ We understand that we may withdraw our centre, and any information we have provided, from the research - we can do this at any stage until the end of data collection without penalty or need to provide reasons.
- ✓ We understand that individual teachers involved will be provided with an information sheet and asked if they are comfortable with the research occurring. We understand that if any child or teacher do not wish to participate they will not be proceed.
- ✓ We understand that teacher questionnaire, observation and examination of records are methods of this research. We understand that parents will have provided research consent.
- ✓ We understand that no records or copies of records (eg. Work samples) will be taken without the express authorisation of the individual teachers concerned.
- ✓ We understand that any information gathered will be kept confidential to the researcher, university supervisors and transcriber. No published results will use the name of the centre, staff, children or families involved, or any information that provides specific identification.

Please tick if relevant:

- We authorise that the Management Committee of _____ (name of school/centre) has discussed this research and agreed that we provide permission for our centre/school to be involved.
- We would like to receive a summary of the research when it is completed.

Signed: _____

Name and Position: _____

Date: _____

SUPPLEMENTARY PARENT PERMISSION FOR SCHOOL PHASE

Supplementary Parent Research Consent Form

CONSENT TO RESEARCH PARTICIPATION with Victoria University of Wellington

Short Title of Project: Precocious Readers Researcher: Valerie Margrain

I _____ parent/guardian of

_____ (name of child involved in the research)

give permission for the following extensions to the research we are already involved in

(please tick the boxes for which you give permission):

- Observing your child in their school classroom setting**
- Reading school records**
- Interview of school teachers and/or principal**

For your information:

- Individual teachers and the school management will be asked for their permission
- Teachers, schools, parents and children retain the right to pull out of the research at any time
- Permission may be given for some methods of data-gathering, but withheld for others
- Information gathered will be kept confidential to the researcher, university supervisors and research families. No published results will use the name of the school, staff, children or families involved, or any information that provides specific identification.

Signed: _____ Date: _____

**PRIMARY SCHOOL TEACHER CONSENT TO RESEARCH PARTICIPATION:
VICTORIA UNIVERSITY OF WELLINGTON**

Short Title of Project: Precocious Readers

Researcher: Valerie Margrain

- ✓ I have received an information sheet describing the research and introducing the researcher. I know that I can contact Valerie Margrain to ask any further questions.
- ✓ Data collection will focus on the child involved in research. Parents/caregivers of the child will have provided permission for involvement in this phase of the research.
- ✓ I understand that I may withdraw myself, or any information I have provided, from the research - I can do this at any stage until the end of data collection without penalty or need to provide reasons.
- ✓ I understand that teacher interview, observation and examination of permitted records are methods of this research. No records or copies of records (eg. Work samples) will be taken without the express authorisation of the staff concerned.
- ✓ I understand that any information gathered will be kept confidential to the researcher, university supervisors and families of the focus child . No published results will use the name of the school, staff, children or families involved, or any information that provides specific identification. Care will be taken that any the school or staff cannot be identified when reporting the research.

Please tick if relevant:

- I agree to take part in this research.
- I would like to receive a summary of the research when it is completed.

Signed: _____

Name and Position: _____

Date: _____

Consent Form for School Boards of Trustees/Principals

**PRINCIPALS/SCHOOL MANAGEMENT CONSENT FOR RESEARCH
PARTICIPATION: VICTORIA UNIVERSITY OF WELLINGTON**

Short Title of Project: Precocious Readers Researcher: Valerie Margrain

- ✓ We have received an information sheet describing the research and introducing the researcher. We can contact Valerie Margrain to ask any questions we may have
- ✓ Data collection will focus on the child involved in research. Parents/caregivers of this child will have provided written consent for involvement,
- ✓ We understand that we may withdraw our school, and any information we have provided, from the research - we can do this at any stage until the end of data collection without penalty or need to provide reasons.
- ✓ We understand that individual teachers involved will be provided with an information sheet and asked if they are comfortable with the research occurring. We understand that if any child or teachers do not wish to participate the researcher will withdraw.
- ✓ We understand that teacher interview, classroom observation and examination of records are methods of this research. We understand that no records or copies of records (eg. Work samples) will be taken without the express authorisation of the individual teachers concerned. Should the parents/caregivers of any other child object to the research, they will not be included in any data-recording.
- ✓ We understand that any information gathered will be kept confidential to the researcher, university supervisors and transcriber. No published results will use the name of the school, staff, children or families involved, or any information that provides specific identification. Care will be taken that the school or staff cannot be identified when reporting the research.

Please tick if relevant:

- We authorise that the BoT/Management of _____
(name of school) has discussed this research and agreed that we provide permission for our school to be involved.
- We would like to receive a summary of the research when it is completed.

Signed: _____

Name and Position: _____

Date: _____

APPENDIX E: RESEARCH ACTIVITY WITHIN ONE CASE STUDY

Example of Phases for one 'Case' – D.

Action (not necessarily in exact order)	Date
1. Initial Contact – Phone	3 April 2001
2. Parent Permission	Mid April
3. Initial assessment/screening – <i>Neale</i>	6 May
4. <i>Neale</i> Analysis of Reading altern. Form	14 May
5. Burt Word Reading Test	20 May
6. Coloured Progressive Matrices	6 May
7. British Picture Vocabulary Scale	20 May
8. 1 st Parent Interview (semi-structured)	22 May
9. Puzzle observation	August
10. Early Childhood Centre Permission	27 April
11. EC Centre Observation 1	14 May
12. EC Centre Observation 2	17 May
13. View EC Centre records	-
14. EC Teacher Interview (co-constructive)	12 June
15. Examples of child's sentences recorded	Throughout
16. Parent records	August
17. Home observation, further assessments	-
18. 2 nd Parent Interview (co-constructive)	August
19. Purchase and give book gift for child	August
20. Complete child profile book for family	3 October
21. Send letters of thanks to ECC & family	3 October
22. Contact families regarding phase two	January 2002
23. Parent Permission received for phase two	Late January 2002
24. School Permission received	11 February
25. Classroom observation 1	21 February
26. Informal teacher interview	21 February
27. Classroom observation 2	28 February
28. Parent interview	May
29. Letters of thanks to school, additional observations to family	May 2002

APPENDIX F: SUMMARY REPORT FOR PARTICIPANTS

Feedback Letter

24 Jocelyn Crescent
Pinehaven
Upper Hutt

July 2002

Dear

This short note is to once again thank you for your involvement with and support of my PhD research, and to give you a little feedback.

The fieldwork for my doctorate is now complete, after just over a year of data-gathering. It has been a busy year juggling primary teaching, my own research, an additional research project through Auckland, some conferences, an overseas trip, frequent 'flu and, of course, parenting. Feedback to my research families, centres and schools has been much slower than I intended – luckily for me my husband recently stopped work to support me. By him taking over the domestic front I have been able to 'catch up' on my paper work.

I have met 15 wonderful children and families, and many early childhood teachers for this research during 2001/2. 11 of the children, and their families and centres, continued with the more intensive data-gathering. Four children with birthdays close together were involved with a 'transition phase,' involving some additional data-gathering as their children continued on to school. In addition, I joined an Auckland University precocious reading project that gathered data on reading strategies. Five of the children from my research study have participated in the Auckland study, and there is space for two more.

The rest of 2002 will be spent analysing the data in much greater depth than I have been able to do to date, and writing thesis chapters and journal articles. Hopefully 2003 will see the completion of the doctorate. A few clear issues have emerged already however, and I thought it would be of interest to you to share them at this stage.

Background

I was fortunate enough to have a range of children:

Ages	Youngest = 4 years 1 month, oldest = 4 years 10 months
Gender	7 boys and 4 girls in the main study
Ethnicity	Most children were NZ European/Pakeha, but some were Asian
Centres	Kindergarten, Montessori, and Preschool early childhood centres
Families	Most families had a stay-at-home mother, and most had father and mother. Some mothers were in paid employment and grandparents were actively involved as caregivers of two of the children.

Siblings	Although there were exceptions, most common was the research child being youngest of two children in the family.
Locations	Upper Hutt, Lower Hutt, Porirua, Kapiti and Wellington.

Reading Levels

The lowest levels of reading were around 7 years, and one child was reading around 10 ½ years age equivalent. There was excellent consistency between the results from the two forms of the *Neale Analysis of Reading* (text-based) and the *Burt Word Reading Test* (words in isolation).

Gender

More boys than girls were both referred and eligible for the research. Of the 11 children I worked intensively with, 7 were boys. I don't have any explanation for this, but with a small number of participants, it may just be circumstance.

Family influences

The children all experienced positive environments, but there didn't appear to be anything hugely different than the way many parents bring up their children. Children were loved, owned books, generally visited libraries, often had computers in the home, and had parents who saw education as worthwhile. However, these factors are also in many other families. It seems that environmental factors support children who become precocious readers – but are not sufficient alone to create such children.

'Spontaneous' Learning

A repeated experience that parents described was that their child learned suddenly and unexpectedly. Parents generally stated they had not taught their child and were surprised when they discovered they could read, and amazed at the rapidity of the process. Often, too, parents stated they did not 'teach' their child, but had spent lots of time with them reading to them, talking about books, showing them how to write on the computer and so on. This seemed to be generally in response to the child, but shows that it can be difficult to distinguish between 'responsive teaching' and 'responsive parenting'.

Fluency

All of the children read extremely fluently. Most of the children read at speeds exceeding the upper limits of the *Neale Analysis of Reading* – for most children this was beyond 10 ½ year age equivalent for speed of reading.

Comprehension

None of the children had any difficulty with comprehension. The typical pattern was for comprehension results to be a half to one year below the accuracy level – but that this would still be significantly above chronological age.

'Sounding Out'

I found it interesting that children read words in isolation with speed in a similar way to when reading text. With a few exceptions, the general pattern was not to try to 'sound

out' difficult words, but they would just 'pop out'. Even when mispronounced there was little hesitation.

Knowing Limits

Children seemed remarkably aware of the point at which 'difficulty' was reached in any of the assessment measures. Comments like "that's enough now" aligned with the point at which errors began to be made.

Interaction and Interests

Although the children had a special ability to read, they were first and foremost children: the parent interviews and early childhood centre observations highlighted children enjoying friendships, active play and a range of interests. Dinosaurs, space and music were common areas of interest.

Language

'Receptive language' was assessed using the British Picture Vocabulary Scale. All of the children achieved well on this measure, but not all children scored as significantly high as the reading levels would have suggested. 'Expressive language' was noted by recording examples of children's conversations – although these have not been analysed, the children were clearly articulate and confident speakers.

Problem-Solving

Many of the children expressed an interest in puzzles, but not all scored highly on the coloured progressive matrices assessment measure. With one exception all children scored at least average. The children's perseverance with tasks was excellent.

Please do keep in touch. I would particularly love to hear how things have gone for the research children as they get older, including their progress at school.

Please feel free to contact me at any time with any questions. I am enormously appreciative of your assistance and involvement.

Regards,

Valerie Margrain.

970 5284 home phone

E-mail valerie.margrain@clear.net.nz

APPENDIX G: *BURT WORD READING TEST*

to is up for big
he at one my sun

went girl boys day some
his that of an wet

love water no just pot
or now things told sad

carry village quickly nurse beware
return scramble twisted journey luncheon

known shelves explorer tongue projecting
terror serious belief events emergency

refrigerator steadiness obtain overwhelmed universal
nourishment encyclopaedia commenced circumstances fringe

formulate motionless trudging theory destiny
scarcely exhausted labourers urge atmosphere

apprehend binocular domineer melodrama economy
ultimate reputation humanity excessively philosopher

autobiography contemptuous terminology mercenary glycerine
unique microscopical perpetual efficiency influential

perambulating renown physician champagne exorbitant
hypocritical atrocious constitutionally contagion palpable

melancholy eccentricity fatigue phlegmatic fallacious
alienate poignancy phthisis ingratiating subtlety

THE BURT WORD READING TEST
(New Zealand Revision)

© 1981, Scottish Council for Research in Education.

Published by the New Zealand Council for Educational Research.

THE BURT WORD READING TEST (New Zealand Revision) RECORD FORM

Name: 17-10-01 Number correct 67
 School: Sex: Equivalent Age Band 10-04-10-10
 Age: years months Class: Norms Used (circle one) Boys Girls Boys & Girls

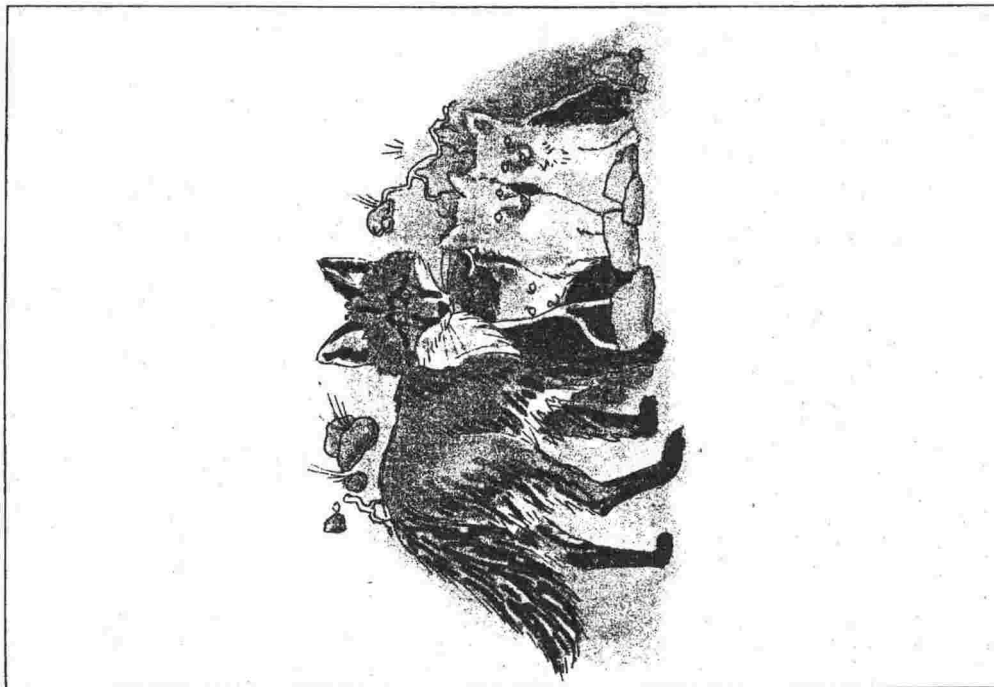
17-10-01

to ✓	is ✓	up ✓	for ✓	big ✓
he ✓	at ✓	one ✓	my ✓	sun ✓
went ✓	girl ✓	boys ✓	day ✓	some ✓
his ✓	that ✓	of ✓	an ✓	wet ✓
love ✓	water ✓	no ✓	just ✓	pot ✓
or ✓	now ✓	things ✓	told ✓	sad ✓
carry ✓	village ✓	quickly ✓	nurse ✓	beware ✓
return ✓	scramble ✓	twisted ✓	journey ✓	luncheon ✓
known ✓	shelves ✓	explorer ✓	tongue ✓	projecting ✓
terror ✓	serious ✓	belief ✓	events ✓	emergency ✓
refrigerator ✓	steadiness ✓ <i>steadiness</i>	obtain ✓	overwhelmed ✓	universal ✓
nourishment ✓ <i>nourishment</i>	encyclopaedia ✓	commenced ✓	circumstances ✓ <i>circ</i>	fringe ✓
formulate ✓	motionless ✓	trudging ✓	theory ✓ <i>theory</i>	destiny ✓
scarcely ✓	exhausted ✓	labourers ✓	urge ✓	atmosphere ✓ <i>atmosphere (3)</i>
apprehend ✓ <i>apprehend</i>	binocular ✓	domineer ✓ <i>domin</i>	melodrama ✓ <i>melodrama</i>	economy ✓
ultimate ✓ <i>ultimate</i>	reputation ✓ <i>reputation</i>	humanity ✓ <i>humanity</i>	excessively ✓ <i>excessively</i>	philosopher ✓ <i>philosophy</i>
autobiography ✓ <i>autobiography</i>	contemptuous ✓ <i>contemptuous</i>	terminology ✓ <i>terminology</i>	mercenary ✓ <i>mic-mercery</i>	glycerine ✓ <i>glycerine</i>
unique ✓	microscopical ✓	perpetual ✓	efficiency ✓	influential ✓
perambulating ✓	renown ✓	physician ✓	champagne ✓	exorbitant ✓
hypocritical ✓	atrocious ✓	constitutionally ✓	contagion ✓	palpable ✓
melancholy ✓	eccentricity ✓	fatigue ✓	phlegmatic ✓	fallacious ✓
alienate ✓	poignancy ✓	phthisis ✓	ingratiating ✓	subtly ✓

Comments:

APPENDIX H: NEALE ANALYSIS OF READING PASSAGES

Form 1 — Level 5



16

Among animals the fox has no rival for cunning. Suspicious of man, who is its only natural enemy, it will, when pursued, perform extraordinary feats, even alighting on the backs of sheep to divert its scent.

Parent foxes share the responsibilities of cub-rearing. Through their hunting expeditions they acquire an uncanny knowledge of their surroundings which they use in an emergency.

This is well illustrated by the story of a hunted fox which led its pursuers to a neglected mine-shaft enclosed by a circular hedge. It appeared to surmount the barrier. The hounds followed headlong, only to fall into the accumulated water below. The fox, however, apparently on familiar territory, had skirted the hedge and subsequently escaped.

17

Road Safety (Level 2)

Kim stopped on her way to school. In the middle of the traffic lay two children. Their bicycles had crashed into each other.

Kim ran quickly to help. She saw that no-one was hurt. The children pointed to a television camera. 'We are taking part in a road safety lesson,' they said. (52 words)

COMPREHENSION QUESTIONS

- ✓ 1. Where was Kim going?
To school.
- ✓ 2. Why did Kim stop?
She saw two children lying on the road. She saw an accident etc.
- ✓ 3. What had happened to the bikes?
They had crashed (into each other).
- ✓ 4. How do you think Kim felt?
Frightened, curious, anxious, scared, etc.
- 5. What did Kim do?
She ran to help them.
- 6. Were the children hurt?
No.
- 7. What were the children really doing?
Taking part in a lesson. Making a television program.
- 8. How did Kim find out what was happening?
She saw the cameras. The children pointed to the cameras. The children told her.

Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals	Total Errors	Comprehension	Time
		1				1	6	44

Ali (Level 3)

As Ali sheltered in an old temple, his shoulder knocked a secret spring. Instantly, he was thrown into an underground room.

In the darkness, the walls seemed to be covered with jewels. Ali rested awhile. He knew that desert travellers often imagined strange things. Later, he explored the place for a way to escape. To his amazement, the jewels were still there. He had found a palace that had been buried long ago. (73 words)

COMPREHENSION QUESTIONS

- ✓ 1. Why did Ali go into the temple?
To shelter.
- ✓ 2. How did he find the secret spring?
His shoulder bumped (knocked) against it.
- ✓ 3. What happened when he touched the spring?
He fell into an underground room (cellar).
- ✓ 4. What did he see there?
Precious jewels.
- ✗ 5. Why did Ali not rush to look at the jewels?
He did not think that they were real. He thought his eyes were playing tricks on him. He thought he was imagining things.
- ✓ 6. After he had rested, what did Ali try to find?
A way (out) to escape.
- ✗ 7. Why was he so surprised?
To find that the jewels were real.
- 8. How had the jewels come to be there?
They belonged to a buried palace of long ago.

Mispronunciations	Substitutions	Refusals	Additions	Omissions	Reversals	Total Errors	Comprehension	Time
1/11				11		6	1	49

Ivan (Level 4)

APPENDIX I: RUNNING RECORD OF READING

RUNNING RECORD SHEET

Name: Julia Date: 11/10/01 D. of B.: _____ Age: _____ yrs _____ mths
 School: _____ Recorder: J Morgan

Text Titles	Errors Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
<u>(Easy) Road Safety lesson</u>	<u>1/52</u>	<u>1: 52</u>	<u>98 %</u>	<u>1: 2</u>
Instructional <u>(yellow level 2)</u>		<u>1:</u>	_____ %	<u>1:</u>
Hard <u>Neale Analysis of Reading</u>		<u>1:</u>	_____ %	<u>1:</u>

Directional movement

Analysis of Errors and Self-corrections
 Information used or neglected [Meaning (M), Structure or Syntax (S), Visual (V)]

(Easy) mostly fluent, but stalled on one section. Did not attempt 1 word.
 Instructional Re-ran once, & repeated a word once. One self correction,
using meaning & visual.
 Hard _____

Cross-checking on information (Note that this behaviour changes over time)

Page	Title	Count		Analysis of Errors and Self-corrections	
		E	SC	Information used E MSV	SC MSV
	<u>Road Safety Lesson</u>				
	<u>vv vvv vvv.</u>				
	<u>vvvvvvvv.</u>				
	<u>v bicycles T vvvvv.</u>	<u>1</u>		<u>msv</u>	
	<u>vvvvv. v was sc vvvvv</u> <u>saw</u>		<u>1</u>	<u>msv</u>	<u>(msv)</u>
	<u>vvvvvv (read slowly here)</u>				
	<u>vvvvvv vR vvvv</u>				

RUNNING RECORD SHEET

Name: ~~_____~~ Alistair Date: 26/10/02 D. of B.: _____ Age: _____ yrs _____ mths

School: _____ Recorder: V. Morgan

Text Titles	Errors Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
Easy _____	_____	1: _____	_____ %	1: _____
Instructional <u>Ali (L3 yellow)</u>	<u>6/73</u>	1: <u>12</u>	<u>91</u> %	1: <u>4</u>
Hard <u>Neale Analysis of Reading</u>	_____	1: _____	_____ %	1: _____

Directional movement _____

Analysis of Errors and Self-corrections

Information used or neglected [Meaning (M), Structure or Syntax (S), Visual (V)]

Easy _____

Instructional strongest cue is visual, but is rereading for meaning. independently self corrected 2 errors. Last line read 2 words were inaudible.

Hard _____

Cross-checking on information (Note that this behaviour changes over time)

Page	Title	Count		Analysis of Errors and Self-corrections	
		E	SC	Information used	Information used
		E MSV	SC MSV		
	<u>Ali</u>				
	<u>✓ E/Li sheltered</u> <u>Ali sheltered vvvv</u>	2		<u>MSV</u> <u>MSV</u>	
	<u>vvvvvv Instly</u> <u>Instantly v</u>	1		<u>MSV</u> <u>MSV</u>	
	<u>vvvv. in v in v</u> <u>✓</u>		2	<u>MSV</u> <u>MSV</u>	<u>MSV</u> <u>MSV</u>
	<u>vvvvv. vvv.</u>				
	<u>vvv dessert</u> <u>desert vvvvv.</u>	1		<u>MSV</u>	
	<u>vvv vvv vvvv.</u>				
	<u>vv amaze ✓</u> <u>amazement</u>				
	<u>He vvv place vvvvvv</u>	2		<u>MSV</u> <u>MSV</u>	
		6	2	133	222

RUNNING RECORD SHEET

Name: Oscar Date: 4/4/01 D. of B.: _____ Age: _____ yrs _____ mths
 School: _____ Recorder: _____

Text Titles	Errors Running Words	Error Ratio	Accuracy Rate	Self-correction Ratio
Easy _____		1: _____	_____ %	1: _____
Instructional _____		1: _____	_____ %	1: _____
(Hard) <u>Ali (level 3 yellow)</u> <u>Nucleus Analysis of Reading</u>		1: <u>7.3</u>	<u>86</u> %	1: <u>4</u>

Directional movement _____
Analysis of Errors and Self-corrections
 Information used or neglected [Meaning (M), Structure or Syntax (S), Visual (V)]

Easy _____
 Instructional _____

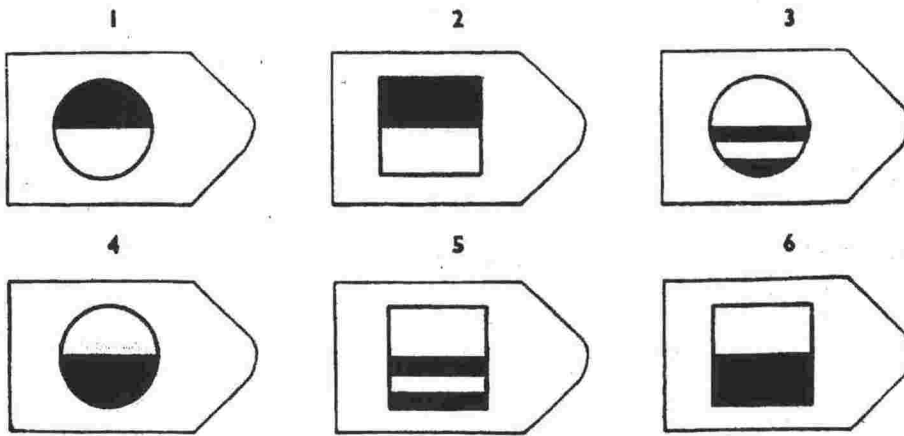
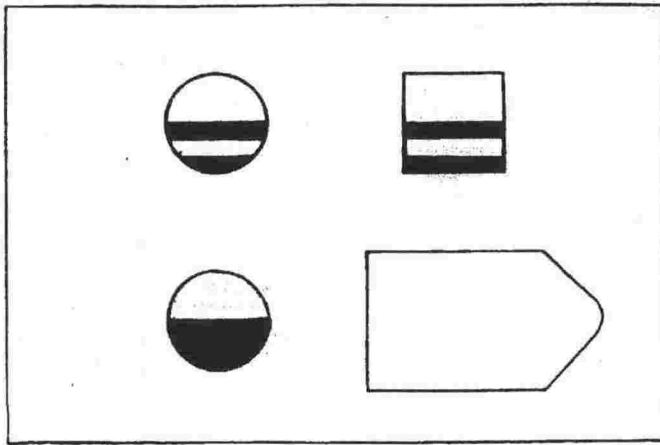
Hard strong reliance on visual cue, some teacher told". Some independent monitoring, self correcting.

Cross-checking on information (Note that this behaviour changes over time)

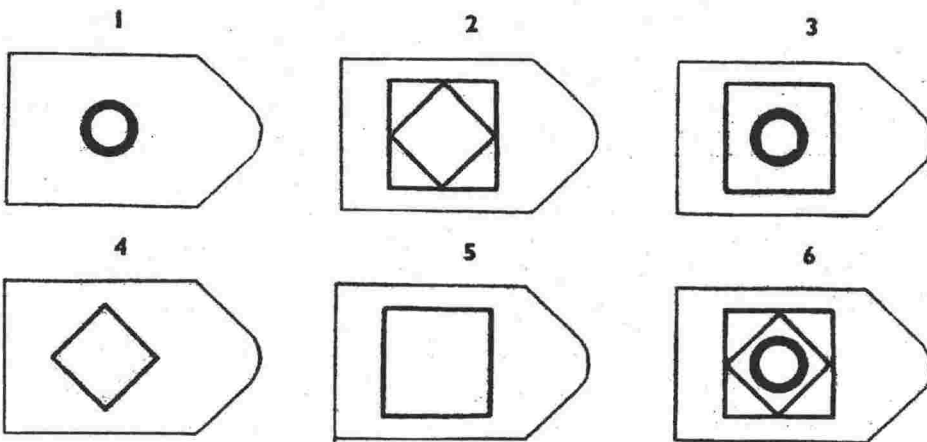
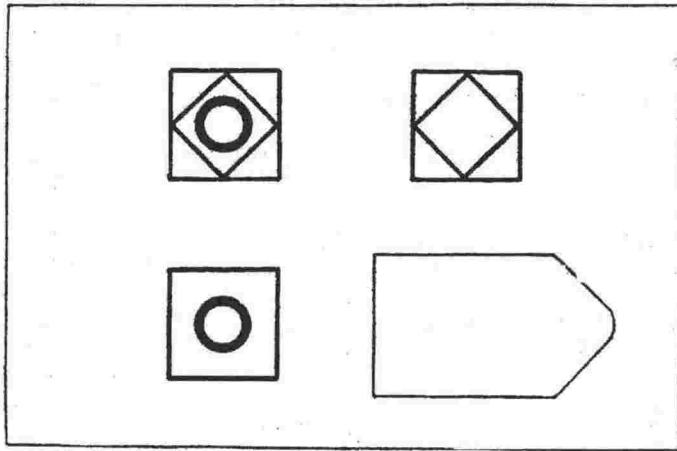
Page	Ali	Title	Count		Analysis of Errors and Self-corrections	
			E	SC	Information used	Information used
			E	SC	E MSV	SC MSV
		<u>Ali T</u> <u>ssh</u> <u>sheltered T</u> vvvv	2		mSV ms(V)	
		<u>vvv over</u> vvv.	1		mSV	
		<u>Instally</u> <u>Fruently</u> vvvvvvvv <u>darkness</u> <u>darkness</u>	2		mSV mSV	
		<u>vvvvvvvv</u> - <u>Ali T</u> <u>rested T</u>	2		mSV mSV	
		<u>while</u> sc. <u>with</u> sc <u>dest</u> <u>awhile</u> sc. <u>that</u> sc <u>desert</u>	1	2	(mSV) mSV msV (mSV)	(mSV)
		<u>vv imagined</u> sc <u>imaged</u> sc vv. vvvvvvvvv.		1	ms(V) (mSV)	
		<u>vv amazement T</u> vvvvv	1		mSV	
		<u>vvvv place</u> <u>palace</u> vvvvvv	1		(mSV)	
			10	3	2 2 8	2 3 3

APPENDIX J: *COLOURED PROGRESSIVE MATRICES TEST*

B 8



B 12



APPENDIX K: BRITISH PICTURE VOCABULARY SCALE TEST

Administering the Test Items

Caution: Before administering the actual test items, it is essential to begin the test session correctly, use the training plates appropriately, and only then introduce these test items. Instructions to carry out all three of these steps are found on the examiner's side of the training plates.

Where to start the Test

For a subject assumed to be of average ability, find the set corresponding with the person's age and begin the test with the first word in that set (otherwise consult the manual). Once you begin a set, always administer every item in it.

How to establish the Basal Set

If no more than one error is made in the Start Set, a basal is established. If more than one error is made, test backwards by sets in reverse order until no more than one error is made in a set. This becomes the Basal Set.

How to establish the Ceiling Set

Only after the Basal Set has been established, test forward by sets until eight or more responses are wrong in a set of 12 items. This is the Ceiling Set.

How to record the responses and errors

As illustrated below, record the subject's responses for each item administered and draw an oblique line through the circle (○) after the response if incorrect. If correct, leave the circle blank.

12 drum (3) 4

Upon completion of each set, record the number of wrong responses in the space provided.

Remember these Rules

- * Once a set is started, always administer *all 12 items* in that set.
- * The Basal Set rule is *one or no errors* in a set.
- * Use the *lowest* Basal Set to obtain the raw score.
- * If the subject has made more than one error in Set 1, item 1 becomes the Basal.
- * The Ceiling Set rule is *eight or more errors* in a set.
- * Use the *lowest* Ceiling Set to obtain the raw score.

Set 1	↓Start - Ages 2½-3	Response
1	hand	(1) <input type="checkbox"/>
2	baby	(2) <input type="checkbox"/>
3	cat	(2) <input type="checkbox"/>
4	jumping	(4) <input type="checkbox"/>
5	bus	(4) <input type="checkbox"/>
6	drinking	(3) <input type="checkbox"/>
7	tractor	(4) <input type="checkbox"/>
8	running	(1) <input type="checkbox"/>
9	gate	(3) <input type="checkbox"/>
10	reading	(2) <input type="checkbox"/>
11	cow	(1) <input type="checkbox"/>
12	drum	(3) <input type="checkbox"/>
		No. of errors <input type="text"/>

Set 2	↓Start - Ages 4-5	Response
13	ladder	(2) <input type="checkbox"/>
14	plant	(1) <input type="checkbox"/>
15	circle	(4) <input type="checkbox"/>
16	candle	(2) <input type="checkbox"/>
17	wooden	(2) <input type="checkbox"/>
18	nest	(4) <input type="checkbox"/>
19	dancing	(4) <input type="checkbox"/>
20	tortoise	(1) <input type="checkbox"/>
21	farmer	(3) <input type="checkbox"/>
22	cobweb	(3) <input type="checkbox"/>
23	neck	(3) <input type="checkbox"/>
24	penguin	(1) <input type="checkbox"/>
		No. of errors <input type="text"/>

Set 3	↓Start - Ages 6-7	Response
25	wrapping	(4) <input type="checkbox"/>
26	fruit	(1) <input type="checkbox"/>
27	smelling	(3) <input type="checkbox"/>
28	arrow	(1) <input type="checkbox"/>
29	teacher	(2) <input type="checkbox"/>
30	full	(3) <input type="checkbox"/>
31	panda	(4) <input type="checkbox"/>
32	exercising	(4) <input type="checkbox"/>
33	coin	(2) <input type="checkbox"/>
34	claw	(1) <input type="checkbox"/>
35	measuring	(2) <input type="checkbox"/>
36	peeling	(3) <input type="checkbox"/>
		No. of errors <input type="text"/>

Set 4	Start - Ages 8-9	Response
37	tambourine	(1) <u>2</u> ○
38	castle	(2) <u>1</u> ○
39	lock	(4) <u>1</u> ○
40	telescope	(3) <u>1</u> ○
41	dripping	(2) <u>1</u> ○
42	huge	(3) <u>2</u> ○
43	furry	(4) <u>1</u> ○
44	nostril	(1) <u>1</u> ○
45	roots	(1) <u>1</u> ○
46	vegetable	(3) <u>1</u> ○
47	diving	(2) <u>1</u> ○
48	liquid	(4) <u>1</u> ○
		No. of errors <u>2</u>

Set 7	Start - Age 12	Response
73	greeting	(4) <u>1</u> ○
74	anthers	(1) <u>2</u> ○
75	orbit	(1) <u>1</u> ○
76	collision	(1) <u>3</u> ○
77	inflated	(4) <u>2</u> ○
78	applauded	(3) <u>4</u> ○
79	nutritious	(3) <u>1</u> ○
80	adjustable	(2) <u>4</u> ○
81	scalp	(2) <u>4</u> ○
82	reptile	(2) <u>4</u> ○
83	resuscitation	(3) <u>7</u> ○
84	links	(4) <u>1</u> ○
		No. of errors <u>10</u>

Set 5	Start - Age 10	Response
49	luggage	(3) <u>1</u> ○
50	dentist	(3) <u>1</u> ○
51	weasel	(2) <u>1</u> ○
52	tugging	(1) <u>1</u> ○
53	hive	(1) <u>1</u> ○
54	delighted	(4) <u>3</u> ○
55	globe	(3) <u>1</u> ○
56	furious	(4) <u>4</u> ○
57	swamp	(1) <u>2</u> ○
58	waiter	(2) <u>1</u> ○
59	target	(2) <u>1</u> ○
60	eagle	(4) <u>1</u> ○
		No. of errors <u>5</u>

Set 8	Start - Ages 13-15	Response
85	arctic	(2) <u>1</u> ○
86	glider	(2) <u>1</u> ○
87	lecturing	(3) <u>1</u> ○
88	engraving	(1) <u>1</u> ○
89	co-operation	(2) <u>1</u> ○
90	fictional	(3) <u>1</u> ○
91	hoisting	(1) <u>1</u> ○
92	isolation	(3) <u>1</u> ○
93	syringe	(4) <u>1</u> ○
94	composing	(4) <u>1</u> ○
95	lera	(1) <u>1</u> ○
96	weary	(4) <u>1</u> ○
		No. of errors <u>1</u>

Set 6	Start - Age 11	Response
61	pair	(2) <u>1</u> ○
62	coming	(4) <u>1</u> ○
63	tubular	(2) <u>1</u> ○
64	interviewing	(1) <u>1</u> ○
65	snarling	(1) <u>4</u> ○
66	medication	(4) <u>2</u> ○
67	pod	(1) <u>1</u> ○
68	grain	(4) <u>1</u> ○
69	pedal	(3) <u>1</u> ○
70	predatory	(2) <u>1</u> ○
71	balcony	(3) <u>7</u> ○
72	polluting	(3) <u>2</u> ○
		No. of errors <u>5</u>

Set 9	Start - Ages 16-21	Response
97	parallel	(4) <u>1</u> ○
98	dilapidated	(3) <u>1</u> ○
99	departing	(2) <u>1</u> ○
100	easel	(4) <u>1</u> ○
101	embracing	(3) <u>1</u> ○
102	utensil	(2) <u>1</u> ○
103	quartet	(4) <u>1</u> ○
104	citrus	(3) <u>1</u> ○
105	digit	(1) <u>1</u> ○
106	leline	(2) <u>1</u> ○
107	pillar	(1) <u>1</u> ○
108	timer	(1) <u>1</u> ○
		No. of errors <u>1</u>

APPENDIX L: PARENT QUESTIONNAIRE

Procedure:

Orally administered parent questionnaire/interview.

To be conducted in the parent's home or other setting of their choice.

Introductory comments to be read before commencing.

Tone to be informal; if additional relevant discussion occurs broader than the specific questions this will be recorded; e.g. developmental history may be referred to or photos, records or work samples presented.

Where records and work samples are presented parental permission will be sought to photocopy data.

Researcher to ask questions and records responses to all but the Jones (1988) checklist. Parents to be given a copy of this checklist to complete at that point in the interview.

Acceptable prompts: "Can you tell me more about that?" or "Anything else?"

A card with contact details to be left, and date of next research session to be recorded.

Introduction:

"Thank you for your time with this interview. I am looking forward to learning from you. The purpose of the interview is to provide you with an opportunity to describe your child's development, learning styles and reading behaviours. In addition some information on the make up and values of your family is relevant to this research.

I have prepared general questions. However, if you have other points you wish to share, please feel free to add anything extra. I am looking very broadly at your child's learning and behaviour, so all your comments will be of interest.

You may have written records that support some of the points you make. If so, I would be most interested in borrowing them to photocopy relevant sections with your permission. Examples could be a Plunket book, Childcare Centre notebook or formal test.

I want to remind you that everything you say will be treated confidentially, and that you are free to stop the interview or pull out of the research at any time. As we go I'd like to record your responses on my copy of the questions. May I also tape-record our interview?

So, if you are still willing, let's begin...!"

Parent Interview 1

Child code: _____ Date: _____

Name of interviewee and relationship to student: _____

Family Information:

- A1. *For my records, could you tell me again the name of your child involved with this research project?*
- A2. *What is her/his date of birth?*
- A3. *What are the names, gender and ages of all other family members?*
 Prompts: Are there any (other) children? Are there any other adults living in the home?
- A4. *What is the highest educational qualification of each of the parents?*
 If questioned: 'Parents' are defined as "all adults with care-giving responsibility or major interest in the child's development and well-being."
- A5. *What are some of the things your family enjoys doing together?*
- A6. *Could you tell me a little about everyone who is a reader in this family and a bit about each person's reading habits, if they do read?*

Describing your child:

Now, thinking about (____) ...

- B1. *Who does your s/he like to spend time with?*
- B2. *What activities do they like doing together?*
- B3. *How would you describe (____) emotionally?*
- B4. *Thinking about (____)'s learning, have you noticed whether there any particular ways (____) has of attempting new tasks?*
- B5. *What motivates her/him to complete tasks?*
- B6. *Have you noticed any special abilities or talents of (____) in any area?*
 Prompt: Can you tell me more about that?
- B7. *How do you believe (____) ability and achievement level compares with other children?* Prompt: How does s/he compare to other children of the same age?
- B8. *What things have you noticed (____) which has shown you this?*

- B9.** *Here is a short checklist. I'd like you to tick all the statements that apply to (____). You can add any extra comments if you wish.*
 Give parents a pen and checklist (attached to end of this interview schedule).
Comments:

Development of reading abilities

Now, thinking about the earlier years ...

I am interested in knowing at what age (____) could do several things.

- C1. *Do you remember how old (____) was when s/he was FIRST read to?*
- C2. *Do you remember how often was s/he read to when s/he was younger?*
- C3. *Do you remember at what age, if any, a regular story time became established?*
- C4. *Do you remember for what length of time, for example about how many minutes, was s/he read to each day?*
- C5. *Do you remember when (____) said his/her first word?
 What was this word?*
- C6. *Do you remember at what age could she say a two-word sentence, for example "want drink"?*
- C7. *And when could s/he say or sing some familiar nursery rhymes or poems?*
- C8. *Can s/he say or sing the whole alphabet from memory?
 If so: Do you remember the age at which this happened?*
- C9. *Do you remember when s/he was first able to look at and name a letter of the alphabet correctly?*
- C10. *Can s/he recognise and name all 26 letters of the alphabet correctly?
 If so: Do you remember the age at which this happened?*
- C11. *Can s/he name a letter SOUND? For example making the sound "puh" for the letter "p". If so: Do you remember the age at which this happened?*
- C12. *When could (____) read some familiar words without any help?*
- C13. *When could s/he 'sound out' some words, for example /k/a/t being 'cat'.*
- C14. *Can s/he read some familiar books without any help?
 If so: Do you remember the age at which this happened?*

- C15. *Can you give me an example or two of the first books s/he could read without any help?*

Teaching in the Home

- D1. *How does your family help (____) to learn new things?*
- D2. *Is there anything you do to help (____) when s/he is having difficulty with reading?*
- D3. *Now, thinking about all kinds of learning, what teaching activities, if any, have you used to help (____)?*
- D4. *Has anyone else at all used any teaching activities with (____)?*
 Prompts: Who did the teaching? Please tell me about the teaching.
- D5. *Who is it, if anyone, who has mainly taught your child?*
 If asked if I mean taught them to read, reply with "You can tell me about being taught to read, and being taught other things too."
- D6. *Do you or anyone else now read to (____)?*
 If so: Who does? What kind of reading material is read to (____)?
- D7. *Can you tell me if you or anyone in (____)'s extended family has worked as a teacher?*
 Prompt: Can you tell me more about that?
- D8. *Can you tell me if you or anyone in (____)'s extended family has read books on how to teach children to read?*
 Prompt: Can you tell me more about that?
- D9. *Have you talked to other people about (child' name)'s reading ability?*
 Prompt: Who have you talked to?
- D10. *Can you tell me about the reactions that you receive when you talk to people about (____)'s reading ability?*
- D11. *Have you had any 'professional' testing of (____)'s abilities or learning carried out?*
 Prompt: Please give me details about this.

Description of Current Reading Behaviour

Please give me as much information as you can about (____)s PRESENT reading.

- E1. *How does (____) feel about reading?*
 Prompt: How does s/he show this (feeling described)?

- E2. *Please tell me the kind of reading material that (____) reads now.*
 Prompt: Any other kind of material that (____) reads?
- E3. *What kinds of reading material does (____) now enjoy MOST?*
- E4. *Who chooses the material that (____) now reads?*
- E5. *Where does the reading material come from?*
- E6. *Does (____) read aloud to you or other people?* Prompt: Which people?
 Can you tell me more about when s/he reads to you or other people?
- E7. *Does (____) read to her/himself?*
 Prompt: Can you tell me more about when s/he reads to her/himself?
- E8. *When (____) reads by her/himself, does she read aloud or silently?*
If this varies: please tell me more about the situations.
- E9. *What does (____) do when meeting a word s/he does not know how to read?*
- E10. *What does (____) do when s/he does not understand what s/he is reading?*
- E11. *Do you help (____) with her/his reading? If so: Please describe what you do*
 Prompts; Are there other things you do to help her/him?
- E12. *What does (____) do when you help her/him?*
- E13. *How do you think (____) sees her/himself as a reader?*
 Prompt: How would s/he perceive her ability level?
- E15. *Do you feel (____) has a good understanding of ideas from text?*
 Prompt: What about comprehension?

Transition

- F1. *Does your child attend an early childhood centre? Which one?*
- F2. *How many hours does s/he attend on each day?*
- F3. *Why was this centre chosen?*
- F4. *Do you have any goals regarding what you hope (____) will achieve during her/his time at (name of early childhood centre)?*
 Prompt: Can you tell me (more about) what these goals and hopes are?

- F5. *Are there any other places or programmes that (____) is involved with to support her/his learning?* Prompt: Can you tell me more about that?
- F6. *Have you decided which primary school (____) will attend?*
If so: Which one?
- F7. *What has (will) influence(d) your choice of school?*
- F8. *Do you have any goals about what you hope (____) will achieve during her/his first few months of primary school?*
Prompt: Can you tell me (more about) what these goals and hopes are?

Conclusion

- G1. *Are there any other points that you think would be useful for me to know about (____) learning in general?*
- G2. *And finally, are there any other points that you think would be useful for me to know about (____) reading?*

Thank you for all your helpful information.

I will send you a copy of my record of this interview to you for your verification.

If there is anything else that you think would be useful for me to know you can add to the record I send you, or just let me know at any time during the research.

Thanks again!

Describing your child:**Checklist**

Please tick if any of the following statements apply to your child:

- Has a quick sharp memory
- Asks a lot of questions
- Is nervous about relationships with other children
- Learns new material quickly
- Easily performs difficult manual tasks
- Is bored by normal activities
- Has difficulty making friends
- Shows unusual talent in a special area such as music or art
- Shows interest and aptitude in many areas
- Has a larger than usual vocabulary for age
- Prefers solitary activities
- Is able to verbally express ideas easily
- Is anxious about work being perfect
- Adjusts to change easily
- Has a long attention span

(list adapted from Schwartz, 1980, cited in Jones 1988)

Please add any further statements that describe your child's personality:

APPENDIX M: TEACHER OBSERVATION SCALES

III CREATIVE THINKING CHARACTERISTICS

If possible could you please tick the boxes & return to me - I'll do the calculator myself V.

Teacher Observation Scales
For Identifying Children With Special Abilities

Name: _____ (First) _____ (Last)
 Age: 4 yrs 11 months Gender: F
 School: _____ Class/Year: Preschool
 Teacher: _____ Date: 26/08/02

The *Teacher Observation Scales* have been developed to assist teachers identify children with special abilities in the areas of learning, social leadership, motivation, creative thinking and self-determination.

Directions For Use:

Each statement in the five scales should be considered *separately*. The degree to which you have observed the presence or absence of each behavioural characteristic is rated by placing a tick in the appropriate box using the following scale values:

1. The characteristic has SELDOM or NEVER been observed.
2. The characteristic has been observed OCCASIONALLY.
3. The characteristic has been observed OFTEN.
4. The characteristic has been observed ALMOST ALWAYS or ALWAYS.

Scale Score Profile:

To provide a profile of the student's characteristics enter the total weighted score for each scale in the boxes below:

I Learning Characteristics 51
 II Social Leadership Characteristics 47
 III Creative Thinking Characteristics 41
 IV Self-Determination Characteristics 31
 V Motivational Characteristics 29

Seldom Occasionly Almost Always

	1	2	3	4
1. Produces original ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Displays intellectual playfulness, imagination and fantasy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Creates original stories, plays, poetry, etc., or invents things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Has a keen sense of humour and sees humour in the unusual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Generates unusual insights.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Enjoys speculation and thinking about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Demonstrates awareness of aesthetic qualities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is not afraid to be different.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Generates a large number of ideas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Is prepared to experiment with novel ideas and risk being wrong.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Seeks unusual rather than conventional relationships.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Weighted Score

Scoring:

1. Sum the number of ticks in column 3 and record here 3 × 3 = 9
2. Sum the number of ticks in column 4 and record here 6 × 4 = 22
3. Add the weighted scores for columns 3 and 4 (= Total Weighted Score) 41

Teacher Comment:

~~_____~~ demonstrates a wonderful imagination and sense of humour in the stories she writes and games she plays. She often takes a unique approach to her work and sees new and interesting possibilities in activities.

I LEARNING CHARACTERISTICS

	Seldom	Occasionally	Often	Almost Always
1. Displays logical and analytical thinking.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is quick to see patterns and relationships.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3. Achieves quick mastery of information.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4. Strives for accurate and valid solutions to problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5. Easily grasps underlying principles.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6. Likes intellectual challenge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7. Jumps stages in learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8. Seeks to redefine problems, pose ideas and formulate hypotheses	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9. Problem-finds as well as problem-solves.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10. Reasons out things for self.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11. Formulates and supports ideas with evidence.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12. Can recall a wide range of knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13. Independently seeks to discover the why and how of things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Scoring:

- Sum the number of ticks in column 3 and record here $1 \times 3 = 3$
- Sum the number of ticks in column 4 and record here $12 \times 4 = 48$
- Add the weighted scores for columns 3 and 4 (= Total Weighted Score) 51

Teacher Comment:

She has a thirst for experiences and knowledge. She loves challenges and to be challenged. She processes new information quickly and assimilates new concepts easily.

II SOCIAL LEADERSHIP CHARACTERISTICS

	Seldom	Occasionally	Often	Almost Always
1. Takes the initiative in social situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is popular with peers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Communicates well with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Actively seeks leadership in social situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Shows ability to inspire group to meet goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Persuades group to adopt ideas or methods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Is self confident.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is adaptable and flexible in new situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Actively seeks leadership in sporting activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10. Is socially mature.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Is willing to take responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Synthesises ideas from group members to formulate a plan of action.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Scoring:

- Sum the number of ticks in column 3 and record here $1 \times 3 = 3$
- Sum the number of ticks in column 4 and record here $11 \times 4 = 44$
- Add the weighted scores for columns 3 and 4 (= Total Weighted Score) 57

Teacher Comment:

She has always seen herself as capable of undertaking work generally performed by the older children. She has always sought out friendships and involvement with older children, and has been easily accepted by them.

IV SELF- DETERMINATION CHARACTERISTICS

	Almost Always	Often	Occasionally	Seldom	
	4	3	2	1	
1. Is sceptical of authoritarian pronouncements.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Questions arbitrary decisions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Pushes teachers and adults for explanations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Displays a precocious interest in 'adult' problems.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Is reluctant to practise skills already mastered.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Is easily bored with routine tasks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Expresses, ideas, preferences and opinions forthrightly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. Relates well to older children and adults and often prefers their company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9. Asks searching questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Scoring:

- Sum the number of ticks in column 3 and record here $5 \times 3 = 15$
- Sum the number of ticks in column 4 and record here $4 \times 4 = 16$
- Add the weighted scores for columns 3 and 4 (= Total Weighted Score) 31

Teacher Comment:

Will question and probe until she is satisfied with the answer and/or the reason for it. She is Curious And wants to know.

V MOTIVATIONAL CHARACTERISTICS

	Almost Always	Often	Occasionally	Seldom	
	4	3	2	1	
1. Strives for high standards of personal achievement.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Is self-directed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Is highly self-motivated; sets personal goals.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Is persistent in seeing tasks to completion.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Becomes committed to and absorbed in tasks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Tends to be self-critical and evaluative.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Is reliable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Prefers to work independently.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Scoring:

- Sum the number of ticks in column 3 and record here $3 \times 3 = 9$
- Sum the number of ticks in column 4 and record here $5 \times 4 = 20$
- Add the weighted scores for columns 3 and 4 (= Total Weighted Score) 29

Teacher Comment:

Sets high Standards for herself, and Strives towards meeting them.

APPENDIX N: OBSERVATION NOTES

she does appear to be in fighting play the diary does describe it being walked around the mountain and she is moving to herself

P is leading a train around a track a boy and girl both follow with their trains.

another girl working, a boy the working 1/2 playing at end of track. S not disturbed from her play at all she is very close to engine. if I moved my foot I'd touch her - I can hear her voice. S not works seems to have explored every possible route and with a tunnel holes begin to use shelves really exploring how DD can get onto mountain.

2 boys fighting over train I was that - grabbing etc P reacts in and gets - the boys both laugh.

then the boy [redacted] gets P says I had it I had it first both boys pulling at it. Mrs T comes over what's going on.

P has got my train Mrs T use your words - tell him what you want P I did I was it last *first?

Mrs T [redacted] I know you've only been here 2 days but we have to sleep.

M I gave him that one

Mrs T Good boy you give him that one (P gets what he wants). (but you [redacted] had not to use comp. it's broken).

P [redacted] ... puts train in her room.

M on own makes very loud footing noise S ch' surprise - his playing my game - that was the

10-05 P goes over to comp - no one noticed

S goes to other end of room

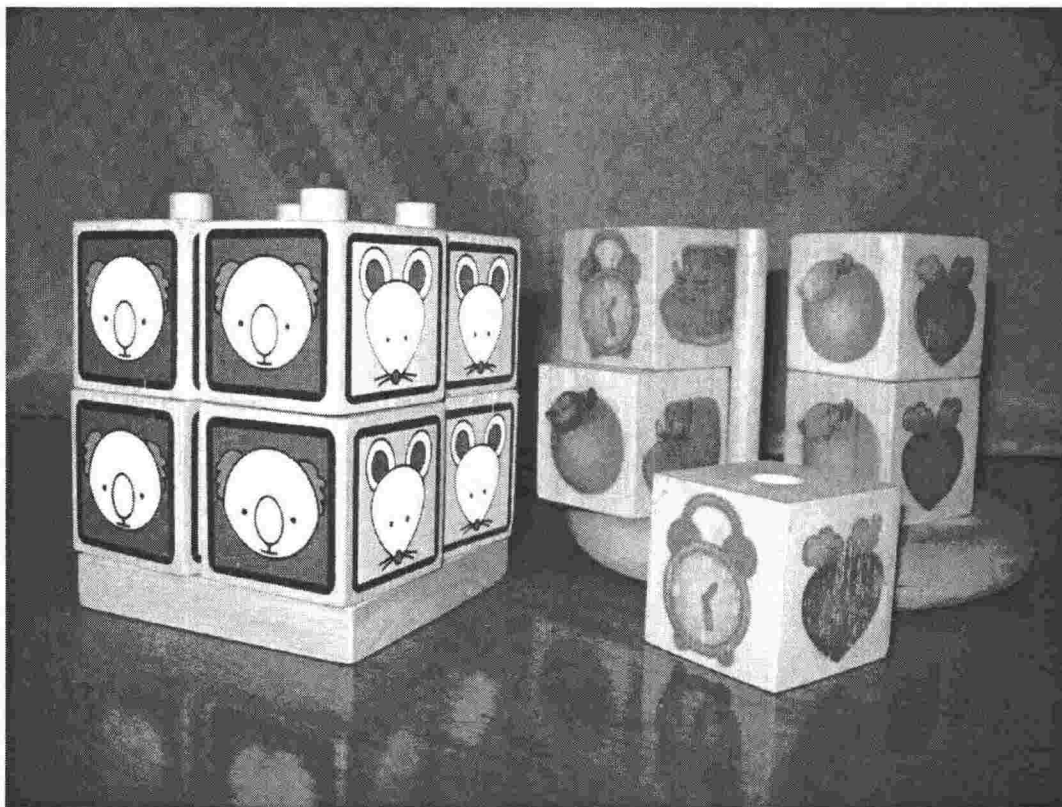
using comp etc - doesn't appear to be taken at all adapting skin, nose, mouth eyes.

Mrs T you've got it going [redacted] good!

he fixed our comp for us - very handy

re: how did you know what to do P? P: "because"

APPENDIX O: THREE-DIMENSIONAL PUZZLE



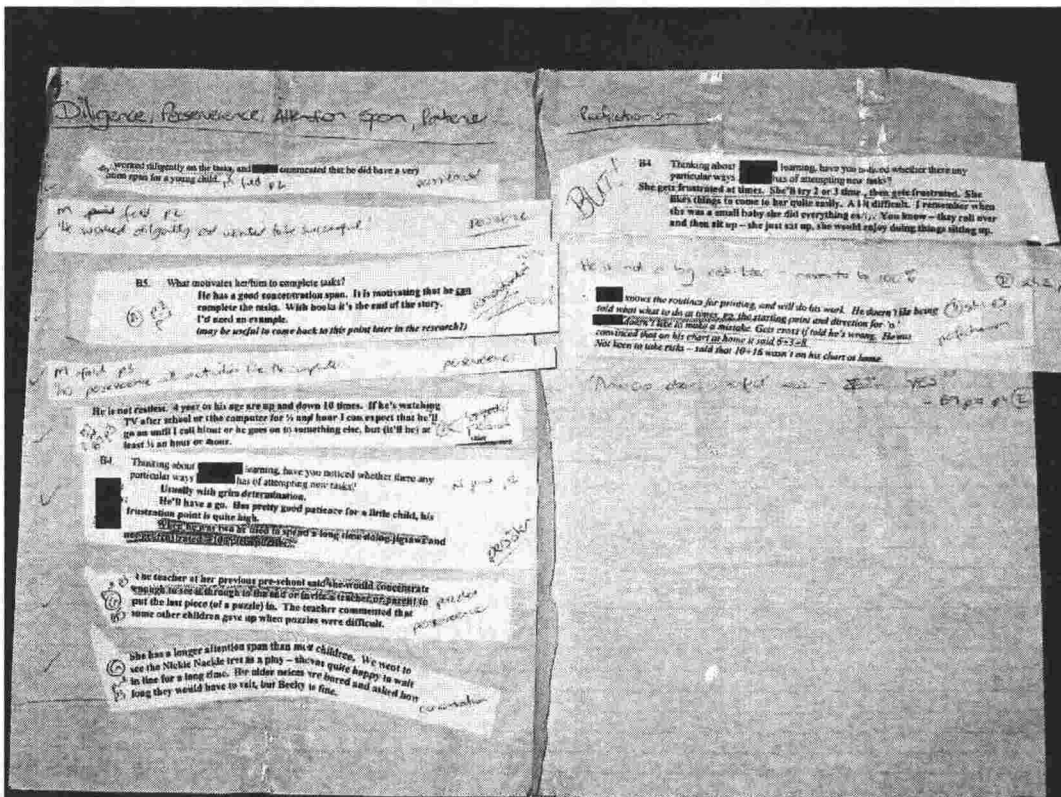
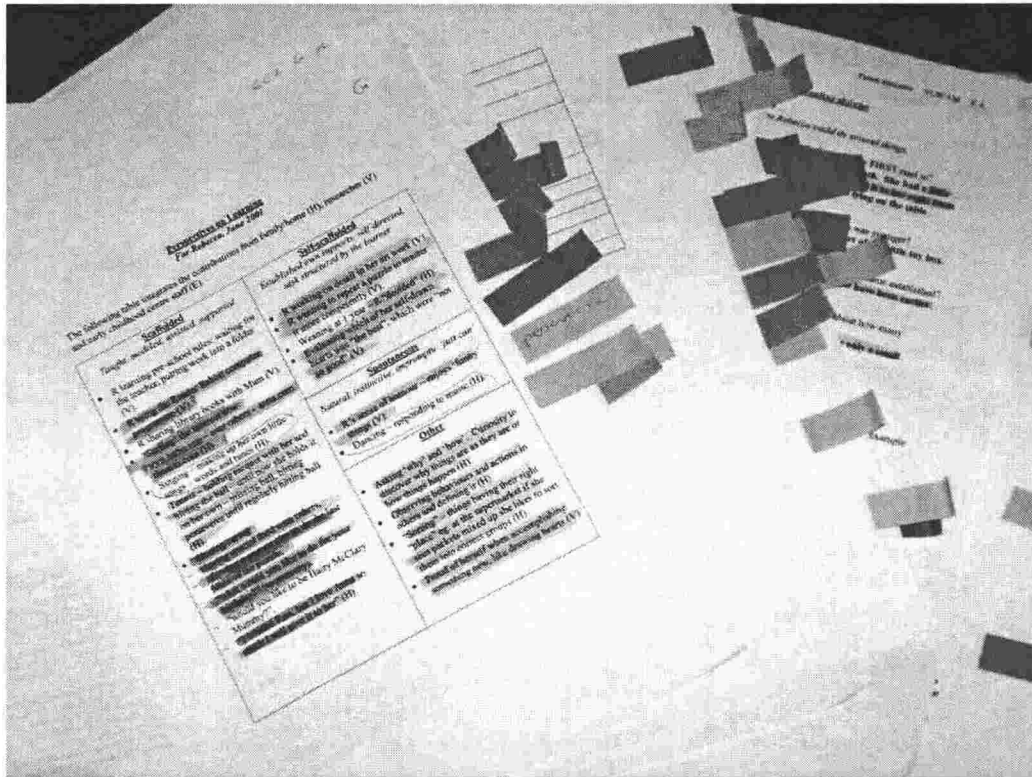
The puzzle is completed when all four sides have four squares that match. The puzzle appears deceptively simple, and requires considering more than one plane simultaneously. If one face of the puzzle at a time is worked on, there may be errors on the sides. For example, to the left of one radish is a clock, and to the left of other radishes are oranges. Placing the wrong radish in position will make the puzzle impossible to complete. Note the same dilemma to the left of the shoes, and to the right of each of the three oranges.

One effective strategy is to construct a vertical corner first, rather than a full face.

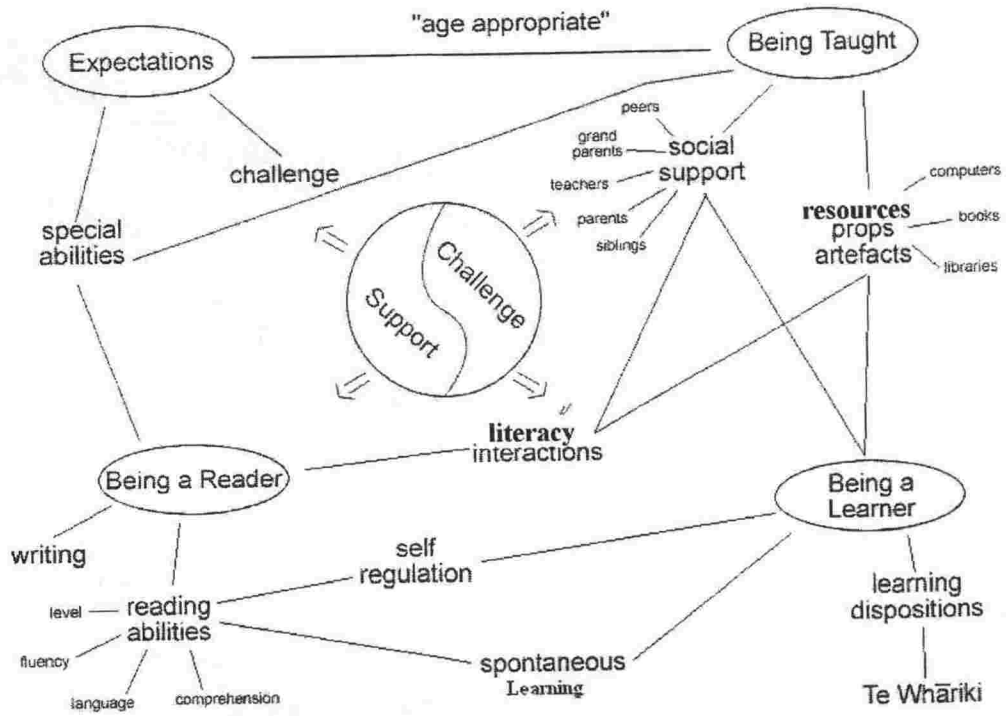
APPENDIX P: RESEARCH TIMELINE

<i>Timeline</i>	<i>Research Activity</i>	<i>Outcome</i>
<i>Phase One: Preparatory</i>		
Prior to June 2000	Preliminary reading Preliminary meeting with potential supervisors	Application and award of Victoria University of Wellington scholarship
June 2000	1 st supervision meeting HOD meeting	Enrolment
June-October 2000	Literature review	Research Proposal completed
November 2000	Consideration of ethical issues	Application to HSS research fund & ethics committee. Ethics approval.
December 2000- Jan. 2001	Ongoing literature reading, preparation for field work	
<i>Phase Two: Field Work</i>		
February 2001 to December 2001	Ongoing Location of subjects, Screening, Field work: Observations, testing, interviews in homes, and early childhood centres. No new subjects accepted beyond Dec. 2001. Max age at any time = 4:10.	Consent gained Transcripts typed Testing results collated Observations typed Preliminary analysis Ongoing review of literature Completion of introductory, methodology and literature review chapters.
January – July 2002	Research on 4 children as they transition to school. Complete research on existing participants.	Extension to ethics approved for school transition. Final data collection and collation.
<i>Phase Three: Review</i>		
July – December 2002	Results and Analysis	Results chapters of thesis drafted. Analysis. Conference presentations
2003 – 2004	Further Analysis, Review	Thesis chapters re-drafted.
2005	Full thesis review, writing conclusion, reference checks, editing	Submit full draft to supervisors
November 2005		Presentation of thesis.

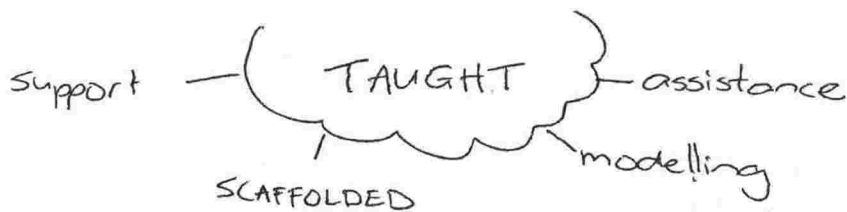
APPENDIX Q: DATA ANALYSIS PROCESS



APPENDIX R: CONCEPT MAP



APPENDIX S: SHARED ANALYSIS



sharing library books with Mum

learning pre school rules:
 - waiting for the teacher
 - putting work into a folder

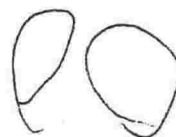
"Surfing the internet now"
 www.barbie.com
 mes orders - anna.com
 thomas.com
 using the header Rabbit computer programme

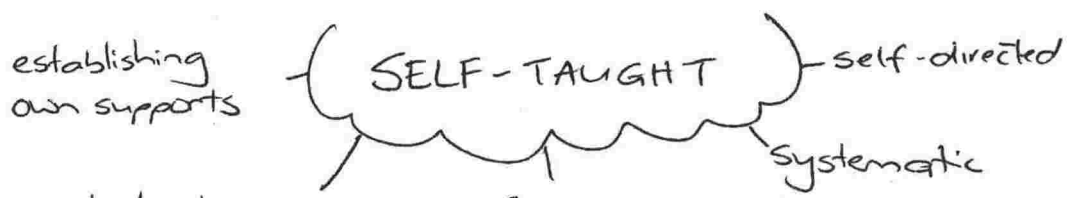
Tennis

Holding racquet with her & hitting ball
 ↓
 Holds on her own - missing ball ... hitting perseveres until regularly hitting well

Sharing / caring

Sharing special food with others
 allowing someone else to do last piece of puzzle
 - "what would you like to do for your birthday"
 - "would you like to be Harry McClary, Mummy?"
 - "I wanted RCO but I love Anna so much I will give it to her."





task structured by the learner

SELF-SCAFFOLDED

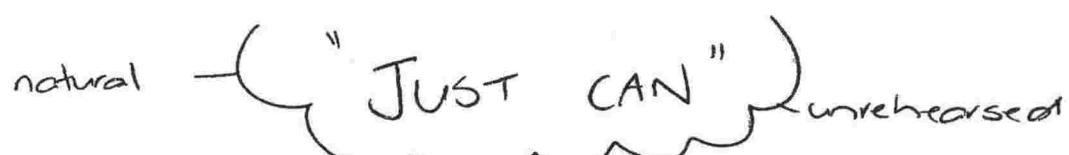
Working on detail in her Art work

wanting to repeat a puzzle to master it more competently

Wearing at 1 year "decided" [child]

Singing

Making up her own little songs - words & tunes



instinctive

impromptu

SPONTANEOUS

dancing - responding to music

sense of humor - enjoys 'funny' things

OTHER

Asking "why"
"how"
Curiosity to
discover why things
are as they are or
how things happen.

Observing behaviour &
actions of others &
defining it.

"Sorting"

~~Person~~
Things having their
right "place" - eg
at supermarket if
she sees packets
mixed up uses to
sort them into correct
groups.



APPENDIX T: TRANSCRIBER FORM*Transcriber/Coder Confidentiality Agreement*

I, _____ (name)

agree to keep confidential all knowledge gained as a result of transcribing or coding research for Valerie Margrain.

I agree to store all original or copied tapes, transcripts, notes or records with care to ensure safety of the data and to maintain confidentiality.

I agree to ensure Valerie Margrain or her university supervisors (within the School of Education, Victoria University of Wellington) receive all original or copied tapes, transcripts, notes or records at the completion of my work.

Signed: _____

Date: _____

APPENDIX U: EXPRESSIVE LANGUAGE RECORD

Expressive language recorded from one child during one early childhood centre observation

"Boing, boing, boing, up and over – whoosh!"

"I touched a Tyrannasaurus and it's dead now."

"Me too!"

"There's lots of eggs in here."

"I'm sitting on 2 eggs

"ooo ... ahhh

We could make that into a curtain."

"Fetch it, fetch the egg."

"We're in our house guarding out dinosaur eggs.

"Oh dear, something wants to eat our eggs.

"A meat eater."

"I'll guard in the middle of them."

"Meat eater wants to eat everything – quick! Snuggle into safety!"

"I'll take two."

I'm sitting on the carpet by the rug by the fire."

"I've got one in my favourite colour

"I've got a good choice."

"There's one girl, but not with her hand up"

"And I want a turn"

"Ah, there we go – hm, this is high."

"It did."

"I can't."

"I'm thirsty."

"There was only a little left, so I had 4 drinks – 1, 2, 3, 4."

"Good end of morning. (pause) It's an hour and a half of the morning to go."

APPENDIX V: COMPUTER USE ANECDOTES

Case	Computer use	Data Source
Alistair	'[He] is into the computer – is using [his sister]'s <i>Sabrina the Teenage Witch</i> CD Rom – a strategy hunt game for 8-12 year olds.	Parent interview, p. 2
David	ECE Teacher says to researcher: 'He fixes our computer for us – very handy!' Girl is having trouble with the computer. She calls for David to help her. When he doesn't respond <i>then</i> she asks the teacher for help. 'It took him no time at all to pick up things like the computer. I bring laptops home from work and he gets through the passwords, I almost have to ask him how to do things.'	ECE2, p. 5 ECE2, p. 4 Parent interview, pp. 3-4
Erin	'[her father] comes home and sits on the computer ... uses the internet for finding information. He'll look up and find out information on lots of different things, he likes to research.'	Parent interview, p. 2
Gillian	Some comprehension programmes. [Her father] has Reader Rabbit.	Parent Interview, D3
Henry	'[He] enjoys correcting my spelling on the computer - it's an easy way to entertain him – if I write a letter he goes into hysterics.'	Parent interview, p.2.
Isla	[At the library] she runs to choose videos and CD Roms.	Parent interview, p. 2
Julia	Used to be very good on the computer when very small – when two and a half was playing all the games for over four years [of age]. Because she was exposed to it from a young age she just picked it up.	Parent interview, p. 3
Lewis	He also has several CDs – Reading Master, Reading Blaster, Winnie the Pooh, his aunt gave him some, and some were bought. ECE teacher stated: 'they have Reader Rabbit on the computer and so on.'	Parent interview, p. 5 ECE1, p. 3
Matthew	Mother noted 'his perseverance with things like the computer' 'on the computer for ... at least half an hour or an hour.'	Field notes, p.3
Nathan	Father: He picked up the computer very quickly, it's actually quite scary ... We have 30-40 CDs, heaps of software, they all have got an educational theme. The whole Reader rabbit series. Bears is a good one. Mother: You notice he's picked up an American accent [from the computer games].	Parent interview, p. 3
Oscar	At age 18 months we have a photo of him sitting at an old computer at [his grandfather's [laying a] toddler game. Also noted that he would often play on the computer when his mother was feeding his baby sister – a 2 year gap between the children. 'Computer hacking ... I used to go to work and moan about what Oscar had done to the TV and computer, and colleagues remarked that he was smart. I think he's picked up a lot from the computer ... He has got an American accent from [the computer] games.	Parent interview, p. 8) p. 4 p. 14

Anecdote from preschool session: 24 children, 2 teachers, 2 computers, free play part of session.

Zoe has moved into the big room to the computer. She scrolls to find the file name for the 'Bears' game, then moves the cursor to 'open', but doesn't double click. She goes through the commands 'my computer – Bears – open.' A list of files appears, but it doesn't open. Zoe looks over at the other computer. Two girls are working on it, a game is running.

Mrs A come over to Zoe. 'Oh, we can get this one working here, Oh someone's done something. Oh someone's done something. Oh no, come on! [in frustration to the computer!]. Girl at next computer says 'Ours is working.'

Mrs A says 'I need to ask Mrs B, just hang on a moment.'

Zoe says 'I want to get back to my computer to ...' [is not responded to, not allowed to try using it at all]. Mrs B comes over to Zoe's computer. She tells Zoe to move, and she sits in Zoe's chair.

Mrs B says 'Has it got Bears on this one? It's got Bears, yes.' [doesn't seek reply from Zoe. Mrs B then clicks on the same as Zoe was clicking on before.

Mrs A comments 'I had it this morning'. She then explains what she know about set up: 'There's my computer, then there's Bears, then Start.'

Mrs B continues doing the same action Zoe had previously been doing, over and over. She says to Zoe 'Just a moment, just a moment.' Zoe hadn't commented or moved, and continues to waits patiently. Mrs B continues: 'I'm sorry darling, I can't get it going for you. I don't know how to do it, I'm sure it's there.'

Zoe goes near the other computer. There is no room for her with the other two girls, so she returns to her computer and sits back on her seat.

Mrs A has been re-trying to get Zoe's computer working, and thinks she is finally successful. She says to Zoe 'There you are – I think these computers are a little bit old – they're slow.' She adjusts Zoe's headphones, saying 'Does that feel comfortable?'. Mrs A then points to the hourglass symbol and explains that this means the computer is not ready yet.

Mrs B calls from the background that Zoe needs to put her reading folder away. Mrs A ask Zoe: 'Do you want to go quickly and do that?' Zoe shakes her head. Mrs A says 'I'll keep your place for you.' Zoe is still hesitant, so Mrs A says 'I'll sit on the chair and keep your place for you.' Zoe goes and puts her folder away, then returns. Mrs A shows her that the hourglass has gone and it is ready.

Zoe tries to operate the programme, but it doesn't work beyond the opening page. Zoe does not ask for help.

There is a loud scream from the main room. Mrs A is diverted to help another child. The teachers clap hands, one of them says it is tidy up time. Zoe ignores this, and manages to get the computer working. Mrs A comes over and lifts Zoe's headphones and suggests that she plays after morning tea. Zoe ignores he and stays at the computer.

Mrs B says to Zoe: 'It's not working, sorry.' Zoe replies 'Yes'.

Mrs B responds 'Oh! You got it working! How did you do that?'

Mrs A says 'It's working now. She doesn't know what she did, but ...'

Zoe uses the mouse to knock down skittles on the programme and gets a bear to stand them up again. She clicks on a chest of drawers. Then she clicks on a doorknob. The door opens and her bear goes outside in the programme.

'Tidy up time!' a girl yells at Zoe, and another girl who in on the next computer.

Mrs B tells Zoe to wash her hands for morning tea. Zoe gets up and puts the headphones down on the table. Mrs B tells the other girl to hang up her headphones on the hook. Zoe returns and hangs up her headphones on the hook too. (G: ECE2, p. 4)

APPENDIX W: TEACHER PROVIDED WORKSHEET

A Walk with GrandpaCircle the words which best describe Grandpa

Grumpy Funny Tricky Boring Old
 Grey Forgetful Young Furious

Can you spot the mistake? Colour in all the words that make these sentences wrong.

"A walk won't do you good."

Going out with Grandpa is ~~boring~~.

"The post-box is full of ~~cats~~."

"I'll push you ~~first~~ if you push me ~~second~~," says Grandpa.

Grandpa is too skinny for the slide.

"I'm always ~~tricky~~!" says Grandpa.

Lovely
work



APPENDIX X: 19 CATEGORIES OF RESOURCE, PROVIDED BY PARENT

Valerie: Thinking about all kinds of learning, what teaching activities, if any have you used to help Isla?

Parent: So many! Puzzles, videos, tapes, books, computer CD Roms. Reader Rabbit – mainly for consolidation – buckets of posting boxes, the Magna Doodle, crayons, coloured pencils, we always get dough and puzzles. It's like a school at my home – untidy because it's like a crèche, a preschool. I have a whole storeroom of stuff, I buy everything at garage sales – Ravensberger. Early on when she showed an interest or readiness I presented materials, for example tape stories – decided to foster. I'm conscious of physical development – in the conservatory are scooters, moonhoppers, balls. I'm teaching her chest passes, she climbs trees ... Art, craft, plaster of paris, making things, baking, helping feed the animals. Her father took them fishing recently. (I: Parent interview, p. 8).

Home resources for Isla

(Edited from list provided by family and attached to letter sent to researcher).

Books

- Choice, has had a gradation of difficulty
- First kind of books were plastic ones eg. *The Zoo*, also cloth books, just pictures – lots of discussion and lots of sounds made
- Board books – individual nursery rhymes and songs – singing and pointing to words. Illustrations by Tracey Moroney. *My Counting House*. Board Books about colours and shapes. Match the rhyme books – lots of fun matching pictures and rhymes. *The Rhyme Mix Bears -Up Book* – Egan Publishers, Melbourne.
- Flap Books with large print – plenty of emphasis on what we might find under the flap. *Mr Little's Noisy Car* etc. All *Spot* books, and videos to go with them where possible after reading them. Rod Campbell's flap books.
- Rhyming books with large print – 'Bright and Early Books for Beginning Readers'. 'Beginner Books' – 'I Can Read It All By Myself'. Dr Seuss Books. As many rhyming/beginner/Dr Seuss books as I could lay my hands on – lots!! Got a pile from garage sales. From an early age she loved rhyme and quickly would point to matching rhymes and state them.
- 'Read-Together' books, 'Story Box' Level 1 Emergent (I picked up 7 of them).
- All Lynley Dodd *Hairy MacLary* books and others of Lynley Dodd – She loves them and read them herself, plus videos at home and from the library.
- 'Ladybird Read it Yourself' Level 2-4 – what I could find cheap.
- 'The Parent and Child Programme' – preschool books ages 2-4 (have about half a dozen).
- Eric Carle books – loved those
- 'Usborne' story books, for example *Farmyard Tales* – reads these in depth
- Suzanne gretz – She just adores these and reads them over and over.
- Beatrix Potter – F Warner & Co – and tapes where possible, but read first, and afterwards tape and book if interested. Only occasionally interested now, though interested initially.
- *Postman Pat* and videos and tapes and books.
- Loves *Winnie the Pooh* – has good selection of the videos.
- Smaller collection of non-fiction. Building up NZ Nature where possible.
- Enjoying maze and puzzle books now, especially 'Usborne Young Puzzle Books' Susannah Leigh; *Puzzle Town, Puzzle Ocean, Puzzle Island, Puzzle Farm*. She just loves them and shares and reads them in depth over and over.

- The rest are mixtures of genre – picture books still, but with smaller print – just beginning to read some chapter books to her occasionally, but still mainly picture books. Recently read Dahl's *The Enormous Crocodile* – she insisted on having it read in one sitting and straightaway asked for it to be read again.
 - A collection of story tapes (many with the book to read along to while listening)
- It is important to know your books and authors, to make right choices – there is a lot of rubbish out there.*

Alphabet Materials

- Magnetic letters, upper and lower case
- Videos
- 'Ravensberger' ABC game – a fun introduction to the alphabet
- 'Waddington's' teaching puzzle A-Z and 1-10
- Wooden puzzle alphabet lower case – on a board
- Wooden alphabet worm puzzle
- Picture dictionaries
- Floor Puzzle – large – alphabet lower case – a Christmas present

Puzzles

- Alphabet puzzles
- Lots of other kinds of easy to difficult wooden and card – she is not really a puzzle person – does a few sometimes.

Maths

- Memory games – *Spot* and 'Waddington's'
- *Snakes and Ladders*
- Several toy clocks
- Nesting boxes
- 'Early Learning Centres' – *Find the Shapes* – ages 3-8.
- Maths video – *Get Ready for Maths, The Wonder of Numbers*
- 'Galt toys' *Clever Shapes* – shape puzzles.
- *Brainy Blocks* - colour co-ordinating and shape recognition game 4-6 years
- Magnetic pictures – magnet puzzle creating pictures with shapes
- 'Ravensberger' *Dominoes* matching numeral and picture game
- Box of button and beads for sorting and threading – make long cotton reel snakes and run around home.
- *Connect 4* – she know what horizontal, vertical and diagonal mean and uses these words frequently when playing. Will beat you with a diagonal if you're not watching and she's playing properly. She's really delighted when that happens.
- *Scrabble for Juniors*. Plays 5 years and up with ease and joy. Just beginning 8 years and up - with support. Can quickly make 3 letter words – surprises you. We only play this occasionally – need to do it more often.
- Marble game – construct a run for the marbles
- Computer CD Roms – already mentioned, but with choose ones with reading/language actions from the library, for example computer CD Roms 6-8 years. Loves *Reader Rabbit* 4-6 years.

Music

- Have a box of musical instruments – collected and made.
- Have music sessions at home, especially on wet days – lots of tapes, children's songs, movement etc.

Puppets

Large puppets and finger puppets. We do plays together at times.

Dough

She and I make it. It is always in the fridge. I have collected her a large collection of materials – cutters, rolling pins, moulds, patterns for shapes, tubes, also we make animals and talk about balls, shape, sausages and rolling circles, cylinders, squares, triangles, bits to stick into it – foliage and flowers, straws, shells etc.

Collage

Chocolate papers, coloured paper, glue, her own special scissors, paint, glitter etc.
Construction – loves Sellotape, beginning to do a little of this.

Creative materials

- Collected a big box – coloured pipe cleaners, balls, eyes etc.
- ‘Playtime’ *Construct-o-Straw*
- Buckets with *Lego*.
- Buckets with *Duplo* – add bits and pieces as we find them.
- Bags of animals – small plastic ones. She constructs farms and makes up stories, talks to the animals etc.
- Dinosaur collection with lots of dinosaur books

Writing materials

- Variety on hand always
- Thin and thick crayons
- Coloured pencils, felt tips, lead pencils, ball points
- Triangular pencils for beginner – staed+ler triangle triplus
- Variety of coloured paper and card
- *Magna-Doodle* board – great incentive to draw and write

Water Play

Collection of items for sink and bath – funnels, tubes, containers, jugs etc.

Sandpit

Collection of sand toys - we also go to the beach.

Imaginative Play

- Dolls house and furniture – one at Nana’s and one at home
- Variety of dolls including *Barbie* and soft toys, cradles, beds, bedding and clothes
- *Sylvanian Bakery*
- *Winnie the Pooh* house
- Dolls pram, pushchair
- Likes playing with garage and cars – races with her brother

Playstation

Plays with her brother on the Playstation

Dress-up Boxes

- At home and at Nana’s
- Collected from garage sales
- She’ll rush straight to this even before thinking of lunch
- Fairy wings, tutus, wands, headdresses, sequinned caps, purses, ballet shoes
- Pirate outfits, Superman, Batman, Buzz Lightyear, masks, hats

Outdoor excursions

- On the walk to Kindy, daily talk about nature – evergreens, deciduous trees, and why. Rainbow in the sky and how it was made, names of plants and flowers, smell roses, lilac, mention different colours of the same species, talk about wisteria and other climbers, native trees and their names.
- Look for grubs and insects on the pavement, for example found Puriri or Ghost Moth – trodden on – took it carefully to kindy, put it into a container, and she showed it to everyone.
- Greet everyone cheerfully on the way
- Go to the beach – similar procedure
- Go to the park – lots of physical activity
- Look around the backyard for insects, spiders new plant growth
- Grandad's fish catch – always touched, named and talked about in detail – she loves to eat fish. She goes fishing for spotties.
- Has Rock Pool excursions with her Mum who loves Science and Nature and talks in detail about finds and habits.

Gross motor tasks

- She is excellent – a climber to the top of a tree if you'd let her.
- Cleans down the sink bench with gusto, and does it well.
- Can tidy up well and quickly when she's inclined
- Loves cleaning with spray – glass and bathroom

Finer Muscle Development and Associated Tasks

- She gets very frustrated with her inability to do the tasks quickly and 'erupts' – is improving now with encouragement and rewards.
- Beginning to colour in and cut out by herself
- Happy to hold triangular pencil more now
- Loves sticking things with sellotape and does it well using a dispenser independently
- Can dress herself and does up and undoes buttons and zips well

APPENDIX Y: DESCRIPTION OF AN EARLY CHILDHOOD CENTRE

Extract from field notes from a visit to one early childhood centre:

A bright, vibrant environment. Lots of colour. Well displayed areas. Children's own work as well as educational posters on the walls. Educational material on the walls included letters, maori and science posters. There was a display of dolls from around the world. Photos were on display. Children's painted self-portraits were on the wall with blue and white aprons added for the girls, cut from the same material that the girls' real aprons are made from.

Bright coloured walls. Family play area and blocks.

Everything very neat, tidy, orderly and expensive.

Coloured bottles on the wall – labeled with names like indigo, jade.

The Art area had evidently been utilised that day – lots of cut up scraps of paper about. The activity chart had 3 buzzy bees on it: reading, cutting and computer. No children's names had bees velcroed up yet.

On tables were sheets of paper that the children had been doing printing (handwriting alphabet letters) on.

