EFFECTIVE STRATEGIES FOR TEACHING

YOUNG CHILDREN CRITICAL THINKING

THROUGH PICTURE BOOK READING:

A CASE STUDY IN THE NEW ZEALAND CONTEXT

BY

Shu Yen Law

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ABSTRACT

Critical thinking is a life skill that empowers people to participate fully in everyday life and to make reasonable judgments and inferences on important issues. Critical thinking is not viewed as an individual, fixed entity, but is instead malleable and influenced by the social and cultural contexts of the learner. This study explored the strategies used by primary school teachers to promote young children's critical thinking, and their rationales for those strategies. It also investigated children's responses to picture book reading, including their opinions and behaviours. A qualitative case study approach was used to investigate the development of critical thinking skills during picture book reading lessons with junior primary children. Four teachers in two schools and 22 children aged five to six years participated in this study. Methods included observations of picture book reading lessons, individual interviews with teachers, paired interviews with children, and collection of documents. These methods were used to collect data about teaching strategies, and to obtain an insider's view of the teachers and children. Data were analysed within and across reading lessons using a content analysis approach, and the children's responses were analysed against the *Four Resources Model* (Luke & Freebody, 1999a) framework.

Six teaching strategies were found to be effective in promoting critical thinking in children. These strategies reflected a sociocultural approach to teaching and learning. The children's reading of picture books showed that the majority of these young children engaged in the practices of breaking the code of texts, of participating in the meanings of texts, and of using texts functionally, with a minority engaged in the practice of critically analysing and transforming texts. This study suggests that to foster critical thinking there is a need for teaching practices to focus on nurturing children to be text analysts and encouraging children to be active questioners.

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Chapter 1

Introduction

As children nowadays are inundated with information from a wide range of texts, it is imperative for them to think critically about the messages in order to take charge of their own lives and become active and responsible citizens. This study investigated how critical thinking is fostered by New Zealand teachers in junior primary classrooms, specifically during picture book reading. It examined how critical thinking is addressed in *The New Zealand Curriculum* (Ministry of Education, 2007) and its supporting documents (Ministry of Education, 2003, 2009, 2010), and how it was implemented in practice in four junior primary classrooms. This study takes the perspective that cognition is constructed through sociocultural practices. It explored the teaching and learning of critical thinking skills in real life classroom settings as individuals participate in social practices, and are influenced by culturally relevant activities. Teachers' and children's own voice were also sought for a better understanding of the development of critical thinking in the New Zealand context.

There are various interpretations of 'literacy', and not all of them emphasise critical thinking. *The Literacy Dictionary* (Harris & Hodges, 1995) records that, in 1951, literacy was defined as "the ability of a person who can with understanding both read and write a short, simple statement on his everyday life" (p. 140). Literacy is merely having "the basic or primary levels of reading and writing" (p. 140), which suggests an emphasis on decoding rather than on developing thinking. Reading in English focuses on the ability to decode, which is to break the codes of letters; writing focuses on the ability to encode, which is to spell out the words or symbols of the written and spoken language. However, as important as these technical skills are for reading and writing, they are not sufficient to prepare learners to meet the demands of life in the new century. Freire (1983) wrote that reading "is not exhausted merely by decoding the written word or written language, but rather anticipated by and extending into the knowledge of the world" (p. 5). This is where critical thinking is reflected in literacy acquisition, to enable people to be purposeful and reflective while learning a text. Patricia Edwards – the

president of the International Reading Association[1] (IRA) – highlights that in the new millennium, "learning a new language is challenging in itself, but having to also learn new ways of thinking and communicating adds a whole other dimension to becoming literate" (Edwards, 2010, p. 22).

UNESCO (United Nations Educational, Scientific and Cultural Organization) argues that literacy is "a human right, a tool of personal empowerment, and a means for social and human development" (2011, para. 4). The empowering nature of literacy is emphasised in *The New Zealand Curriculum* (Ministry of Education, 2007) for primary and secondary schools, which states that literacy "gives students access to the understanding, knowledge, and skills they need to participate fully in the social, cultural, political, and economic life of New Zealand and the wider world" (p. 18). Thinking critically when reading and writing is therefore imperative as it empowers people to be active citizens who are able to make good and rationale judgments about issues in life.

Rationale for the investigation

One of the reasons for conducting this study was that critical thinking is strongly emphasised and demanded in the New Zealand curriculum. Critical thinking is an integral part of the English learning area in the New Zealand curriculum (Ministry of Education, 2003, 2007, 2009, 2010) and has become a required component of learning for even the youngest learners in compulsory schooling since the publication of *English in the New Zealand Curriculum* (Ministry of Education, 1994). *The New Zealand Curriculum* (Ministry of Education, 2007) continues to emphasise the value of critical thinking across different areas of learning, such as literacy, mathematics, and science. In the area of literacy, New Zealand took part in two international reading assessments which have requirements for children to think critically. These were PIRLS (Progress in International Reading Literacy Study) (Chamberlain, 2008) and PISA (Programme for International Student Assessment) (OECD, 2010), which will be described further in the literature review chapter.

According to Higgins, Baumfield, Lin, Moseley, Butterworth, Downey, Gregson, Oberski, Rockett, and Thacker (2004), much research on thinking skills has been

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[1] The International Reading Association (2011) is an organisation which supports worldwide literacy development and aims to improve reading instruction.

conducted on children aged 11-14 years. However, little research has been done on the thinking skills of young children aged five to six years. Higgins et al. (2004) also state that the majority of the research reports were quantitative data focusing on pupil's attainment. Little qualitative research has been done to investigate teachers' and children's attitudes and beliefs on critical thinking. As stressed by McGuinness (1999),

> there is a need to be explicit about what we mean by better forms of thinking and of educating directly for thinking. If students are to become better thinkers, to learn meaningfully, to think flexibly and to make reasoned judgments, then they must be taught explicitly how to do it. (para. 10)

This present study hence used a qualitative approach to investigate how teachers are promoting young children's critical thinking, and to obtain an insider's view of the teaching and learning of critical thinking skills.

There are differing views on whether children are capable of thinking critically at a young age. These views stem from two main contrasting theories – developmental and sociocultural – which are described in the literature review. Robbins (2005) notes that most research has been based on the developmental point of view, which tends to examine children's thinking as if it were separate from the social activities and the cultural experiences in which the children participate. This study takes a sociocultural perspective to investigate children's cognitive development as they participate in collaborative activities in their respective environments. Robbins (2005) argues that "the consideration of the important factors of contexts, collaboration, and cultural tools can present a far more dynamic and rich view of young children's thinking" (p. 140), describing how children are "thinking, learning, developing, and changing through participation in the sociocultural activities of their communities" (p. 147).

Literacy in the New Zealand context

A sociocultural perspective of learning is embraced in the early childhood educational settings. The New Zealand early childhood education curriculum, *Te Whāriki* (Ministry of Education, 1996), highlights the "critical role of socially and culturally mediated learning and of reciprocal and responsive relationships for children with people, places, and things" (p. 9). This perspective is continued in *The New Zealand Curriculum*

(Ministry of Education, 2007) which argues that "learning is inseparable from its social and cultural context" (p. 34).

In the literacy learning area, primary teachers are required to draw on children's cultural backgrounds and encourage them to think critically about how texts can influence their own and others' lives. The *Literacy Learning Progressio*ns (LLP) (Ministry of Education, 2010) states that "students need to do more than just read and write" (p. 3). Literacy acquisition involves the process of making meaning, of using a variety of sources to express ideas, and of identifying the purpose and effects of texts (Ministry of Education, 2007). This understanding was adapted from the *Four Resources Model* developed by Freebody and Luke (1990) who argue that a fully literate person should be able to perform basic reading and writing, and also be able to analyse the underlying meanings in texts, and to understand how texts influence people.

The need to analyse and critique texts is implicit in the framework for literacy acquisition stated in the primary teachers' literacy handbook, *Effective Literacy Practice: (ELP) in Years 1 to 4* (Ministry of Education, 2003), which describes "learning the code, making meaning, and thinking critically" (p. 25). This framework of literacy shows that literacy consists of more than skills for decoding and encoding. The supporting documents for the curriculum include the *Reading and Writing Standards for Years 1-8* (Ministry of Education, 2009), the *LLP* (Ministry of Education, 2010), and the *ELP: in Years 1 to 4* (Ministry of Education, 2003), provide guidelines for teaching English literacy in primary schools and stress critical thinking at all levels of primary schooling. For instance, *The New Zealand Curriculum* (Ministry of Education, 2007) and the *Reading and Writing Standards for Years 1-8* (Ministry of Education, 2009) require that students at level one will begin to use sources of information and strategies to identify or interpret ideas. The *LLP* (Ministry of Education, 2010) gives more features which represent the development of critical thinking. These include asking questions, making inferences, monitoring one's own reading, as well as using a variety of comprehension strategies to interpret and respond to texts.

Research objective

The objective of this study was to identify effective teaching strategies used by primary teachers to stimulate critical thinking in young children during picture book reading lessons. It sought to obtain an insider's view by investigating teachers' rationales and explanations for using particular strategies. This study also aimed to explore children's critical thinking by eliciting their interpretations of the stories in picture books.

Overview of the chapters

This thesis is divided into six chapters. Chapter 1 has provided the rationale for this investigation, the context of this study, and an outline of the research objective.

Chapter 2 reviews the literature which presents theoretical ideas associated with sociocultural theory in relation to literacy acquisition. It reviews the concept of critical thinking within the New Zealand context and describes the curriculum demands for teaching and learning. It also introduces the *Four Resources Model* (Luke & Freebody, 1999a) which is used to analyse children's responses. This chapter describes some approaches in literature that claim to promote critical thinking skills, and explains the function of picture books as teaching tools.

Chapter 3 explains the methodology used in this qualitative case study. It describes how participants were selected, and how data were collected and analysed in relation to answering the research questions. This chapter also addresses the ethical considerations and limitations of the study.

Chapter 4 presents and discusses the findings about the teachers and their teaching strategies used to stimulate children's critical thinking during picture book reading lessons. This chapter is divided into three sections: section one describes the setting of the participating schools and classrooms; section two illustrates the teachers' beliefs and descriptions of the picture books they selected; and section three presents the effective teaching strategies used by the teachers, and discusses these strategies in relation to the literature reviewed in Chapter 2.

Chapter 5 presents and discusses the findings about the children's responses and behaviours to picture book reading. These responses were analysed against the *Four*

Resources Model (Luke & Freebody, 1999a) and were discussed in relation to the literature and to the strategies used by the teachers.

Chapter 6 summarises the findings of the effective teaching strategies and children's responses to picture book reading. It offers implications for future teaching practices and acknowledges the strengths and limitation of this study. This chapter concludes by offering recommendations for further research.

Chapter 2

Literature review with consideration of theoretical basis

Introduction

As Chapter 1 outlined, this study explored young children's critical thinking skills from a sociocultural perspective. Chapter 2 builds on this by exploring how critical thinking is perceived in the wider literature and in the New Zealand curriculum documents for teachers. It also provides contrasting perspectives on young children's critical thinking from developmental and sociocultural theory. The key idea argued in this thesis is that the cognitive development of a learner is viewed not as an individual entity, but as situated within the learner's social and cultural environment. This chapter discusses strategies that claim to promote critical thinking, and describes the *Four Resources Model* (Luke & Freebody, 1999a) framework that was used to analyse children's responses in this study. The value of picture books as a teaching tool to promote critical thinking is also explained.

Critical thinking

Critical thinking includes a wide range of competencies which are important for adults' and children's lifelong learning. Wilson (2000) argues that in this fast changing society, thinking needs to be more adaptable and sensitive to divergent perspectives to take people through making reasonable judgments on moral, social, or political issues. This ability to think critically empowers people to be active citizens in society (Freire, 1973, 1993).

Back in the early 20th century, John Dewey (1909) defined critical thinking as a "careful, reflective thinking" in which individuals actively reflect on issues that are relevant to their own lives (cited in Fisher, 2001, p. 2). Ennis (1987) explains critical thinking as a "reasonable and reflective thinking that is focused upon deciding what to believe or do" (p.18). It is a thinking that is "purposeful, reasoned, and goal-directed" and which increases the likelihood of a desired outcome (Halpern, 1996, p. 31). These definitions suggest that critical thinkers have transferable skills which allow knowledge learnt from one context to be applied in another context to achieve a certain purpose.

As society's complexity increases, critical thinking is needed to help people identify assumptions and analyse claims made by others (Ennis, 1987; Paul, 1993). They must overcome the egocentric tendency to reason their own and others' assumptions and values (Paul & Elder, 2002). In addition, critical thinkers must provide evidence to support their own opinions and claims (Nosich, 2009; Popper, 1992, Willingham, 2008).

A resource that is commonly used by teachers is Bloom's taxonomy (1956), which includes six essential skills in the cognitive domain; knowledge, comprehension, application, analysis, synthesis, and evaluation. These skills range from the simpler levels to the more complex levels. The last three skills are viewed as critical thinking skills which enable individuals to infer, reason, and make judgments. In Bloom's (1956) view, these higher levels of skills are dependent upon the attainment of the lower levels of skills.

However, De Bono (1994) and Downs (2008) argue that too much emphasis has been placed in logical or judgmental thinking. This overlooks the value of creative thinking which encourages conjectures and new possibilities. Creative thinking is an essential component of critical thinking, helping produce solutions to problems. As argued by Paul and Elder (2006), critical and creative thinking are inextricably linked, as "critical thinking without creativity reduces to mere skepticism and negativity, and creativity without critical thought reduces to mere novelty" (p. 35).

Critical thinkers should also have certain dispositions or behaviours. Walsh, Murphy, Dunbar, and the EYEcep Team (in press) stress that critical thinkers should be persistent, confident, and open to multiple ideas. It involves being active in questioning and thinking about issues in life which are of interest to them (Fisher, 2003; Lipman, 1980).

Critical literacy is a type of critical thinking which involves looking beyond the literal meaning of texts. It involves analysing and evaluating the ideologies behind texts and author's intent (Luke & Freebody, 1999a). According to Knobel and Healy (1998), critical literacy is the "critique of the relationships among language, power, social groups, and social practices" (p. 127). The authors believe that language is not neutral

and that even reading a picture book to children may be considered as a culturally and politically complex practice.

From the review above, it appears that the practice of critical literacy involves the processes of analysing, evaluating, and critiquing the meanings or ideologies in texts. These processes require critical thinking habits such as being reflective, purposeful, creative, and open-minded.

Developmental and sociocultural perspectives on critical thinking

It seems from the previous descriptions that critical thinking involves sophisticated thought processes and, because of this, there is discussion of whether young children, around the age of five to seven years, have the ability to engage in critical thinking. The developmental and sociocultural theories have strongly differing perspectives on the ability of young children to exercise critical thinking.

The developmental theory is typified by the works of Jean Piaget. It generally holds the perspective that development comes before learning (Piaget, 1964). According to this theory, children at the approximate age of two to seven are egocentric and cannot perform logical thinking. They are characterised by interest in one's self and one's own capabilities (Bruning, Schraw, & Ronning, 1999). With this interpretation, critical thinking is not possible at this age as young children's minds engage in what is concrete and tangible (Riggs & Peterson, 2000); critical thinking is too abstract.

This theory stresses that learning should occur within a developmentally appropriate age, which means a child should only be taught at a level that matches his or her current competence. Instructions that neglect the mental function readiness of the learner are useless (Bruning et al., 1999). This interpretation may lead to the inference that it is not worthwhile for educators to invest in the development of critical thinking in young children.

The developmental view of learning often overlooks the interpersonal relationships and cultural aspects in life which can impact on what and how a child learns. It holds the belief that cognition is an individual construction, and that the development of an

individual can be a representative for the population (Robbins, 2005). Gee (1996) criticises this view which seems to suggest that

> if readers know the language, can decode writing, and have the requisite background 'facts'...they can construct the 'right' interpretation in their heads. And this 'right' interpretation is roughly the same for all competent readers. (p. 39)

A strictly developmental view may overlook the influences of sociocultural aspects towards individual differences in literacy development.

Few studies had included interpersonal relationships and sociocultural issues as part of how children think or learn (Robbins, 2005). These scientific studies hold a common belief that there is a universal development in children, which overlooks the differences of each child as they participate in different activities, within different contexts, and with different people and artefacts. Conversely, a sociocultural interpretation claims that learning is not an individual construction, but is built from participation with people in social activities and is mediated by a particular tool (Gokhale, 1995; Hatano & Wertsch, 2001; Lave, 2009; Rogoff, 1990; Vygotsky, 1978; Wenger, 2009).

The sociocultural perspective of learning has drawn on the work of Lev Vygotsky, an influential Russian psychologist who lived from 1896 to 1934. Vygotsky (1978) argued that learning occurs within the sociocultural contexts of the learner which are constructed by the learner through interactions with people and their environment. He stated that "learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (p. 35). This view reflects Bruner's (1973) hypothesis that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development" (p. 413), a statement that opposes the developmental perspective to teaching and learning.

Vygotsky (1978) coined the term of the Zone of Proximal Development (ZPD) to explain how children learn. It is "the distance between the actual developmental level as determined by interdependent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more

capable peers" (p. 86). This explains how humans have a social nature that gives them the potential to achieve more with collaboration from others or under another person's support. The ZPD is closely linked to the concept of scaffolding where the 'expert other', who can be an adult or a peer, provides support to enable the learning child to do something beyond his or her independent capability (Bee & Boyd, 2004).

The importance of the context for learning is stressed by Rogoff (1990, 2003), who argues that to understand individual cognitive development, we must consider the societal and cultural aspects that take place within a child's learning processes. Similarly, Lave (2009) and Wenger (2009) argue that people create meanings through their active participation with the world. These sociocultural views of learning imply that the development of children's critical thinking must be viewed as a process influenced by the interaction between the learner and the context, culture, mediating artefacts, and identities of the community in which he or she participates. This view that thinking is built from the external forces is consistent with Gardner's (2009) argument that intelligence is not a stable quality, but rather a constructive quality that is malleable by social and cultural factors.

The significance of human interaction on one's development is closely linked to the idea of collaborative learning, which includes the participation of adults and children (Bandura, 1986; Gokhale, 1995; Rogoff, 1990). Both children and adults engage in collaborative learning, with the adult responsible for providing appropriate support for the children's learning. Gokhale (1995) demonstrates the benefit of collaborative learning on cognitive development by examining the effectiveness of individual and collaborative learning on critical thinking skills, defined as analysis, synthesis, and evaluation of concepts. When 48 undergraduates were assigned academic tasks to be done individually or collaboratively, it was found that the students who participated in the collaborative learning out-performed in critical thinking skills the students who studied individually.

The positive relationship between social interaction and thinking is also shown in a study by Toppings and Bryce (2004), who focused on the effect of paired reading on children's thinking skills development. A group of children aged 11 years were paired with a group of younger children aged seven years. Paired reading sessions occurred

over 10 weeks, and both fiction and non-fiction books were used. It was revealed that the younger children gained significant improvement in their thinking skills over this period.

A sociocultural interpretation also suggests that during social interactions, people bring in their own identities and views of the world, which are influenced by the context they live in and by the cultural tools that they interact with (Vygotsky, 1978). Therefore, cognition is mediated by the cultural tools and artefacts such as texts and language. Gee (2001) supports the significant influence of cultural aspects in people's cognitive development by arguing that culture tells people "what counts as 'normal' and 'natural' and what counts as 'inappropriate' and 'deviant'" (p. 37). In other words, people's identities, thoughts, actions, and behaviours are basically shaped by the culture. González, Moll, and Amanti (2005) introduce the concept of 'funds of knowledge' with the premise that "people are competent, they have knowledge, and their life experiences have given them that knowledge" (p. ix-x). This implies that individuals bring their own background knowledge and experiences into learning.

This section clarified how the understanding of the development of critical thinking shifted from a static, in-born skill into a malleable skill that can be influenced by the external factors such as social interaction and mediating artefacts. This study believed on the latter and this belief is supported by the understanding of critical thinking held by *The New Zealand Curriculum* (Ministry of Education, 2007) as explained in the next section.

The New Zealand context: curriculum requirements for critical thinking

One of the key competencies to be developed in primary and secondary students is thinking, which is divided into creative, critical, and metacognitive processes (Ministry of Education, 2007). This competence requires children to "reflect on their own learning, draw on personal knowledge and intuitions, ask questions, and challenge the basis of assumptions and perceptions" (p.12).

The emphasis on critical thinking in reading literacy is evident from two international reading assessments in which New Zealand took part. These are PIRLS (Chamberlain, 2008) and PISA (OECD, 2010). PIRLS studies the reading behaviours and attitudes of Year 5 (approximately 10 years old) students to literary (story) texts and information texts. The processes of reading comprehension include retrieving information, making inferences, interpreting ideas, and examining and evaluating content, language, and textual elements. PISA examines 15 year-olds' capabilities in reading literacy, mathematics literacy, and science literacy. It also concentrates on general and cross-curricular competencies such as problem solving, and on functional skills such as communication skills. These foci in PIRLS and PISA reflect the demand for critical thinking in reading for both the primary and secondary sectors.

The literacy handbook for primary teachers, *ELP: in Years 1 to 4* (Ministry of Education, 2003) includes a framework for literacy as "learning the code, making meaning, and thinking critically" (p. 25). This framework was based on the *Four Resources Model* of Luke and Freebody (1999a) who argue that learners need to engage in four important reading practices in order to participate successfully in this fast-changing world. These four practices require learners to break the code of texts, participate in the meanings of texts, use texts functionally, and critically analyse and transform texts. This model was underpinned by Freire's (1973) theory that people's beliefs and worldviews are communicated through literacy and language, and that texts are never neutral as they carry the individual ideologies and assumptions of the people who constructed them.

The four practices stated in Luke and Freebody's (1999a) model are not hierarchical in importance or developmentally based. The model claims to provide a balanced and structured practice to engage learners in a full range of literacy roles, each of which is considered equally important. Its strength lies in "examining whether the range of practices emphasised in one's reading program are indeed covering and integrating a broad repertoire of textual practices that are required in new economies and cultures" (p. 6). According to Freebody (1992), the components of reading success include "the interpretation of text, the ability to use appropriate inferences to connect parts of the text and fill in the gaps of meaning" (p. 52). This explanation of literacy places less emphasis on the learning of technical skills for decoding, and is consistent with the sociocultural

perspective of learning (Vygotsky, 1978), which asks for educators to move beyond the cognitive versions of literacy development to a socially constructed practice (Ludwig, 2006).

The New Zealand Curriculum (Ministry of Education, 2007) recognises that students have their own identities, cultures, and languages that they bring to their classroom learning. This view is consistent with the sociocultural interpretation of learning in which culture, language, and social practices shape the learning and thinking processes (Walsh, 2006). Teachers, therefore, are expected to be aware of these aspects of students, and build on students' own skills and experiences in their teaching practice. As teaching is malleable according to social institutions and cultural interests (Luke & Freebody, 1999b), teachers are not encouraged to use one fixed method in teaching, but instead teach based on students' existing lives and knowledge.

Table 1: Four practices of the literacy learner

Break the code of texts	Recognising and using the fundamental features and architecture of texts including: alphabet, sounds in words, spelling, conventions and patterns of sentence structure and text.
Participate in the meanings of texts	Understanding the meaningful written, visual and spoken texts from within the meaning systems of particular cultures, institutions, families, communities, nation-states and so forth.
Use text functionally	Traversing the social relations around texts; knowing about and acting on the different cultural and social functions that various texts perform both inside and outside school and knowing that these functions shape the way texts are structured, their tone, their degree of formality and their sequence of components.
Critically analyse and transform texts	Understanding and acting on the knowledge that texts are not neutral, that they represent particular views and silence other points of view, influence people's ideas; and that their designs and discourses can be critiqued and redesigned, in novel and hybrid ways.

(Luke & Freebody, 1999a, p. 7)

The *Four Resources Model* is applicable to the learning of various forms of texts, including the written, visual, and spoken. Table 1 presents the four practices of a literacy learner according to Luke and Freebody (1999a), and it illustrates how the practices are linked to a sociocultural view of learning.

Much discussion about learning to read has focused on the mechanical ability to master phonemes. However, the *ELP: in Years 1 to 4* (Ministry of Education, 2003) argues that "learning the code is crucial. But it has no point unless it is the means to the essential end – reading and writing with meaning and purpose" (p. 24). This statement embraces all the aspects from the *Four Resources Model* framework presented in Table 1. This framework indicates that reading should involve a simultaneous process of breaking the code, making meaning, and thinking critically, hence suggesting that investigations into reading should look at the development of all the processes and how they integrate, rather than focus on one.

Although the code breaking process is not considered a critical thinking process, it is an essential foundation to support children in developing their critical thinking. This is consistent with Bloom's taxonomy of learning, in which the higher level of learning is dependent on the attainment of the knowledge and skills at the lower level of learning (Anderson, Krathwohl, & Bloom, 2001). Similarly, Pressley and Block (2002) argue that children need to be proficient at decoding before they can perform at a higher level of learning and thinking, such as analysing texts. Freebody (1992) also highlights that this basic level of reading is important as incompetency in decoding during the early years will result in disengagement with texts in the later years.

However, critical thinking may not necessarily depend on highly accurate decoding. This is evident from the findings in Rickford's (1999) study on how adolescent children responded to higher-order questions during interpretive reading and critical evaluation tasks. The children demonstrated the ability to produce high quality responses to interpretive and evaluative questions, even though they had not yet mastered responses to literal questions. As the difficulty of texts increased, the children found it harder to identify the literal meanings correctly, whereas it was easier for them to make arguments or guesses to open-ended questions by drawing on their own knowledge and experiences.

A similar result was found in the New Zealand NEMP (National Education Monitoring Project) assessments conducted by Knight (2006), who investigated the responses of 30 Year 4 students and 30 Year 8 students on critical thinking tasks. The indicators for critical thinking in that project were the presence of multiple ideas, comparisons between objects selected and those not selected, and innovative criteria for comparisons. Out of the four different assessment areas, it was found that the children demonstrated better quality of critical thinking in art and listening and viewing tasks, followed by technology task, and were weakest in science tasks. The critical thinking criteria sought in the listening and viewing task involved students' ability to identify attractive features from posters and signs, and then comment and justify why they were attractive or not. Knight (2006) inferred that the students seemed to find it easier to think critically in tasks that required their opinions rather than tasks that required factual knowledge.

The *Four Resources Model* (Luke & Freebody, 1999a) also requires learners to participate in making meanings about texts. This involves a reading process that incorporates readers' background knowledge and experiences into interpreting texts (Walsh, 2006; Rosenblatt, 1978). This is parallel to the reader-response theory in which the interpretation of texts is dependent upon the forces that readers bring into the process of reading (Rosenblatt, 1978). Meanings are created when readers bring in their own interpretation of the world. The *ELP: in Years 1 to 4* (Ministry of Education, 2003) acknowledges the importance of the life experiences of the reader by emphasising that teachers should make connections to children's prior knowledge and experiences as they read and write. These explanations of learning emphasise the active roles taken by children as they read texts.

Social influences play a role in helping children to use or create texts purposefully, to understand their roles as readers. As knowledge is constructed through social interactions, a successful reader hence is one who participates in those social activities, such as classroom discussion (Freebody, 1992). Through social experiences, children learn how to take turns, and how to question or answer. As social experiences shape one's learning and thinking (Bandura, 1986; Lave, 2009; Vygotsky, 1978; Wenger, 2009), education should not be about filling up an empty pail, but rather about inventing and reinventing knowledge through engaging in dialogues with people (Freire, 1993).

From this participation, children learn to apply their knowledge to new situations as they interact with different people in different contexts.

It is essential that children be taught the skills to analyse the hidden meanings behind texts. Luke and Freebody (1999a) give attention to the concept of 'ideology' as part of critical thinking. They stress that the practice of critically analysing and transforming texts helps learners to examine the values and ideologies which the characters and/or plot convey, or to identify the silences within, and exclusions from, the text. This practice enables readers to have the awareness that texts are not neutral, but are constructed in a particular way to influence readers' perceptions. This practice is emphasised in the statement for the English learning area in *The New Zealand Curriculum* (Ministry of Education, 2007), which describes how "students learn to deconstruct and critically interrogate texts in order to understand the power of language to enrich and shape their own and others' lives" (p. 18). It is also required in the *LLP* (Ministry of Education, 2010) that, after two years at school, children should "think critically about aspects such as the theme or ideas" (p. 13). Although Freire (1983) was describing adult learners, the skill of analysing and critiquing texts is introduced to beginning readers in New Zealand classrooms as an essential component of learning literacy.

This practice also seems to require children to be reflective and to be able to understand different views and assumptions. It is consistent with the requirement from *The New Zealand Curriculum* (Ministry of Education, 2007) that children at Year 1 should be able to recognise that texts are shaped for different purposes and audiences. Furthermore, as 'a collection of facts and opinions does not always make sense by itself', it is fundamental that the underlying logic and assumptions are examined (McKenzie, 1997, para. 10). This seems to ask children to think about the authors' perspectives conveying particular messages. According to Piaget's pre-operational stage of cognitive development, young children would assume that other people have similar experiences or perspectives as them (McInerny & McInerny, 2002). Based on this interpretation, children should be unable to understand authors' perspectives.

However, a study conducted by Mitchell and Riggs (2000) found that children between the ages of three and five, were developing the ability to understand that people have

different thoughts and feelings from their own. A group of young children aged three to five years were situated to watch a character named Maxi, who placed a piece of chocolate and left for school. The chocolate was taken away without Maxi's knowledge. When the children were asked where Maxi would think the chocolate might be, they generally gave the correct answer based on Maxi's point of view, suggesting that young children are capable of thinking from another person's point of view. This implies that young children thinking about the author's perspective is possible.

To date, there is little systematic research on critical literacy in New Zealand primary schools. The most relevant study was conducted by Sandretto and the Critical Literacy Research Team (2006), who investigated effective critical literacy strategies that are able to be integrated within guided reading lessons. The classrooms which participated in this study consisted of children aged six to ten years. Reading lessons were videotaped, and interviews were done with the participating teachers and children. The findings revealed four strategies that were effective in fostering critical literacy during guided reading lessons: first, direct modelling of metalanguage; second, the use of critical questioning; third, the use of appropriate texts; and fourth, restructuring guided reading lessons by implementing critical literacy practices at the second time of reading the similar text. The overall finding of this study revealed improvement in children's critical literacy when critical literacy strategies were incorporated into the guided reading lessons.

Hamer (2010) reviewed the early childhood curriculum, *Te Whāriki* (Ministry of Education, 1996), and discussed whether critical literacy should be a part of early childhood education in New Zealand. The author found some implicit concept of critical literacy in the curriculum and concluded that it is feasible for the inclusion of critical literacy in the early childhood education. If it is possible to incorporate critical literacy in early childhood education, it should be possible as well to incorporate in primary education.

Two other studies of critical literacy have been conducted on New Zealand secondary schools. These two studies highlighted the idea of encouraging children to think critically about texts in literacy learning in order to be successful readers. The first was conducted by McDonald and Thornley (2009), who investigated students' use of

disciplinary knowledge. This study revealed that students who were academically successful were the ones who demonstrated a critical orientation of texts. They focused more on "how knowledge is produced within the content areas and how they used these understandings to their advantage in school" (p. 62). The second study was carried out by Locke and Cleary (2011), who examined the effect of the critical literacy approach to literary study in multicultural classrooms. Students were guided to develop an awareness that texts are constructed in a particular way to position readers to take up certain meanings. From this guidance, students were found to have increased awareness of the manipulative power of texts and achieved in high-stakes assessments.

Following the above review, this study interprets critical thinking as a cognitive process that is largely constructed through participation in social and culturally relevant activities. The definition that is used of critical thinking are as those skills to analyse, evaluate, and challenge claims rationally, to give reasons for their opinions, and to be able to overcome egocentrism by being open-minded to multiple interpretations. Critical thinkers are able to question real life situations and to transfer learning from one context to another. In the context of literacy learning, critical thinking should involve an analysis of the textual ideologies and discourses, discussion of production and interpretation, and examination of text language and visuals.

Approaches and strategies to foster critical thinking

Critical thinking skills can be improved by explicit instructions (Abbott & Wilks, 2005; Gardner, 2009; Halpern, 1996, 2001; Higgins et al., 2004; McGregor, 2007; McGuinness, 1999). An example that illustrates the necessity of providing explicit instructions is a study by Ryan and Anstey (2003) on a small group of Year 6 children's reading of picture books. When the children's responses were analysed against the *Four Resources Model* (Freebody & Luke, 1990), it was found that the children clearly showed the ability to make meaning from texts, but had low engagement in decoding, using, and analysing the texts. However, with specific questions that prompted critical thinking, the children were able to show increased responses towards text analysing.

The results from a small scale experiment conducted by De Bono (1991) also supported the idea that critical thinking can be improved and should be explicitly taught. This experiment focused on the thinking skills of a group of children aged 10-11 years. It

was found that children who were trained in the Cognitive Research Trust (CoRT) programme generated more ideas during discussions than those who did not undergo the training.

There is an increasing number of ways to promote critical thinking as the demand for critical thinking grows. For example, the *Reading and Writing Standards* (Ministry of Education, 2009) recommend that teachers stimulate children's thinking by prompting them for more explanations and justifications. Falihi and Wason-Ellam (2009) proposed strategies such as deconstructing visual texts, engaging in dialogical processes, and creatively expressing through visual representations, to help students achieve critical consciousness during interpretation of visual texts. These strategies help students to be critical viewers with the ability to analyse visual messages and examine the impact of those messages according to their own sociocultural backgrounds.

Paul and Elder (2002) argue that one of the oldest strategies to foster critical thinking is the Socratic pedagogy. This pedagogy emphasises the role of educators in asking provocative questions during teaching in order to enhance their learners' logical reasoning ability through engaging in critical discussions. However, a modern interpretation of critical thinking might suggest that students need to be active questioners and thinkers on issues in life that are relevant to them. Fisher (2003) and Lipman (1980) extended the Socratic pedagogy by suggesting that educators should encourage children to be curious and ask questions which are of interest to them.

An approach introduced by Lipman (1980) is the 'Philosophy for Children', which aims to foster skills such as reasoning, questioning, comparing, and relating ideas to real life examples. The author emphasises the importance of developing reasoning skills, particularly in moral or ethical issues. De Bono (1992) introduces six Thinking Hats of different colours which symbolise the six distinct states of the brain that work towards different thinking processes. These distinct states include developing goals, collecting opinions, generating ideas and possible solutions, developing information, developing criticisms, and identifying benefits. These hats are claimed by De Bono to help learners achieve critical, constructive, and productive thinking.

A strategy to help children read texts in a meaningful and critical way is the *Three Level Guide* created by Herber in 1978, and modified by Morris and Stewart-Dore in 1984 (Literacy Aotearoa, n.d.). This guide consists of three levels, namely the literal, interpretive (inferential), and evaluative (applied) level. The literal level requires readers to read the texts and work out the information. The interpretive level requires readers to infer the meanings presented in texts by linking to the literal information or to their own existing knowledge and experiences. The evaluative level requires readers to combine the literal and interpretive information, to analyse different views in texts. It also asks for readers to relate information to other contexts.

Picture books as a teaching tool to promote critical thinking

Within a sociocultural perspective, mediating artefacts act as a medium for individuals to construct and convey meanings (Vygotsky, 1978). The artefacts of a literacy programme include language and various types of texts. Authors convey their meanings through picture books and people convey their views through spoken and written language.

Sipe (1998) explains that words and pictures in picture books have a combined strength in conveying meanings, as the words are processed in a sequential manner while the pictures in a simultaneous manner. The Caldecott Award—a prestigious American children's book award – describes a picture book as "one that essentially provides the child with a visual experience. A picture book has a collective unity of story-line, theme, or concept, developed through the series of pictures of which the book is compromised" (cited in Sharpe, 2005, p. 1). This suggests that picture books are a suitable teaching tool to foster young children's critical thinking skills as their written and visual features are not only entertaining to the children but also carry particular meanings and concepts which are worth analysing.

For young children who are still learning to decode words, verbal and visual experiences primarily embed their reading (Nikolajeva, 2003). Similarly, Considine, Haley, and Lacy (1994) argue that children naturally learn by 'reading' the visual features such as by looking for colours, movements, and symbols, to comprehend what the author is trying to say. This means that it is necessary for them to talk and think critically about the visual features of picture books as they are believed to contain

particular meanings as well. Robert McCloskey – an illustrator and winner of the Caldecott Medal in 1958 – argues that "it is important for everyone to really see and evaluate pictures and really to see and evaluate his surroundings….to develop a visual sense…..to 'read' pictures…..to know when someone is fooling us with pictures" (McCloskey, 1965, cited in Considine et al., 1994, p. 44). This statement suggests that readers should evaluate visual texts to avoid being passively manipulated by the implicit messages.

Visual texts have the potential to stimulate complex mental processing because they provide perceptions and expressions, such as mood and colour, which words alone cannot provide (Brill, Kim, & Branch, 2007; Evans, 1998; Newton, 1992; Unsworth & Wheeler, 2002). They provide elements that viewers can make sense of and interpret to develop complex skills and understanding (Falihi & Wason-Ellam, 2009). Dowhower (1997) states that the reading of visual texts leads to more opportunities for inference making because the meanings are not explicitly stated. These ideas describe visual texts in picture books as a useful tool to stimulate critical thinking skills.

Young children are not only able to make meaning through visual texts, but also to think critically about the meanings presented in them. Walsh (2003) compared the reading behaviour of English as second-language children (L2) with that of English as first-language children (L1). These children were from the first and second year of schooling. Their oral responses to two different texts were examined and it was found that both L1 and L2 children were able to link to their own experiences, draw inferences and make new information based on interpreting images in picture books.

Simpson (2005) examined a group of primary children's responses to the visual text of picture books. These responses were reflected on the *Four Resources Model* (Freebody & Luke, 1990) and it was found that the most common viewing practice was text participant, where children used their own interpretations to construct meaning about the texts. Moreover, although little attention was paid to engaging children in critical viewing, a minority of the children demonstrated emerging ability to consider visual images from a critical perspective, such as thinking about why an image has been created in a particular way.

Picture book reading provides a context to literacy learning where children engage in dialogue or interaction with adults or peers when reading the story. Questioning, dialogue, and story are central to the process of developing young children's thinking skills (Taggart, Ridley, Rudd, & Benefield, 2005). It also gives enjoyment to reading when children can bring in their prior experiences to question the features and messages in stories. Lipman (1980) stresses that group discussions which focus on a single text can develop children's verbal reasoning, and promote a 'community of enquiry' where children's learning is guided by their engagement in critical reflections over issues that are relevant to their lives.

Picture books also allow children to "visualise events and objects which are removed in time and place, to enable them to think out of their own contexts. They extend children's imagination as they are led to picture other possible worlds" (Smith & Elley, 1997, p. 39). They also act as a mirror to reflect our own and others' lives (Creighton, 1997). All these allow the readers an opportunity to develop skills in higher order thinking.

While picture books are an appropriate tool for young children's learning, selection of good quality books is essential. The careful selection of texts for critical thinking is emphasised by O'Brien (1998) in her work of promoting critical literacy in a Year 2 classroom. The author read aloud a popular book titled 'A Lady in Smurfland' and invited children to discuss the social and cultural meanings in texts. In this study, O'Brien aimed at sharing and exchanging roles with the children as text authorities, cultural experts, inquirers, and meaning makers by organising small-group discussions and whole-class conversations. She found these Year 2 children able to use their own cultural knowledge to critically analyse the text and the worldviews it promotes. O'Brien stresses that selecting relevant texts for learning and allowing classroom talks make possible for children to perform critical literacy regardless of their literacy accomplishment.

Given that teaching practices have a huge impact on children's learning, the ways in which picture books are explored can largely determine the extent and quality of critical thinking stimulated in children.

Conclusion

This chapter has reviewed the literature about the concept of critical thinking, and how the developmental and sociocultural perspectives differ in their views of critical thinking development in young children. From the analysis of *The New Zealand Curriculum* and its supporting documents, there is a dual emphasis on young children acquiring critical thinking in the literacy learning area and on a sociocultural perspective to teaching and learning. However, there is little information about how young children at the age of five to six years learn to think critically within their classroom interactive activities. More research is also needed to investigate teachers' perspectives on the teaching of critical thinking skills and to explore children's own interpretations of stories to understand more about their thinking.

The *Four Resources Model* (Luke & Freebody, 1999a) practices to be a successful reader has been described, and this framework was used in this study to analyse the children's responses to picture book reading. This chapter has also described the literature that reveals the advantages of implementing explicit instructions to promote critical thinking and explained how picture books are suitable teaching tools for young children. This chapter has outlined why a sociocultural perspective is appropriate to explore strategies used by teachers to promote critical thinking in classroom picture book reading activities, and to seek an insider view from teachers and children. The methodology used to conduct this study is presented in the following chapter.

Chapter 3
Methodology

Introduction

This chapter describes the research paradigm that underpinned this study and the research methods that guided how data were collected and analysed. Specific details of the methodology are explained and justified in relation to the research questions below:

1. What strategies do teachers use to stimulate critical thinking in young children during picture book reading?
2. What are the teachers' rationales for using those strategies?
3. What responses to picture book reading do young children demonstrate?

This chapter also explains the trustworthiness of the investigation procedures, as well as the ethical issues which are relevant to this study. Limitations of this study are described at the end of the chapter.

Research paradigm

This study used the social-constructivist research paradigm to investigate classroom practices and children's critical thinking. Social-constructivists believe that social reality is subjective (Denscombe, 2010) and that people construct meanings by interpreting experiences in life based on historical and social perspectives (Creswell, 2009). In other words, social, historical, and cultural factors influence a person's view of the world. Hence, it is inappropriate to interpret a person's thoughts without considering the influence of surrounding factors.

These underlying assumptions imply that the practice, experiences, and perspectives can differ among teachers and between contexts. No two teachers are alike. Therefore, this study investigated teachers' practice by taking into consideration their individual explanations of their experiences and perspectives. The exploration of children's responses was also based on this perspective, where their sociocultural aspects were considered during data collection and analysis. In regard to this, a social-constructivist approach is appropriate to gain insights into the teaching and development of critical

thinking skills by taking into consideration the diverse funds of knowledge brought in by the teacher and the children (González, 2005).

The subsequent sections of this chapter present the research design and methodology that facilitated the collection and analysis of the qualitative data.

Research design

A qualitative approach

In adopting a sociocultural framework, a qualitative approach was used. A qualitative approach is generally defined as an in-depth exploration and understanding of a phenomenon by gaining insights into the meanings that people give to the world (Creswell, 2009; Denscombe, 2010). It strives to use multiple sources of evidence to gain a contextualised understanding of the subject (Yin, 2011; Patton, 2002). This approach was suitable to achieve the purposes of this study. Firstly, it helped to explain the meanings that teachers attached to their teaching strategies. Secondly, it helped to explore children's critical thinking by allowing them to elucidate their thoughts. Thirdly, it permitted a "thick description" of the patterns of behaviour by teachers and children (Merriam, 1998, p. 38).

The multiple data collection method stressed in the qualitative approach was useful to achieve the research's purposes of understanding people's behaviour and constructions of meanings. In this study, the data collection methods involved observations, interviews, and documentation. Observations were conducted to identify exemplars of effective teaching strategies and critical thinking responses, while interviews were used to seek teachers' and children's own voice as a way of triangulating the data obtained from observations. Relevant documents, such as lesson plans, were collected to provide further information. According to Patton (2002) and Yin (2003), multiple data collection helps to overcome the deficiencies of another method because one single method cannot solve the problem of rival explanations of a study. For instance, interviews helped to acquire information which observations cannot provide, such as feelings and thoughts.

Multiple data collection is also a form of triangulation, which helps to "check the consistency of findings generated by different data collection methods" (Patton, 2002, p.

556). For instance, the interpretation of observation data alone may be influenced by the researcher's own perspectives. In order to reduce the researcher bias, interviews were conducted as a way of checking the consistency of interpretation between the researcher and the participants. This method helped the researcher to explore new insights from the teachers and children, as well as ensuring the credibility of the findings.

Teachers' practices were explored qualitatively through observation and interview methods. These methods are essential as they offer deep and detailed descriptions of situations, events, people, interactions, and behaviours (Merriam, 1988). According to Denzin and Lincoln (2000), qualitative researchers "study things in their natural settings, attempting to make sense of, or to interpret phenomena in terms of the meanings people bring to them" (p. 3). In this study, the researcher managed to explore the teachers' points of view, their motives, their constructions of reality, and their perceptions and experiences. A qualitative approach to investigating teacher practice is supported by Halpern (2001), where she mentions that the proper way of determining the effectiveness of teaching instructions is to "identify the educational experience that results in improved critical thinking, and analyse in detail the nature of instruction" (p. 276). This approach values individual differences and seeks to obtain people's own explanation and justification of their practice. Moreover, as there is no one particular way of teaching, the qualitative approach helped to explore the unknown and provide new insights into this area of study.

Observations and interviews also enabled the researcher to understand the nature and quality of children's critical thinking. Open-ended questions were used in interviews, and these questions were less structured and were aimed at probing children's explanations and justifications for what they said. Knight (2006) argues that children's explanations and justifications from the open-ended questions can provide reliable evidence to understand their critical thinking. He reasoned his opinion with his finding that children showed significantly stronger responses of critical thinking when asked opinion-based questions rather than factual-based questions. These open-ended questions empower children by allowing them to voice their own views. In other words, the types of views expressed by children can reflect their thoughts, allowing the researcher to investigate what is in their minds. Similarly, Walsh et al. (in press) stress that children's thinking can only be assumed from their own words and behaviour while

completing a task. Their thinking behaviours include making suggestions, asking questions, disagreeing, and building on each other's ideas (Venville, 2002).

A case study design

A case study research design was used to achieve the research objectives. A case study involves an "intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (Merriam, 1988, p. 21). It provides the example of "real people in real situations", which enables the investigation of the "complex dynamic and unfolding interactions of events, human relationships and other factors in a unique instance" (Cohen, Manion, & Morrison, 2000, p. 181). In other words, it is viewed as a "specific, unique, and bounded system" (Stake, 2000, p. 436), in which the unanticipated variables were treated as unique features worth further interpretation and analysis. It allows one to gain an in-depth understanding of the complexity of a context in order to discover the essences of a research area (Punch, 2005).

Case studies can be descriptive, interpretive, or evaluative (Merriam, 1988). This study is descriptive and interpretive. It is descriptive in that the case was treated as an individual entity, in which the teaching, learning, and interactions within that case are described. According to Patton (2002), "well-constructed case studies are holistic and context sensitive"; therefore this study included a description of the context of the case as a basis for interpreting and understanding its emerging meanings. It is interpretive in a way that the researcher's intent was "to make sense of the meanings others have about the world, rather than starting with a theory" (Creswell, 2009, p. 8). The researcher looked through the eyes of the participants by interviewing them and then gave meaning to the data obtained. This required the researcher to be aware of how her background knowledge and understanding shaped the way that the data are interpreted. The researcher's perspective while conducting this study is provided at the end of this chapter. As data are interpreted by the researcher, it is important that the participants' meanings are being portrayed accurately to increase credibility of the research (Johnson & Christensen, 2008). The interpretive validity for this study is explained under the trustworthiness section of this chapter.

The setting

Two schools were invited to participate based on the recommendation of the researcher's supervisor, who has some connections with and knowledge of the teachers in the schools. Consent was sought from the principals of each school (Appendix A: Letter of explanation for principals; Appendix B: Consent form for principals). These schools had teachers who are promoting critical thinking skills, which is a necessary criterion to achieve the purpose of this study in seeking effective teaching strategies. The schools were also selected based on the convenience of school location to the researcher in order to allow the researcher ready access for data gathering as there was a need for the researcher to visit each school a number of times.

	Observation	*Interview children*
School A		
Classroom 1	Reading Lesson 1	2 children
	Reading Lesson 2	4 children
Classroom 2	Reading Lesson 3	2 children
	Reading Lesson 4	2 children
School B		
Classroom 3	Reading Lesson 5	4 children
	Reading Lesson 6	4 children
Classroom 4	Reading Lesson 7	2 children
	Reading Lesson 8	2 children

Note: Teachers were interviewed after each reading lesson

Figure 1: Overview of schools and participants selection

Participant selection

Four teachers (two from each school) were invited to be observed and interviewed during their picture book reading lessons. Each teacher was observed twice in two separate reading lessons, which totalled eight observations of reading lessons. From each reading lesson, two to four children were invited to be interviewed in pairs. Figure 1 provides an overview of the selection of schools and participants, and a detailed explanation is given below.

Selection of teachers

Through purposive sampling, four junior primary female teachers in the two schools were invited to participate in this study. Purposive sampling allows the researcher to specify the characteristics of the population of interest and locate individuals with those characteristics (Johnson & Christensen, 2008). The criteria for teacher selection were: first, recognised as good teachers of early literacy and having a good understanding of teaching critical thinking skills; and second, at least three months experience working with the children in their respective classes. The first criterion was needed in order to achieve the research aim of seeking effective teaching strategies for critical thinking skills. The second criterion was to ensure that children were more likely to be familiar with the teacher and her teaching style. This familiarity provides a more established teacher-child interaction, which enabled the researcher to obtain better data concerning the reading process. During the teacher selection process, the principals of each school were asked to recommend the teachers because many met the selection requirements of this study.

Selection of children for observations and interviews

This study only included classes that had consent from the parents of all the children. The selection of children for interviews did not include a purposive sampling of children from a specific ability or ethnic group. This was in order to get a broader representation of children as New Zealand classrooms typically consist of children from various backgrounds and ethnicities. The children were aged five to six years working on *The New Zealand Curriculum* (Ministry of Education, 2007) Level 1. These children were given consent by their parents to participate and the children's assents were sought before interviews commenced. The teachers selected the children to be interviewed

based on their knowledge of the children who were capable of expressing themselves clearly in English. This is so that the researcher could obtain clear and detailed data of their views. As shown in Figure 1, 22 children (10 boys and 12 girls) participated in the interviews. The outcome of this number was based on the consent by the children's parents and on the children's own willingness to participate.

Data collection

Trialling

Interview questions were trialled with an adult and with two children before the commencement of the main study. The main purpose of trialling was to test the research instruments, mainly the interview questions. Trialling helps to increase the likelihood of generating useful data for the main study (Teijlingen & Hundley, 2001). From the trialling, changes were made accordingly to the interview schedules. These included rephrasing some of the questions for added clarity, and adding more questions in the teachers' and children's interview schedules to gather further data. After making the amendments, the researcher proceeded to collecting data for the main study.

Table 2 shows the progression of data collection for each classroom and how research questions were answered by each of the methods. As explained earlier, these methods acted as a triangulation to ensure the internal validity of the research. The detailed explanations of each method are provided.

Classroom observations

Good data starts with having trust from the participants, and trust can be built from establishing good relationships. Therefore, before data collection commenced, the researcher helped out in some learning activities in the participating classrooms. That helped to build rapport with the children and teachers, so that they were familiar with the researcher and felt more comfortable during observations and interviews.

Each teacher was observed in two separate reading lessons. The main foci of the observations were on teachers' delivery of reading lessons, particularly the strategies used to promote critical thinking, and on children's responses to the reading lessons (see Appendix K: Observation schedule for reading lessons). This helped to answer research question 1 which seeks effective teaching strategies to promoting critical thinking. The

observations also made it possible for the researcher to explore the interactions among children, teachers, and their surrounding factors (Robbins, 2005).

Table 2: Progression of data collection and its relationship with the research questions

Research question	Method	Data collection instruments	Process
What strategies do teachers use to stimulate critical thinking in young children during picture book reading?	Classroom observation of reading lessons	Appendix K: Observation schedule for reading lessons Audio-recorder	Reading lessons observed and audio-recorded Fieldnotes taken Observation data transcribed
	Documentation	Lesson plan Photos of picture books	Lesson plans were collected Photos of picture books taken
What are teachers' rationales for those strategies?	Individual interview with teachers	Appendix L: Semi-structured stimulated recall interview schedule for teachers Written transcript of reading lessons Audio-recorder	Semi-structured interview took place as soon as possible after reading lessons at participants' convenience Audio-recorded Interview data transcribed and returned to participants for checking Amendments made accordingly
What responses to picture book reading do young children demonstrate?	Paired-interview with children (Also from classroom observation of reading lessons)	Appendix M: Semi-structured interview schedule for children Audio-recorder	Semi-structured paired-interview took place with children after each reading lesson Audio-recorded Oral summarisation conducted as a way of checking

Observation is useful in providing firsthand data and allows the researcher to understand the contexts of study and see typical behaviours among the participants (Patton, 2002; Creswell, 2008). Data describing the context of the reading lessons, such as the seating layout of the children, duration of reading lessons, and teaching tools used, were also noted. The teachers had the opportunity to decide which reading lessons were

to be observed, which picture books were to be used, and how they would deliver the lessons. All reading lessons were observed and audio taped. Notes on general information, teaching strategies, children's responses, researcher's reflections and hunches were taken. These notes were supplementary to the data obtained from audio taping.

Documentation

Documentation involves the collection of documents which are supplementary to the data collected from observations and interviews. Lesson plans were requested from the teacher. Photos of the picture books which are relevant for the analysis of teaching practices and children's interpretations were taken. These documents were obtained with teachers' permission. These documents provided additional evidence for the exploration of the teaching practice and the nature of children's critical thinking.

Semi-structured interviews

In a qualitative case study such as this, it is appropriate to obtain participants' own views by way of interviewing. In this study, interviews helped to fill in the gaps of observations and offered a deeper understanding of a case observed. As Patton (1980) notes, interviews aim at obtaining data that cannot be observed such as people's "feelings, thoughts and intentions" (p. 196). To suit the purpose of this study, semi-structured individual interviews were conducted to seek the rationales of teachers' practice as Pajares (1992) highlights that people's actions are determined by their beliefs. Semi-structured paired interviews were also conducted to seek children's interpretations of picture books. Semi-structured interviews were useful in this study by providing an outline of topics and issues to be covered, and the open-ended questions were specially designed to elicit participants' ideas and opinions about the topic. As argued by Patton (1980), the strength of semi-structured interviews is to increase the comprehensiveness of the data and ensure participants discuss important issues that need to be covered. Semi-structured interviews also provide opportunity for new ideas to emerge, which help create new knowledge of the case being studied (Merriam, 1998, p. 75).

- *Individual interviews with teachers*

Teachers are expected to be clear of their own instructional practices which suit the diverse needs of children from different backgrounds (Luke & Freebody, 1999b). Therefore after the observation and audio taping of each reading lesson, an individual interview with the teacher was conducted to gain an in-depth understanding of how and why she used particular strategies to promote critical thinking (see Appendix L: Semi-structured stimulated recall interview schedule for teachers). This helped to answer research question 2 which sought to obtain the teacher's rationale for their teaching strategies. These semi-structured interviews included discussion about the rationale for their choice of picture book and how their decisions fitted into the curriculum requirement of the school. The interview also discussed teachers' opinions about fostering critical thinking in young children, about the teaching instructions that they applied, and about the teaching processes.

A written transcript of the reading lesson was used as a basis for stimulated recall procedure with the teachers to obtain their reflection about classroom teaching and interaction. This stimulated recall procedure was conducted at the same time as the semi-structured interview. The use of this procedure is supported by Stough (2001), who explains that it is effective in obtaining teachers' theories of action — their rationale and interpretations of classroom practices. In this study, stimulated recall procedure was useful for the researcher to probe for more specific and detailed explanation of the teaching process. This procedure was conducted on the same day or the next after each reading lesson. The time was minimised between each teacher observation and stimulated recall interview so that the lesson was as fresh as possible in each teacher's mind.

Next, the interview recording was transcribed by the researcher. This transcript was sent back to the teacher to ensure that the researcher had an accurate record of what the participant had said. Each teacher participant had the opportunity to make amendments to the interview transcripts and the researcher had the opportunity to clarify unclear information. All the amended transcripts were sent back to the researcher and pseudonyms were used to replace the names of the schools, teachers, and children.

- *Paired interviews with children*

The best way to understand children's thinking skills is by using open-ended questions which ask for children's explanations and justifications (Knight, 2005; Lai, 2011; Norris, 1989). In this study, the researcher used open-ended questions to gather children's justifications and explanations of their opinions about the picture books that were used by their teachers (see Appendix M: Semi-structured interview schedule for children). Open-ended questions offer a high degree of flexibility and choice, hence eliciting children's own views about the picture books (Walsh et al., in press). After each reading lesson, children were interviewed in pairs about the picture book that had been used by the teacher. This was to answer research question 3 which aimed to seek the kinds of critical thinking responses that young children demonstrate.

The pairs of children were invited based on the consent given by their parents and also the children's own assent to participate in the interviews. The teachers in each classroom helped facilitate this pairing-up process by inviting two children at a time who were interested to share their interpretations of the picture books that were used.

The picture books were used during the children interview process to stimulate discussions with the children. Te One (2010) mentions that picture books can act as prompts during interviews to "support the conversational flow with children" (p. 77). The decision was made to interview children in pairs to investigate how children's thinking develops as they work in collaboration with others. The paired interview was intended to lessen the anxiety of the children during the interviews.

During the interview, the researcher repeated the key points back to the children as a way to confirm that they were true records. This repetition was important as checking written transcripts can be difficult for very young children who have limited ability to read words. The children also had the opportunity to add or change any information as they wished. The process included the children agreeing or disagreeing on the researcher's repetition of the key points, and if the children disagreed, they were requested to clarify their opinions. Once completed the confirmation with the children, pseudonyms were replaced with the names of the children.

Data analysis

This section focuses on the analysis of data gathered from the different methods. Data analysis is a crucial process in which the researcher makes sense of the data and forms the essences that answer the research questions (Denscombe, 1998). As qualitative research often explores the participants' perspective, data analysis involves making sense of the data in terms of participants' perceptions and definitions (Cohen, Manion, & Morrison, 2000). Data analysis also involves organising the data, interpreting the data, and identifying significant themes and patterns across different cases (Creswell, 2008; Patton, 1990). The analysis procedure that this study carried out is shown in Figure 2.

Data transcribing

↓

Data familiarising

(Noting ideas, reflections, insights)

Individual analysis of teacher interviews (Interpreting)	**Individual analysis of reading lessons** (Interpreting, Coding and categorising)	**Individual analysis of of children's responses** (Interpreting, Coding)

Research question 2: What are teachers' rationales for those strategies?

Cross-case analysis (Developing themes and finding patterns, Analysing against the literature)

Cross-case analysis (Analysing against the *Four Resources Model*)

Research question 3: What responses to picture book reading do young children demonstrate?

Research question 1: What strategies do teachers use to stimulate critical thinking in young children during picture book reading?

Figure 2: Progression of data analysis to answering research questions

Content analysis

As presented in Figure 2, this study used the content analysis procedure to answer research question 1. Content analysis involves conducting a "careful, detailed,

systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meanings" (Berg, 2009, p. 338). In other words, content analysis involves "identifying, coding, and categorising the primary patterns" in the data from observations and interviews (Patton, 1990, p. 381). It helps to determine significant information and core consistencies in each case (Patton, 2002). As this study involved the investigation of several classrooms, it was necessary to conduct content analysis in order to provide a basis for comparing the similarities and differences of meanings that arose from each classroom. This procedure was useful in finding the answers for research question 1 which explored effective teaching strategies. It also helped to answer research question 3 which sought to understand the kinds of response or interpretation that children have about picture books.

In qualitative research, data analysis typically begins simultaneously with the data collection process. Conducting analysis at the early stages allows emerging insights to help refine the subsequent data collection (Cohen, Manion, & Morrison, 2000; Merriam, 1998). The initial analysis also leads toward later stages of data collection in gaining deeper insights into patterns that seem to have appeared (Patton, 2002). Data transcribing and familiarising are the foundational steps for detailed data analysis. During the transcribing process, the researcher started to develop some personal thoughts about the data obtained. As qualitative research is generally dependent on the interpretation of the researcher (Creswell, 2008; Denscombe, 1998; Patton, 1990; Yin, 2011), it is important that the researcher understand the essences in data to provide an understanding of the entire research. Throughout the multiple readings of transcripts, the researcher noted personal insights, reflections, hunches, and ideas. These notes were taken into consideration for future analyses.

- *Individual case analysis*

An initial analysis was conducted by forming codes throughout the process of data collection. Coding refers to "data retention, in which the goal is to learn from the data, to keep revisiting it until you understand the patterns and explanations" (Richards, 2005, p. 86). It is useful in simplifying the complexity of raw data by developing manageable classifications (Patton, 2002). In this study, codes were made for the observation and interview data. Labels were used in the transcripts to code the characteristics of teaching strategies. The raw examples which represented the codes were also highlighted with

different colours. Then these codes were categorised by their similarities or coherence in meaning. For instance, giving reasons and explaining a point of view were categorised as justification. Each reading lesson was analysed according to the above procedure before proceeding to the cross-case analysis. For the aspect of teacher questionings, the frequency of occurrence was calculated (see Figure 3 in Chapter 4). The results from this calculation helped to show the pattern of each type of questions in the classroom settings.

The understanding of teaching strategies was supported by teachers' own explanations, and the effectiveness of teaching strategies was supported by children's responses during picture book reading. The teachers' beliefs were obtained and their rationale for their teaching practices were individually analysed in relation to the categories of teaching strategies found in each reading lesson. These analyses provided an understanding of teaching practices from the teachers' own perspectives.

- *Cross-case analysis*

When each individual reading lesson was analysed, a cross-case analysis began. In a cross-case analysis, the researcher explores the "processes and outcomes that occur across many cases, to understand how they are qualified by local conditions, and thus develop more sophisticated descriptions and more powerful explanations" (Miles & Huberman, 1994, p. 172). This method treats each reading lesson as an individual entity in which categories and patterns are formed within its own settings. This is why the individual reading lessons in this study were analysed separately before cross-case analysis proceeded. The categories from each reading lesson were grouped according to similarities. These similarities of categories from all the reading lessons formed themes which were represented as the common effective teaching strategies that emerged from the teaching practices described in Chapter 4.

Children's responses during the reading lessons and paired-interviews were analysed to find indicators of their critical thinking. The data were first interpreted and coded by the researcher. Then cross-case analysis was completed by analysing the data against the *Four Resources Model* (Luke & Freebody, 1999a). The overall children's responses while engaging in each of these practices were discussed in relation to the literature and the teaching strategies used by the teacher participants.

Presentation and discussion of findings

The findings are presented and discussed in two separate chapters: Chapter 4, the teachers and their teaching strategies; and Chapter 5, the children's responses and behaviours to picture book reading. Presenting the findings in this way allows a detailed explanation and discussion on each of the research questions. Chapter 4 answers research questions 1 and 2, while Chapter 5 answers research questions 1 and 3. This way of presenting and discussing the findings also provides a clearer understanding of the development of critical thinking skills from the separate perspectives of the teachers and children.

Trustworthiness

As small scale studies are not representative of the wider population, their strength lies in trustworthiness. Trustworthiness is an important aspect of qualitative research as it ensures the research is reliable. As this study included investigating people's views, there is a need to ensure that the report and its findings are as authentic as possible.

Qualitative research tends to be exploratory and open to all types of interpretation. Generally, the quality of qualitative research is judged based on "whether the study was conducted in a rigorous, systematic, and ethical manner, such that the results can be trusted" (Merriam, 2002, p. 24). As qualitative research mainly relies on the researcher's interpretation of the phenomenon or people being studied (Denscombe, 1998; Merriam, 2002), the potential threat is researcher bias. The procedures that have been taken in this study to reduce researcher bias are discussed below:

Triangulation. This study had made used of methods triangulation and data triangulation. Methods triangulation in this study involved different methods of collecting data, such as from observations, interviews, and collecting relevant documents. This method helps to overcome the weaknesses of a single method and helps to gain more evidence of the area being studied (Johnson & Christensen, 2008; Yin, 2003). Individual interviews with the teachers were conducted after classroom observations to seek their perceptions on their teaching practice. This procedure also enabled the researcher to confirm there was an accurate interpretation of what was observed. Data triangulation was conducted by observing and interviewing the

participants in different reading lessons at different times and settings. For instance, in this study, each classroom was observed twice in two different reading lessons with different picture books, and a total of four classrooms were invited to participate. Teachers and children were also interviewed at different times. According to Denscombe (2010), information gained from different settings and sources helps to increase the internal validity of the research.

Member-checking. This procedure involves the researcher verifying the researcher's own interpretations with the actual participants (Merriam, 2002). It helps to increase interpretive validity by "accurately portraying the meaning given by the participants to what is being studied" (Johnson & Christensen, 2008, p. 277). In this study, teacher participants were given their own transcripts to check for accuracy and to add or remove information as they wished. The researcher also orally summarised key points with the children during interviews as a way of member-checking, because children at that age have limited recognition of written words. In this way, both teachers' and children's views were confirmed to be true.

Thick, rich descriptions. In a qualitative study, it is necessary to provide detailed descriptions to allow readers to visualise the situation and make their own interpretations about the meanings (Creswell, 2008; Patton, 2002). This study provided a detailed description of the context and setting of the schools and classrooms, the teachers' beliefs about young children's critical thinking, the picture books' descriptions, and teachers' rationale for their choice of the books. This transparency allows readers to scrutinise the interpretations made by the researcher and helps increase the trustworthiness of the findings (Yin, 2011).

There is always the issue of whether research can be generalised into the wider population. This issue of external validity is referred to as transferability. Transferability concerns "the extent to which the findings of one study can be applied to other situations" (Merriam, 2002, p. 28). In response to this, readers are the ones who decide whether the findings are transferable to their own contexts. A detailed description of each case is essential in facilitating readers in determining the extent of transferability (Creswell & Miller, 2000; Merriam, 2002). To facilitate this, a thick, rich description of

each classroom is provided and the raw data reflecting effective teaching strategies and children's responses are illustrated during discussions.

Ethical considerations

Before data collection commenced, ethical considerations were approved by the Victoria University Faculty of Education Human Ethics Committee. The most fundamental issue that educational researchers must confront is the treatment of research participants in order to protect them from physical and psychological harm throughout the research process (Johnson & Christensen, 2008; Berg, 2009). Because this study involved adult and child participants, the rights of privacy and confidentiality of participants were given utmost concern.

Several practices were applied in this study to ensure it was done in an ethical manner. The names of the participants and the schools were kept confidential through the use of pseudonyms to assure that their professional integrity is not compromised by anything they contribute to the study. Teachers and parents were given a written letter of explanation about the research's purpose, procedures, protection of confidentiality, and management of data (Appendix C: Letter of explanation for primary teachers; Appendix E: Letter of explanation for parents and guardians of children who will be observed; Appendix G: Letter of explanation for parents and guardians of children who will be observed and interviewed). Their consent was sought before the study commenced (Appendix D: Consent form for primary teachers; Appendix F: Consent form for parents and guardians of children who will be observed; Appendix H: Consent form for parents and guardians of children who will be observed and interviewed). In the process of verifying transcripts, teachers could amend the information as they wished. All participants had the right to withdraw from the study at any time up until the end of data collection.

The child participants who took part in the interviews were given an oral explanation about the research's purpose because at the age of five or six, they had limited ability to understand written words (Appendix I: Letter of explanation for children who will be interviewed). The researcher explained the procedure in child-friendly language and children's assents were gained prior to beginning data collection (Appendix J: Consent form for children who will be interviewed). UNICEF (2002) in its guidance on children

participating in research, makes clear that "children's views must be considered and taken into account in all matters that affect them" (p. 1), and that "parental consent is not an adequate standard in light of the rights of the child" (p. 5). This statement emphasises the importance of gaining children's assent to participate in research. This is supported by Greig, Taylor, and MacKay (2007), who highlight that the child participant "should give assent in addition to the consent of the adult with parental responsibility" (p. 174).

Limitations

A qualitative approach also has some limitations. As this is a small scale study involving four junior primary classrooms, the findings cannot be generalised across the wider population. This study supports the idea that there is no single method of teaching and that learning occurs within the socio-cultural contexts of the learners, and hence emphasis was placed on the different instructional practices that work for different children in different ways.

It is claimed that through classroom observations, the researcher gets to obtain first-hand data (Patton, 2002). However, the Hawthorne effect may be unavoidable during observations. This effect refers to the modification of one's behaviour in response to knowing that he or she is being studied (Cook & King, 1968). Such modification normally leads to improvement in performance. In light of this effect, the children might have given enthusiastic responses during reading lessons upon knowing that they are being observed, which affected the researcher's understanding of children's 'real' behaviour during reading lessons. Teacher participants in this study were also presumed to teach in a way that most likely suit the purpose of this study, and therefore restricted the researcher's ability to look at their natural practices. However, this study did not anticipate looking into teachers' natural practice, but instead explored successful strategies. Therefore, purposeful or planned strategies were acceptable for the purpose of this study.

Researcher's perspective

It is important to acknowledge the researcher's perspective because meanings in qualitative research are to a certain extent influenced by the researcher's interpretation

of the world. It is through the researcher's lens that literature was included or ignored, that research was designed, and that data were analysed and interpreted. The researcher perceives that any subject under investigation can be interpreted in different ways. For this reason, the data in this particular study is interpreted with the understanding that critical thinking is a social practice. It is about reflecting on real life situations and critically discussing different perspectives, meanings, or ideologies in a rational way. This study did not seek to evaluate teachers' practices or to assess children's critical thinking ability. Its purpose was to describe and discuss findings that emerged from particular occasions at a particular point in time.

Chapter 4 Findings and discussion
The teachers and their teaching strategies

Introduction

The findings and discussion are presented in two interconnected chapters. Chapter 4 discusses the findings about the teachers and their teaching strategies in order to answer research questions 1 and 2. Chapter 5 discusses the children's responses and behaviour to picture book reading, which answer research questions 1 and 3. The data of this chapter were obtained from observations of reading lessons, semi-structured interviews with teachers, and collection of documents. This chapter is divided into the following three sections:

Section 1 briefly describes the context and setting of the two schools and the four classrooms which participated in this study.

Section 2 provides background information on the four participating teachers' beliefs about critical thinking and descriptions of the picture books used by the teachers. The information for this section was gained from the semi-structured interviews and collected documents.

Section 3 is the major part of this chapter that discusses the teaching strategies that emerged from this study. This section aims to answer research question 1 which explores the effective teaching strategies that promote critical thinking skills, and research question 2 which explores the teachers' rationale for their teaching strategies. The data were obtained from observations of reading lessons and semi-structured interviews with teachers.

Six major teaching strategies emerged from the data analysis. The three most significant strategies that helped to promote children's critical thinking are using open, thought-provoking questions, identifying and discussing key messages of the stories, making connections to children's prior knowledge and experiences. The other three strategies are organising peer discussion, modelling thinking aloud, and exploring words and

pictures. These strategies are discussed in relation to sociocultural theory and to the literature in Chapter 2.

Section 1: Context and setting of the schools and classrooms

The two participating schools were full primary, co-educational and located in the main urban area of a New Zealand city. According to the Education Counts directory of schools as at 4th of May 2011, School A and B had the status of Decile[2] 10 and Decile 8 respectively. This means that both schools had a high proportion of students from high socio-economic communities. School A had a total school roll of about 700 students, with three quarters being European/ Pākehā[3] students, and one quarter being Asian, Māori[4]/Pacific Island, and other ethnic group students. School B had a total school roll of about 400 students, with about half being European/ Pākehā students, one quarter being Māori/Pacific Island students, and another quarter being Asian and other ethnic group students.

The four classrooms selected for this study consisted of three Year 2 classes (six year-olds) and one Year 1 class (five year-olds). Walking into these four classrooms, one could see the walls filled with children's artwork, children's writing, and literacy and numeracy materials. Some children's drawings, handcrafts, and teaching tools were also hanging across the ceiling of the classrooms. There were book corners in every classroom which offered picture books, big books, fiction, and non-fiction books. As a whole, the children were immersed in a rich and colourful learning environment with attractive prints and pictures. These classrooms were similar to many junior primary classrooms in New Zealand.

Among the classroom items related to literacy and critical thinking were tags of different types of question, such as 'when', 'who', 'where', 'what', 'why', and 'how'. There were also flowcharts of the process of inquiry, from asking questions, to investigation, reflection, and finally creation. Self-made De Bono's Thinking Hats were

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[2] A decile indicates the extent to which a school draws its students from low socio-economic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities. Decile 10 schools are the 10% of schools with the lowest proportion of these students (Ministry of Education, 2011).
[3] A Māori language word for New Zealander of European descent as defined in the Maori dictionary (Reed, Calman, Sinclair, 2001).
[4] Indigenous people of Aotearoa/New Zealand as defined in the Maori dictionary (Reed, Calman, Sinclair, 2001).

hanging across the ceiling of one of the classrooms. In addition to those items, there were reading strategies charts, book language charts, and school values posters, all adding to the richness of the classroom learning environment.

It was observed across the four classrooms that a common seating layout for picture book reading lessons was the teachers seated in front of the class holding the picture books and children sitting randomly on the mat close to and facing the teachers. These picture books used by the teachers were typically of A4 size and consisted of colourful, interesting illustrations alongside the words. These reading lessons were mostly carried out after children's lunch time and the duration of the reading lessons observed were between 15 and 40 minutes.

Section 2: Teacher belief and book description

This section provides demographic information of the teachers and their classrooms, as well as the teachers' viewpoints about picture book reading and critical thinking. Section 2 also provides a description of each picture book and the teacher's rationale for their choice of books.

Anita

Anita was from School A and was in her second year of teaching Reading Recovery[5] in that school. She had 12 years of teaching experience including some overseas. Her class consisted of 23 children, with three quarters being European/Pākehā children and one quarter being Māori/ Pacific Island, Asian, and other ethnic groups. Amongst the children, three were ESL (English as Second Language) learners. The two reading lessons by Anita were 15 and 18 minutes long.

According to Anita, picture books were selected and read to the children whenever relevant to the topic she was working on for the whole school term. This topic was selected based on children's needs and interests. Anita explained that, "*it is their [children's] ideas that steer me as to where I'm going to take them next. This is so that they [children] are more responsible for their learning*". This reflects an Inquiry

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[5] An early literacy intervention designed to accelerate the reading and writing progress of students who have not made expected progress in learning to read and write after one year at school. It also identifies the small number of students who will need further, ongoing literacy support (Education Counts, 2011).

Approach to teaching which is used widely in New Zealand schools. This approach which is believed to be able to enhance critical thinking skills, encourages children to investigate worthy questions, issues, problems, and ideas (Wells, 2001). It is consistent with Lipman's (1980) idea of encouraging children to be critical thinkers who ask questions and have wonders about issues that are relevant to their lives.

The topic Anita was working on at the time of research was Environment Etiquette. This was a six-week learning topic under the Inquiry Approach in Anita's classroom where children learn about anything regarding the environment. According to Anita, this topic involved the children learning about sustainability such as the concepts of recycling, reusing, repairing, and reducing. The two picture books she selected added knowledge and acted as a reference for children's learning around that topic. She added that the use of these picture books helped to promote children's critical thinking by encouraging them to

...make a few more connections as everything wasn't spelt out in the text. They [children] had to use the text they were hearing and make their own observations from it... They had to kind of figure things out a little bit more.

Her definition of young children's critical thinking capability was to be able to think aloud, make inferences, and make connections. She stated that an emphasis was placed on teaching children to understand the message of the story. There was minimal expectation for children to understand the author's intention during reading lessons as she thought that children were rather egocentric at the age of six. Her view of children's development appears to concur with Piaget's pre-operational stage of cognitive development which claims that young children typically at the age of two to seven face challenges in distinguishing their own and other's perspectives (McInerny & McInerny, 2002).

Anita stressed that children's critical thinking derived from their participation in peer discussions. In her opinion, "*six year olds do not have experiences of having the ideas themselves*", so talking to peers can stimulate their construction of ideas. Her view complements the socio-constructivist theory, in which social exchange is recognised as the key source for cognitive development (Rogoff, 1990; Vygotsky, 1978).

Book description and teacher's rationale for the choice of books

The two picture books used by Anita were 'Dinosaurs and All That Rubbish' by Michael Foreman (1993), and 'Dump Bear' by Jenny Hessell (1991). The book descriptions are provided below followed by Anita's rationale for her choice of books.

'Dinosaurs and All That Rubbish'

by Michael Foreman (1993)

This book is about a man who builds a rocket in his factory so that he can fulfil his dreams of travelling to a distant star. In the process of building the rocket he pollutes the earth. When he reaches the star he is disappointed to find that nothing is there. He sees another star and flies to it and finds that it is paradise. He does not realise, however, that while he was away the dinosaurs awoke and transformed the earth back into a paradise. The dinosaurs remind the man that the earth is for all to share and for all to look after. Everyone then lives happily ever after sharing the paradise on earth.

Anita knew that the children were interested in making new things out of old things, and therefore drew on this interest and read a book about sustainability to the children. Her view emphasised the inclusion of reader's prior knowledge and experiences into learning, of which is stressed in the sociocultural theory (Vygotsky, 1978). According to her, this book fitted into the values of integrity and ecological sustainability which were being fostered by the school. These values are stated in *The New Zealand Curriculum* (Ministry of Education, 2007) which encourages responsibility and care for the environment. The teacher interview revealed that Anita expected the children to apply the information about sustainability conveyed in the book to their previous learning about the 4R concept which included reuse, repair, reduce, and recycle.

'Dump Bear'

by Jenny Hessell (1991)

When Dad goes off to the dump, he takes Emma, William and Toby the dog. Outside the dump Emma finds the most beautiful bear she has ever seen and William is determined to keep it. However Dad does not like the idea of taking something from the dump, and therefore forces Emma and William to leave the Dump Bear. But the bear was put back into the car out of nowhere and Dad finally gives up and allows his children to take the bear home with them. They cleaned and repaired the Dump Bear.

Anita's main reason for using this picture book was to encourage children to make connections to their prior experiences in order to interpret the new information in the book. Making connection to children's life experiences is strongly encouraged in the *ELP: in Years 1 to 4* handbook (Ministry of Education, 2003) and Anita's class had recently enjoyed an experience that provided a useful connection to the story from the book 'Dump Bear' (Hessell, 1991). A week before this picture book was read to children, the school had a Market Day event, in which Anita's class set up a charity shop. Children brought things from home such as toys and plants to sell to other children in school. This book added to their experiences of repairing and reusing items. Drawing on prior experiences and incorporating these into learning is also an aspect stressed in sociocultural theory (Vygotsky, 1978) and reader-response theory (Rosenblatt, 1978).

Sabina

Sabina was from School A and was in her third year of teaching. Her class consisted of 15 children with only three non-European/ Pākehā, amongst whom one had multiple disabilities. The reading lessons conducted by Sabina were both 40 minutes long. She mentioned that each week, about three picture books will be read to the children as she knew that the children loved picture books. She believed that reading picture books to children was a good way to foster their love of reading.

Picture book reading was also part of the Inquiry Approach in Sabina's class. Picture books were selected by Sabina for different intentions. These intentions included to stimulate thinking for other curriculum areas, to stimulate ideas for writing and discussions, as well as to add new knowledge for the children.

Sabina had a positive opinion about using picture books to promote critical thinking in children:

> *I think they [picture books] are an excellent tool. It certainly is a lovely way to stimulate thought about any topic.....I mean you could have it focus on the objective, or it can be quite free. You can take the talk whichever way the kids responded or whatever way they're interested, I suppose it can be as flexible as how you wanted, or how structured you wanted.*

She also added that:

> *...they [children] are making links between what they see and what they hear....it might be using the pictures to predict, and they may have to justify their thinking based on what they're seeing....looking at what they're seeing and relating it to their prior knowledge....the words also link with what we're going to do.*

Sabina defined young children's critical thinking by their abilities to go beyond answering direct recall questions, to give different types of answers, and to make comments relating to a question. She expected the children to justify their opinions by relating to prior knowledge and experiences, to make predictions, and to understand the theme of a story. Sabina also considered behaviour such as willingness to share ideas as part of the critical thinking process. Sabina highlighted that her crucial role of being a teacher was to ask relevant questions because she argued that the types of questions she asked would determine the extent of children's critical responses. Her emphasis on questioning is consistent with the Socratic pedagogy (Paul & Elder, 2002) which requires educators to ask thought-provoking questions to the learners.

Book description and teacher's rationale for the choice of book

The two picture books used by Sabina were 'The Mixed-Up Chameleon' by Eric Carle (1984), and 'The Crocodile's Coat' by Calvin Irons and Peter Shaw (2001). The book descriptions and Sabina's rationale for the choice of the books are given below.

'The Mixed-Up Chameleon'

by Eric Carle (1984)

Except for catching flies and changing colours occasionally, this chameleon doesn't find life very exciting. When a surprise visit to the zoo makes this wistful lizard realize it can change its shape and size as easily as its colour, it ends up wanting to be like all the animals in the zoo at once--with hilarious results. This chameleon finally wanted to change back to his usual self.

Sabina thought that the theme of this book – individuality – fits well into the Health learning area of the curriculum. This theme encourages children to develop understandings of maintaining personal identity and well-being (Ministry of Education,

2007). Sabina found many opportunities in this book to encourage children to make predictions based on their prior knowledge about the chameleon. This was because the children had been learning about the lifestyle of a chameleon during the past few days. According to her, this book also allowed the children to make meaning through what was happening in the pictures. There was also some new language and ideas for the children. Her objectives for this reading lesson were to get children linking to their prior knowledge, making predictions, and justifying their thinking.

'The Crocodile's Coat'

by Calvin Irons and Peter Shaw (2001)

This is a big book about a crocodile that was getting a coat made by the lizard tailors. This amusing story tells the procedures of coat making with rhythmic sentences. The colourful pictures also show how the lizards measured the crocodile's height, waist, and neck. Through reading this book, children learn to count and learn about simple mathematical concepts.

Sabina explained that they were doing their inquiry study of keeping warm. At the same time, they were covering the mathematics strand of measurements. This book helped the children to link the knowledge of measurements to an after-reading activity of children making their own clothing, such as scarves and mittens. It appears that critical thinking skills are needed to help children transfer their learning to real life tasks in order to achieve a desirable outcome (Halpern, 1996).

Gabriella

Gabriella was from School B and had seven years of teaching experience in junior primary classes. She had a total of 22 children in her class, of which three quarters were European/ Pākehā. There was one quarter of Asian and Maori/Pacific Island children, of whom four were ESL learners. Each of her reading lessons lasted about 25 minutes.

Gabriella personally loves to read books and had an interest in collecting children's picture books. She stated that she used picture books every day in classroom teaching as she viewed picture books as one of the most powerful tools to promote critical thinking. She explained that choosing a book that is new to the children is a good way to "*spark children's thinking*". She stressed that picture books are "*not at all limiting*" and also

"*push the boundaries*" to get children to learn about something that they might not have experienced. In addition to the enjoyment that children experienced through reading the rich and colourful picture books, they also developed all types of comprehension skills.

Gabriella explained that getting main ideas from books is considered as one of the ways to address critical thinking. In her picture book reading lessons, there were always discussions around identifying the main ideas and the author's purpose, visualising events that are out of the children's own contexts, and making inferences by drawing on their own prior knowledge and experiences. In her opinion, critical thinking was promoted whenever questions were asked of the children during discussions. This opinion is consistent with the Socratic pedagogy described by Paul and Elder (2002) which emphasises the significance of educators to ask provocative questions to learners in order to stimulate their thinking. Gabriella also explained that children would start by focusing on the pictures when they learn to read. During reading, children make links between what is happening with the pictures and what is happening with the written text. They also make links to their own lives and prior knowledge. Gabriella added that picture books supported children's reading and writing by exposing them to new words.

Gabriella viewed critical thinking as a skill which can be nurtured in children at a young age. In her view, children need to be taught the skills to critique texts at a very basic level at junior primary years. This will require a lot of support to prepare young children for independent learning in the later years. Her opinion reflects the idea of teaching in the zone of children's proximal development (Vygotsky, 1978). She stated that the basic levels of critical thinking that young children should be able to demonstrate include answering simple questions, making connections to their experiences, justifying their ideas with evidence from the story or pictures, and inferring. Thinking aloud was also stressed by Gabriella as an effective way to enhance the development of critical thinking, which is consistent with Vygotsky's (1987) work about thought and language in which he argued that children use external speech to mediate their thinking.

Book description and teacher's rationale for the choice of book
The two picture books used by Gabriella were 'Don't Panic Annika' by Juliet Clare Bell and Jennifer Morris (2011), and 'Zoobots' by Bruce Whatley and Ben Smith Whatley

(2010). The book descriptions and Gabriella's rationale for the choice of the books are provided below:

'Don't panic nnika'

by Juliet Clare Bell & Jennifer Morris (2011)

This book is about a little girl who panics at the smallest thing. The story shows how Annika panics and how she is taught by her family members how to deal with the panicky feeling. But something goes wrong one day where she gets locked inside the house with no one at home. Here, readers wonder whether she can remain calm and save the day. The answer is yes – with a little help from her beloved Moose.

This was a new book for the children. Gabriella chose this book because it had a lot of descriptive illustrations and an amusing storyline which suited the children's interests. Gabriella thought that its content about panicking was very much related to what young children would experience and therefore the children could relate the knowledge learnt from the book to their own lives. These messages from the book had provided a context for children to engage in purposeful thinking, where they thought about how the learning could be transferred into their real life encounters (Halpern, 1996).

'Zoobots'

by Bruce Whatley & Ben Smith Whatley (2010)

This book is about a zebra looking animal named Zebo and her friends, Hyde and TC, who live in Junk Jungle, which is a scrappy kind of place that is filled with strange looking things. Zebo likes her friends very much, but she longs for another friend - one who isn′t as big as her best friend Hyde and one who isn′t as small as her other best friend TC. One who is just right. But where can Zebo find such a new friend? This book depicts that making new friends can sometimes be hard to do, unless you live in Junk Jungle, which is filled with things that can be turned into other useful things - like a new friend.

The main reason Gabriella chose this book was because of its theme of making friends. She explained that making friends holds a big part in the six year-olds' lives, and therefore the theme of this book linked well to children's experiences. This approach of making relevant connections to children's own lives is consistent with the sociocultural

theory where children drew upon their existing knowledge and experiences in order to make sense of the new learning (Vygotsky, 1978).

Margaret

Margaret was from School B and had about nine years of teaching experience. She is currently in her fourth year of teaching in New Zealand. In addition to that, she had four years of teaching in Taiwan, and another four months in England. Her class consisted of 15 children, of whom half were European/ Pākehā, and another half were Asian, Māori/Pacific Island, and others. Amongst the children, one was an ESL learner. One of her reading lessons lasted for 13 minutes, while the other lasted for 27 minutes.

Margaret recognised the unique features that picture books naturally contain, such as key ideas and new words. She also believed that children can learn to make connections and transfer their learning to their own contexts. Her perception of picture books is shown in the statement below:

> *I believe it is an exposure to language and exposure to different kinds of stories, because every story has an idea or a message. I think reading to children is a great way to get those messages across.....they [children] could also be thinking about what they would do and how they would respond.*

In Margaret's opinion, junior primary children can only demonstrate critical thinking at a lower level. Similarly to the previous teachers, Margaret argued that children's critical thinking is largely dependent upon the questions that they were being asked by the teacher.

Margaret thought that five year-olds are very egocentric, so critical thinking for children is all about them and their own world, and how they feel about their world. For that reason, she stressed that her teaching would focus on comprehension skills by connecting to children's experiences as priority. Her view is aligned with Piaget's pre-operational theory (McInerny & McInerny, 2002) in that she indicated that it was difficult to promote critical thinking skills in young children due to the fact that these young children are developmentally unprepared to perform a high level of thinking.

Book description and teacher's rationale for the choice of book

The two picture books used by Margaret were 'Alfie and the Big Boys' by Shirley Hughes (2007), and 'How to Speak Moo' by Deborah Fajerman (2001). The book descriptions and Margaret's rationale for the choice of the books are provided below:

'Alfie and the Big Boys'

by Shirley Hughes (2007)

Alfie attends Parkside Nursery School, which is next door to the Big School. He and his friend Bernard admire the older boys, and Ian stands out as a leader on the playground. However, he never takes notice of the younger children. On Saturday at the garden shop, however, Ian begins to cry when his mum leaves him at the play area, and Alfie is there to soothe him. The boys ultimately become friendly. The realistic line and colour illustrations are filled with activity and expression; augmenting characterization, they combine with an understated text to provide a gentle commentary on daily life. A British setting provides the backdrop for this universal story of family, childhood experiences, friendship, and fears.

Margaret recognised that there were some children who were very new to the primary school, and thus this book was chosen to be read with the intention of making children relate to their previous experiences at the kindergarten and understand that there is a progression from kindergarten to primary school. The story illustrated activities that the children might experience themselves in life, such as painting, listening to picture book reading, and playing at the playground. Margaret's opinion represented well the sociocultural perspective to learning (Vygotsky, 1978) about making connections to the children's own world.

'How to Speak Moo'

by Deborah Fajerman (2001)

This highly original picture book, illustrated by the author, is a tongue-in-cheek "field guide" to the hidden complexity and shades of meaning in the word "moo", despite it being the only word in cow vocabulary. Written in rhyming couplets, we discover that "moo" sounds very different depending on the context and location. Much of the humour comes from details in the illustrations which often demonstrate the cows doing particularly human activities.

Margaret had been doing music with the children for the school term, so this book linked well with what the children were learning. It was also the '100th day in school' day when Margaret read this fun and enjoyable book. Her main purpose of reading was just for enjoyment. However Margaret added that the various kinds of 'Moos' portrayed in this book acted as a reference for children's next learning about musical instruments. Margaret was planning and expecting children to make use of the ideas from this book to later play the musical instruments in various ways.

This section concludes with a summary of the four teachers' beliefs about young children's critical thinking, and their beliefs about using picture books to promote critical thinking (see Table 3).

Table 3: Summary of teachers' beliefs

Teachers' beliefs	
Young children's critical thinking	**Picture books for critical thinking**
Young children's critical thinking can be nurtured since a young age. Their critical thinking should include understanding the meanings and key messages in picture books, and making inferences throughout the reading. The children should also be able to justify their claims and opinions based on their prior knowledge and experiences. They should also be willing to listen to other people's ideas and to share their own ideas through participating in discussion. Young children's critical thinking is promoted mainly when open, thought-provoking questions are asked by the teachers. However, the egocentric characteristic of these young children may challenge their ability to think at a higher level, such as to think about another person's perspective.	The words, pictures, and story content offer children the opportunities to gain new knowledge and to make connections to their own lives. Picture books are flexible teaching tools which enable teachers to stimulate children's thinking for other learning areas and to stimulate ideas for writing. Children could also learn to make predictions and learn to justify their claims by using the features in picture books. The story also offers messages and ideas for young children to think critically about them.

Section 3: The teaching strategies

In all four classrooms, teachers displayed a range of teaching strategies that were observed to be effective in promoting critical thinking in young children. As described in Section 2, the nature of picture book reading lessons in New Zealand provides opportunities for children to develop reading, listening, viewing, and oral language skills. All of these skills acted as a foundation for the children to develop their critical thinking. This section describes and discusses the six effective teaching strategies that emerged from the data. These included:

- Using open, thought-provoking questions
- Identifying and discussing the key messages of the stories
- Making connections to children's prior knowledge and experiences
- Organising peer discussion
- Modelling thinking aloud
- Exploring words and pictures

These strategies were not generally used individually to promote critical thinking. Many of them were observed to be used jointly during teaching practices. However, for the purpose of answering research question 1 which seeks information on effective teaching strategies that promote critical thinking, each of them is discussed separately below. Acknowledgement is given when one of the strategies is used in conjunction with another strategy.

Using open, thought-provoking questions

Data gained from the interviews and observations revealed that open, thought-provoking questioning was one of the most significant teaching strategies used by teacher participants within the context of picture book reading to foster children's critical thinking. Open, thought-provoking questions are seen as higher order questions which can stimulate higher level thinking (Renaud & Murray, 2007; Walsh et al., in press). According to the teachers, it is worthwhile to encourage children's critical thinking even at a simpler level for children at this young age. This is to prepare children for more sophisticated thinking when they reach a higher level of schooling.

A sociocultural perspective (Vygotsky, 1978) suggests that cognition is developed through social practices, such as children learning beyond their actual developmental level under the guidance of the adult. In this study, the teachers argued that the quality of teacher questioning potentially determines the quality of children's critical thinking. Sabina commented,

I've got to ask those [why/how] questions for them to respond critically. If I'm asking a shallow question, such as a recalling question, then I don't think they can really respond critically, because there's a direct answer.

Margaret stressed that she would try her best to ask open questions which allow children to make connections and think more deeply. She stated,

I try to avoid questions like 'Do you do this?' because they will give you a yes or no answer. If I ask questions like 'What do you think?' or 'How do you feel?' they will give you a bit more input.

These examples illustrate the importance of using quality questioning as a way to scaffold children's development of higher level thinking. A detailed analysis of teacher questioning was done to obtain a better understanding of their instructions. Their questions were analysed using the *Three Level Guide* (Literacy Aotearoa, n. d.). As it is difficult to determine precisely whether a question is interpretive or evaluative, this study analysed the teachers' questions according to the interpretation of the three levels described in Chapter 2. The children's responses to each type of the question were also analysed, and included only if they were relevant and appropriate.

As shown in Figure 3, most of the questions applied by the teachers were at the interpretive level, with fewer at the literal level and least on the evaluative level. This high number of interpretive questions reflects the teachers' emphasis for children to participate in the meanings of texts by relating to children's own lives and experiences. It is consistent with the literature that argues for teaching practices that include learners' existing knowledge and experiences into the learning process (González, 2005; Rosenblatt, 1978; Vygotsky, 1978). This also indicates a conjoint use of strategies with making connections to children's prior knowledge and experiences.

Figure 3 shows a significant number of children's responses to the interpretive questions, suggesting that they were capable of constructing this type of meaning as they interacted with the picture books. This capability shows consistency with studies (Knight, 2006; Rickford, 1999; Ryan & Anstey, 2003; Simpson, 2005) which found that children were competent in tasks that require them to give opinions and justifications based on their own experiences. This high number of children's responses to interpretive questions also suggests that the teacher participants generally welcomed various opinions and ideas from the children during their reading lessons, which is consistent with Sandretto and Critical Literacy Research Team's (2006) argument for a classroom practice where teachers encourage multiple interpretations rather than one correct answer.
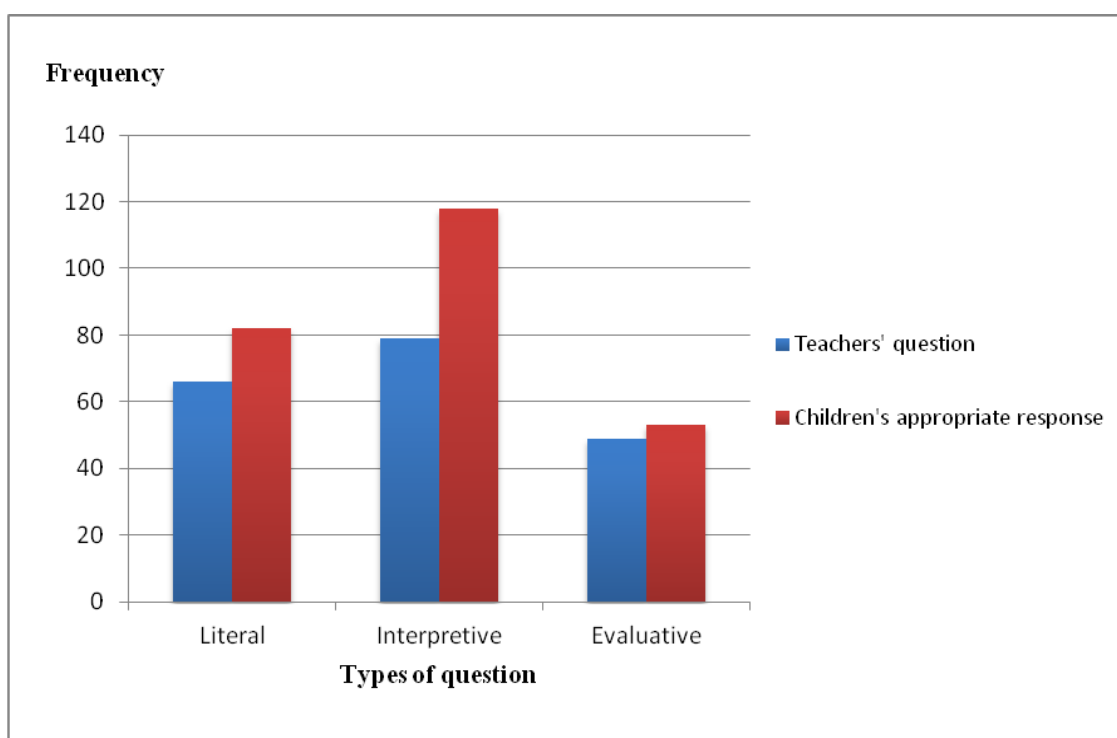
Figure 3: Overall frequency of the different types of question used by teachers and children's appropriate responses towards them

There was a reasonably high number of literal questions asked by the teachers. These questions included for example, "*What do you see Annika [a character in the picture book] is doing in this picture?*" and "*What does 'suffocate' means?*" These questions have a particular purpose in fostering critical thinking. As explained by Sabina, the children should use the information from words and pictures to support their higher level of thinking processes. Her opinion is consistent with Bloom's (1956), Pressley and

Block's (2002) ideas that higher levels of thinking are supported by the attainment of the lower levels of thinking. In other words, the teachers supported the children's higher level of thinking by first ensuring that children understood the literal meanings in texts. The number of children's responses to literal questions show that they were competent in answering the literal level questions.

Open, thought-provoking questions can "help children to get beyond reading the surface features of texts and develop the habit of being critically reflective" (Ministry of Education, 2003, p. 81). In this study, the interpretive and evaluative questions were considered as open, thought-provoking questions. However, the number of evaluative questions observed from the teaching practices was comparatively lower than the number of interpretive questions. An example from Gabriella's reading of the picture book 'Zoobots' (Whatley & Whatley, 2010) exemplifies her use of evaluative questions. She asked the children "*Why would not having a tail be such a good idea?*" on a picture that showed a robotic figure with a long tail standing unstably on the ground. A child answered that "*Because it's too long it might trip over*", while another exclaimed that "*You see, he's tipping a little to this way (imitating the unstable robotic figure by slanting his own body to one side) and he'll crash!*" This question stimulated children to think about the cause and effect of a situation, and these children appeared to have answered well.

However, evaluative questions were also found to be challenging to some children. Figure 3 indicates that when the teachers asked literal and interpretive levels of question, the children proficiently gave more responses to those questions asked. However, when the teachers asked evaluative levels of question, the children gave less response to them. This finding is consistent with Simpson's (2005), Ryan and Anstey's (2003) studies which found that children have lower engagement in analysing texts. In a reading lesson on the picture book 'The Mixed-Up Chameleon' (Carle, 1984), Sabina tried to discuss the ideology behind the story which is to appreciate individual differences. By the end of reading, she asked the children, "*What do you think Eric Carle [the author] is trying to get across? What was his point?*" This question did not managed to elicit children's understanding of individual difference, as a child replied uncertainly "*Umm…..to make kids laugh*", while another said "*He wants all the colours*". These children appeared to find it difficult to identify the key message. Sabina explained during the interview that

the concept of individual difference is quite complex for these young children and probably not all the children comprehended that concept without further support.

According to the *Three Level Guide* (Literacy Aotearoa, n.d.), it is often necessary to provide justifications for the answers to interpretive and evaluative questions. This is because the answers to the interpretive and evaluative questions are more subjective and are usually not stated explicitly in texts. From the observations, the teachers were seen frequently probing children to justify their answers to their opinions and claims. The conversation below presents how Gabriella probed for children to justify their judgments during their reading of the picture book 'Zoobots' (Whatley & Whatley, 2010).

Teacher: They said it is hard to find a new best friend. Do you think that's true?

Children: No….Yes... (*Some say 'yes', some say 'no'*)

Teacher: Why do you think it is hard to find a new best friend, Ben?

Ben: It's hard because there are no more animals in the jungle.

Teacher: And why do you think it is not hard to find a new best friend, Adam?

Adam: Because you could just like….there are heaps of people around the school. You could just ask them 'Do you want to be my best friend?'

Previous studies stress highly on building upon children's background lives and knowledge in their learning experiences (González et al., 2005; Hatano & Wertsch, 2001; Rogoff, 2003; Rosenblatt, 1978; Vygotsky, 1978). In the example above, Gabriella's questions of '*Why do you think ……?*' were particularly successful in eliciting children's prior knowledge and experience to support them in validating their arguments. Adam's response was based on his prior experience of making friends in school; Ben's justification was based on his prior knowledge of the illustrations that there are no other images of animals drawn in the book. Ben's response also shows how visual texts are significant tools for children to think critically, strengthening the literature that emphasises on how visual texts provide elements that can stimulate readers' complex thinking skills (Dowhower, 1997; Falihi & Wason-Ellam, 2009).

Overall, it appears that the teacher participants were aware of the importance of using open, thought-provoking questions, and they were observed to be implementing it in

practice. According to the result presented in Figure 3, it can be concluded that the picture book reading lessons focused ultimately on eliciting children's knowledge and experiences to help them to think and find meaning from the texts. Although some children were found to be comparatively challenged to respond to evaluative questions, there were occasions as presented above, where the evaluative questions were applied successfully in stimulating critical discussion amongst the children.

Identifying and discussing the key messages of the stories

The key message of a story can be understood as a message that the author wanted to convey to the readers. Depending on who the readers are and how they interpret the story, the key message can also be described as the big idea that the story reflects to the readers. A critical literacy perspective suggests that texts are not neutral (Luke & Freebody, 1999b), and that there are assumptions and values in picture books which are worth exploration and deep thinking (Considine et al., 1994). Therefore there is a demand for children to think critically about the messages and ideas in picture books as this process not only helps children build knowledge about the construction of texts, but also nurtures children to have personal reflections about texts (Ministry of Education, 2003, 2009). The discussion of the assumptions and values in key messages also leads to children engaging in the practice of critically analysing and transforming texts (Luke & Freebody, 1999b).

All teachers in this study recognised the significance of discussing the key messages of the stories. It was apparent across the reading lessons that the teachers were using this strategy in different ways, to successfully enhance children's critical thinking. For instance, Sabina asked the children, '*What do you think the author is trying to tell us?*' Anita questioned, '*Who's got a really good idea about what this story is trying to tell us?*' And Gabriella put it, '*What do you think is the message of this book?*' These questions were used interchangeably as different children interpreted the question in individual ways. During the teaching process in the children's zone of proximal development, teachers adjust their instructions to suit children's level of understanding (Vygotsky, 1978). In this study, it was observed that if one way of questioning was not effective, then another way of questioning was used.

The following examples illustrate more fully how this strategy was used by the teachers. The first example presents the conversation during a reading lesson using the picture book 'Dinosaurs and All That Rubbish' (Foreman, 1993). Anita encouraged different ideas from the children on what they thought was the author's message. She proceeded to reflect children's ideas with their prior knowledge of the 4R concept as described in Section 2.

Teacher: Who's got a really good idea about what this story is trying to tell us?

Edie: Don't destroy the world and keep the world for other people.

Lara: Don't hurt the planet.

Teacher: Who can start a sentence without putting a 'don't' at the beginning?

Ben: Making the world sustain.

Cassy: Never pollute the world.

Teacher: Because why?

Cassy: We all share the world.

Teacher: We all share the world, so we use the 4R. What are the 4R?

Children: Reuse, recycle, reduce, repair.

According to Anita, her aim was to make the children relate the message to their own lives by thinking about what they could possibly do within their own families and communities. It is important that children not only learn to read texts, but also critique them so that they understand how texts influence people in life (Freire, 1993, 1983, 1973). In this case, Anita questioned the children on the 4R concept that they had learnt previously, so that the children were able to make links between life and learning. It is apparent that this strategy was used jointly with the strategy of making connections to children's prior knowledge and experiences, which is the next strategy discussed.

Another example also illustrates how a discussion of key messages helps make links between word and world. This is from a reading of a lively story about making friends in the picture book 'Zoobots' (Whatley & Whatley, 2010). The teacher, Gabriella, explained that because young children have many experiences of making friends, identifying and discussing the key message helped the children to reflect on their own thoughts about friendship, and whether their thoughts about friendship had changed.

> **Teacher:** What do you think is the message of that book?
>
> **David**: Making friends.
>
> **Teacher**: What about making friends?
>
> **David**: Like they build a friend and that's kind of like people finding friends.
>
> **Ben**: You can't have too many friends.
>
> **Teacher**: But was it ok they [the characters] found another friend?
>
> **Ben**: Yes.
>
> **Teacher**: Did it matter in the end what the friend looked like?
>
> **Ben**: No.

Ben had initially demonstrated his active role in reading by bringing in his own interpretation that people cannot have too many friends. According to Lipman (1980), critical thinking develops when children start having wonders and curiosities about ideas that interest them. Ben's response seems to show his curiosity about friendship when he disagreed on what was being discussed. Although Ben had a different interpretation about friendship, Gabriella continued to discuss the key message to convey the moral to Ben, that friendship is not something evaluated from numbers and appearance.

The example above reflects how this strategy of identifying and discussing key messages has allowed children to think about the ideology behind the story. Children should learn about their own values and those of others, as well as about the moral, social, and cultural values (Ministry of Education, 2007). The identification of key messages had required children to integrate ideas throughout the story and add in their prior knowledge and experiences, to figure out what these key messages actually mean.

A more sophisticated concept in the discussion of key messages includes understanding the author's intention, assumptions, and biases. This is emphasised in the *Four Resources Model* as the practice of critically analysing and transforming texts (Luke & Freebody, 1999a). Anita and Margaret agreed that discussing the author's intention is good for the children, however they stated that they do not implement this discussion in their teaching practice because junior primary children are quite egocentric. In Margaret's words, children's learning is '*all about themselves and their worlds*'. According to them, the children will not be able to read other people's perspectives such

as understanding the reason an author constructs a text in a particular way. However, Mitchell and Riggs (2000) argues that young children at the age of three to five are already capable of understanding that people have different thoughts, beliefs, desires and feelings from their own. The analyses of children's interview responses revealed a growing ability in some of these children to think about the authors' perspectives. This finding is discussed in detail in Chapter 5. It suggests that teachers could make use of this growing potential and continue to support children in building up their capabilities in this aspect of analysis.

In short, this strategy of identifying and discussing key messages of the stories is important in fostering critical thinking in young children. The teachers strongly emphasised this aspect of teaching and implemented it in practice. The critical thinking that was seen developing in most children included understanding meanings, making connections to their previous learning and reflecting on real life situations.

Making connections to children's prior knowledge and experiences

In this study, making connections to children's prior knowledge and experiences was a strategy widely used alongside other teaching strategies. The concept of making connections is highly emphasised as an aspect of critical literacy and is most parallel to the practice of participating in the meanings of texts, proposed in the *Four Resources Model* (Luke & Freebody, 1999a). This strategy is stated explicitly in The New Zealand Curriculum (Ministry of Education, 2007) as one of the effective pedagogies that helps promote student learning. This approach is in sharp contrast with the blank slate concept developed by John Locke (1632-1704) where humans were perceived as being born without inner traits (Pinker, 2006). The blank slate concept indicates the human mind as an 'empty vessel to be filled' by later experiences, which also suggests that there are no connections between the new and existing knowledge.

All the teachers placed strong emphasis on making connections to children's prior knowledge and experiences as a way to promote critical thinking in young children. Margaret argued that the fostering of young children's critical thinking has to be '*really focused on children's experiences and their world*'. Another teacher, Gabriella, elaborated that when this strategy is used, young children could think critically about '*when this happens to me, I might do this*' or '*when that happens to me, that is how I*

felt'. Anita also gave her view on how children can participate in making meanings from texts based on their own understandings about the world. She said that,

> children *'need to finish off the connection in mind and see if it relates to the topic. Otherwise, it's just a story about dinosaurs. The fact that they could say 'Oh, this pollution's in the air' shows that they're making the connections, because the word 'pollution' was not explicitly mentioned in the story.*

Teachers' emphasis of making connection to children's prior knowledge and experiences catered for the learning needs in New Zealand classrooms which consist of children from a diverse range of backgrounds and ethnicities. This is because it enables children to 'relate new learning to what they already know and adapt it for their own purposes' (Ministry of Education, 2007, p.34). A classroom environment that considers children's existing knowledge and experiences is imperative to ensure children obtain meaningful learning (González, 2005; Luke & Freebody, 1999a; Ministry of Education, 2003, 2007; Rosenblatt, 1978; Vygotsky, 1978).

From the findings, this strategy was carried out to achieve two purposes: first, to help children comprehend the ideas in the stories; and second, to help children reflect on their real life experiences. The strategy is consistent with the reader-response theory where children's own knowledge and experiences contribute towards what they perceive as meaningful texts (Rosenblatt, 1978).

Examples from reading lessons can illustrate how teachers built on children's existing knowledge and experiences. Gabriella asked the class, "*What does that mean when you say panic? How does someone feel when they are panicking?*" The children were seen raising their hands, waiting eagerly to share their stories. A child said, "*When I was four or even three, every morning, I was scared and I couldn't even see my mum or my dad…..I thought it was a monster*"; while another expressed, "*When I was trying to peel the potatoes, I thought I was going to hit my finger. I know what panicky means. You scream, crying and like stomping your feet*". By relating to children's prior experiences of being panicked, they learnt about the key idea of the story – panic. Gabriella explained that being panicky are '*real things*' for the six year-olds, therefore they could relate immediately to their own experiences.

Another example was by Sabina during her reading lesson using the book 'The Crocodile's Coat' (Irons & Shaw, 2001). Sabina asked, "*When you choose clothes, what do you think about?*" Children shared their prior knowledge by giving responses such as, "*Match your clothing*", "*How warm they are so you keep warm*", and "*What size they are, fit me*". Questions that elicit existing knowledge and are not evaluative, are an effective instructional tool to generate thoughtful discussions (Ministry of Education, 2003). In this case, Sabina successfully nurtured children's thinking by drawing out their prior knowledge in a non-evaluative way.

The questions used by Gabriella and Sabina as described above, such as '*How does someone feel....*', '*Can you remember...*', and '*What do you think about...*', are all open questions aimed at probing children to relate to their prior knowledge and experiences. As children naturally use their prior knowledge and experiences to make sense of the texts (Ryan & Anstey, 2003), it is appropriate that teachers continue to build on this capability in their teaching practices.

Organising peer discussion

Based on the picture book reading lessons observed, the teacher participants provided many opportunities for children to talk to their peers. These peer discussions involved interaction between two to three children. A socioconstructivist interpretation of learning suggests that learning is mediated by interaction amongst people (Denscombe, 2010; Creswell, 2009). In other words, thinking is formed collectively as people's perspectives or thoughts influence one another.

Picture book reading lessons have huge potential for interaction as children are positioned to work on a similar task – which is the story – by using the communication forms of listening, talking, and questioning (Johnson & Johnson, 1999). During the reading lessons, the teachers were observed to be organising peer discussion by using instructions like '*Talk to your friend*' and '*Have a chat with the person next to you'*. This exemplifies what Lave (2009) and Wenger (2009) call the social mediation of individual knowledge, where participants develop shared meanings out of interaction with people. In this study, the children were invited to share their ideas to the class after

some time (approximately 30 seconds to two minutes) thinking about their own ideas and talking to their peers.

According to the teachers, this strategy allowed children to practise their listening and sharing skills which also exposed them to multiple interpretations and ideas from their peers. Bailin, Case, Coombs, & Daniels (2010) argue that open-mindedness is an important disposition that critical thinkers should have. This opportunity to interact with peers opened up children's minds to other people's perspectives. Furthermore, reading is not just about oneself, but rather an interrelationship with others (Luke & Freebody, 1999a). With children's participation in peer discussion, they had the opportunity to develop what Mitchell and Riggs (2000) call the 'theory of mind', where children understand that other people have different perspective from their own. The children had the chance to developed understanding that texts can be interpreted differently by different people.

The findings revealed that the peer discussions were aimed at allowing children to share their opinions about the story, to share their own experiences, and to discuss what they saw in the pictures. For instance, Gabriella asked during her reading lesson with the book 'Don't Panic Annika' (Bell & Morris, 2011), "*I want you to turn to someone next to you and then whisper how closing her [Annika] eyes helped?*" The majority of the children were seen busy sharing ideas with their peers, before some of them were invited to share with the class. Vygotsky (1986) argues that language can support cognitive growth as children put thoughts into consciousness for verbal exchange. The children in this study could develop their thinking by having the opportunity to express ideas orally.

A classroom demonstration process also facilitated peer discussion. For instance Sabina asked three children to demonstrate a measuring process illustrated in the story while the other children were asked to watch. At this point, the watching children were observed to be commenting and giving advice to the demonstrating children. Some children were also heard agreeing and disagreeing over the comments. According to Hatano and Wertsch (2001), social opportunities should be given to support the development of cognitive competences. A simple activity like this enabled the children to evaluate and make judgments on each other's work.

The teacher participants' justifications for this strategy of organising peer discussion parallel Vygotsky's (1978) perspective of learning that children learn much more in a collective activity. Both Anita and Gabriella explained that peer discussion provided the opportunity for the children to get their ideas out by listening to each other's experiences. It is a form of peer modelling in which children adopt or build on each others' ideas, and which is discussed under the following heading. *The New Zealand Curriculum* (Ministry of Education, 2007) emphasises the significant role of peers towards influencing children's values, attitudes, and behaviours. Therefore it is important for teachers to cultivate a learning community where children feel safe, confident, and empowered to engage in the interaction as they did in these four classrooms.

Modelling thinking aloud

Modelling thinking aloud was another common strategy that was explicit in each of the reading lessons observed. Modelling is one of the most powerful instructional strategies (Ministry of Education, 2003) and out of the four teacher participants, three mentioned during the interview that modelling thinking aloud was a strategy they used to foster children's critical thinking. Although not all teachers stressed this as a teaching strategy, they were all observed to be practising it. The observations of reading lessons revealed that teachers modelled thinking aloud to children, and children modelled thinking aloud to their peers. These are discussed below.

- *Teacher modelling thinking aloud*

The teachers were observed to be using an array of thinking language to draw children's attention and behaviour towards thinking. Thinking aloud is important as it models for children the language that they need for thinking (McNaughton, 2002). For junior primary children who are beginning to expand their vocabulary and learning to express their thoughts, imitation of others is a significant stepping stone for their own learning (Bandura, 1986). According to the teacher participants, an adequate amount of modelling is needed for junior primary children to help prepare them to be independent readers, thinkers, and speakers in the future. Gabriella commented,

> *Modelling is a way to scaffold the young children. Any talking that you do*
> *around books is paving the way for the children to be able to do it by*

themselves later on. So that when they get to Year 3, 4 and 5, they are able and comfortable to read and talk independently in their groups.

Some thinking language that was modelled by teachers included, "*I wonder….*", "*Let's have a think about……"'*, "*That was good thinking*", and "*I think….*". Thinking aloud act as a model to the children as they listen to the thinking language used by teachers, and then use it as a guide to process their own thoughts (Bandura & Walters, 1963). For instance, Sabina said, "*I wonder if that will change how he's [chameleon] going to feel. We thought it was happy, but before that he thought it was boring*". Sabina demonstrated the critical thinking process of modelling how the children may compare their own thoughts and with the chameleon's thoughts. This is to enable the children to think about how the chameleon might be feeling.

Another example illustrates how Gabriella modelled the use of thinking language. She initiated the conversation by saying, "*I'm thinking Annika's [main character in the picture book 'Don't Panic Annika'] starting to think. What do you think she'll do Sandra?*" This question had required the children to make a prediction, in which a child said "*I think she'll jump*"; while another predicted, "*She'll lift the moose up*". In Vygotsky's (1978) ZPD concept, children learn beyond their actual developmental level through imitating others or under an adult's guidance. In this case, Gabriella's initiative to make her own prediction acted as a guide for children to give their predictions.

The teachers also modelled by rephrasing children's words or sentences to make explicit the correct way of expressing thoughts. For instance when Anita asked, "*Look at the cover, why do you think it's [the picture book] call dump dear?*" A child made an inference by saying, "*He may be made of dump*", and Anita corrected him by saying, "*He may be made of things at the dump*". While modelling the use of thinking language, Anita also modelled to the children how to respond appropriately to convey their thoughts more clearly.

Teachers modelling of questions can help to equip children the ability to create their own questions. While the teacher participants appeared to have asked provocative questions about the texts, it appeared that there was little explicit encouragement for children themselves to ask questions. Some teachers did allow children to speak when

they voiced their thoughts in the form of calling out, but some teachers stopped this behaviour which seemed disruptive to the reading process. From the observations across the reading lessons, the interactions were shown mainly in a "teacher-question, student-answer, and teacher-reaction" pattern stated in the *ELP: in Years 1 to 4* (Ministry of Education, 2003, p. 82). This teacher-guided interaction pattern can inhibit learning as it places children in the passive learning mode. As argued by Lipman (1980), children should be nurtured to be active in questioning as it is one of the features of critical thinking. Instead of finding out what is in teacher's head or merely responding to the questions developed by teachers, children should actively question their own learning and resolve their own curiosities.

There is as well a need for more awareness amongst teachers about the importance of children being active in questioning. This is because by questioning, children learn to be reflective and to take charge of their own learning. As children bring in their own conceptions and misconceptions into learning, it is vital to have a learning atmosphere which welcomes questioning, arguments, and doubts (McGuinness, 1999; Lipman, 1980; Fisher, 2003). This study revealed that only one teacher, Sabina, stated that one of her ways to recognise children's critical thinking was '*whether they [children] can ask questions*'. Based on Pajares's (1992) argument about the influence of belief onto practice, it is timely to raise awareness amongst teachers about the importance of children questioning, in order to ensure this encouragement for children questioning is implemented in practice.

- *Peer modelling thinking aloud*

Peer modelling of thinking aloud occurred naturally from the interactions among children throughout the reading lessons. Collaborative learning stimulates the cognitive processes of children because it allows them to operate within their own zones of proximal development (Vygotsky, 1978). The 'expert other' who facilitates children to learn in this zone of proximal development is not always the adult. According to Slavin (1992), within this zone, children can also model the higher level of thinking to one another and build on each other's ideas throughout their learning.

Teachers have an important role in creating peer modelling opportunities. Gabriella's remark shows how she used peer modelling as a strategy to support those children who

were learning to think critically and to speak confidently in class. Her remark also implies the potential of peer modelling as a strategy to support the learning of the ESL children and of the children with a lower reading ability.

> *Sometimes I pinpoint on certain children because I know they are able to answer me. Some children can think critically, and some are still learning to do that. So a really good thing about reading a book to the whole class is that children can get ideas and learn from their classmates about how to respond to books and think more deeply about them.*

This strategy of peer support was incorporated into the peer discussion strategy. As discussed in the previous strategy of organising peer discussion, the children managed to listen and share their ideas with their peers, which were all helpful towards developing their critical thinking skills.

Exploring words and pictures

As described in Chapter 2, picture books are a type of mediating artefact which are purposefully constructed with unique features (eg. Considine et al., 1994; Evans, 1998; Newton, 1992; Unsworth & Wheeler, 2002; Vygotsky, 1978; Walsh, 2003). Instead of merely reading a picture book out loud to children, all the teacher participants were observed to be discussing the pictures and exploring new words throughout their reading. In the interviews, the teachers argued that picture books are a valuable tool for classroom discussions as children draw on what they hear from the words and what they see from the pictures to make meanings about the story.

According to the teachers, the words and pictures supported the children's learning by broadening their knowledge and vocabularies, and allowing the children to make connections and inferences. Sabina stressed that the combination of words and pictures make picture books an excellent tool because young children naturally learn to read by focusing on the pictures prior to the words. Her explanation was,

> *At this age with them [children] not being fluent readers, the pictures are certainly important….I use picture books a lot, especially because they rely a*

lot on pictures at this point and visual language is so important. They do need
to know pictures relating to texts, and all of those things.

Sabina emphasised the idea that children can learn to think forward, and to make inferences and justifications from the pictures even before reading the words. Meanwhile, Anita and Gabriella pointed out that the pictures have meanings which helped the ESL children, especially, to learn. These views agree with the literature (Brill et al., 2007; Considine et al., 1994; Farrell, Arizpe, & McAdam, 2010; Nikolajeva, 2003) that stresses the value of visual texts as a source for children's learning.

The teachers' practices demonstrated their use of words and pictures to stimulate children's critical thinking and the two examples discussed below illustrate how they applied this strategy. The first example was by Gabriella while using the picture book 'Zoobots' (Whatley & Whatley, 2010). There was a page which showed an image of a robotic figure drawn three times with different gestures (see Figure 4). Gabriella tried to analyse the picture with the children as some children appeared to have misinterpreted it by saying there were three different figures.
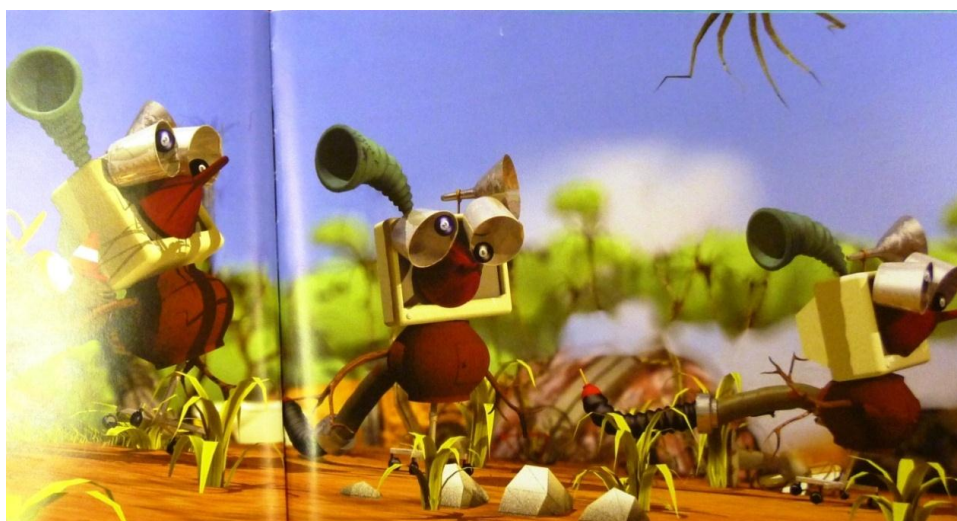

Figure 4: 'Zoobots' (Whatley & Whatley, 2010, p. 17-18)

Gabriella tried to correct their misunderstanding by asking "*I can see three of them, but are they three? Or what is showing there?*" This stimulated different interpretations by the children. Ishka explained his knowledge about the construction of visual text by

saying, "*Because they keep pushing it and it keeps drawing them when they move*". Ishka's response indicates he understood the visual effect representing the movement of the robotic figure. However another child disagreed by justifying that the picture did not have movement lines and hence they are three different figures. He said, "*It doesn't have those lines there that go down the whole page (using his hands to show drawing movements). Those lines. You see, there are different things that happen*". This child seems to have thought that in this page where there are no such movement lines, it cannot be showing the movement of a single object. These responses of the children as they analysed the illustrations and tried to justify their views shows that exploring visual text can potentially stimulate their critical thinking.

Gabriella explained that in pages like that where the picture predominantly carries meaning, children had to seek evidence from the pictures in order to make sense about it. She believed that this process of making sense through visual clues engaged children in critical thinking. Her comment was,

> *They [Children] had to think carefully about the illustrations and tell the story themselves. When children had only the illustrations to think about the story, they had to base on something solid [evidence], which is a good practice for their critical thinking.*

This supports the arguments from previous studies (Ennis, 1987; Nosich, 2009; Willingham, 2008) which require critical thinkers to be capable of providing evidence for their claims. The findings of this study confirm that visual texts are suitable teaching tools to engage children in critical thinking.

Building on the exploration of visual texts, the teachers in this study explored new words with the children. This exploration of words was observed to have also engaged children in critical thinking. An example below illustrates the way Margaret explored a new word with the support of the pictures. It was a page where the written text stated that there was a commotion with someone screaming and yelling (see Figure 5). However, the picture illustrates the details of the characters' expressions and actions when the commotion broke out, giving an example of how words and pictures are meant

to juxtapose each other to produce the best effects (Evans, 1998; Newton, 1992; Sipe, 1998).

Figure 5: 'Alfie and the Big Boys' (Hughes, 2007, p. 17-18)

Margaret indicated to the children to look at the pictures to guess the meaning of the word 'commotion' (circled in red in Figure 5). An analysis of children's responses suggests that the children were relying on visual clues to guess the meaning of 'commotion'. For example, Rory guessed that commotion means "*Looking*" as the picture showed people looking towards a similar point. However, Jason's guess that commotion means "*Hurt*", which seems to suggest that he was transferring his prior experience to interpreting the picture. It was not stated in the story that the little boy was hurt, but Jason made that guess because the picture showed a little boy crying. Although it was a logical way to interpret the picture, in this case it did not help him to understand the meaning of commotion. Margaret finally had to explain the meaning of commotion to the class.

As words and pictures form a medium for children to think and make meanings, other teaching strategies such as using open questions and making connections are integrated with this strategy during teaching practices.

Conclusion

This chapter has presented an overview of the context and setting of the participating schools and classrooms. It also provided background information of the teachers, their beliefs about young children's critical thinking, and their beliefs about picture books as a tool to promote critical thinking. Six key teaching strategies emerged as effective in promoting critical thinking skills in young children. These were using open, thought-provoking questions, identifying and discussing key messages of the stories, making connections to children's prior knowledge and experiences, organising peer discussion, modelling thinking aloud, and exploring words and pictures. These teaching strategies were also found to be effective in enhancing critical thinking when they were used jointly. The strategies are consistent with a sociocultural approach to teaching and learning where critical thinking skills are developed collectively and meaning is constructed by learners through interactions with others. An important aspect of this approach is for the learners to make links to their existing knowledge and experiences.

In order to support the evidence for the effectiveness of the teaching strategies, an exploration into the children's own thinking is needed. The following chapter focuses on the responses and behaviours of the child participants towards picture book reading, in order to seek for indicators of their critical thinking.

Chapter 5 Findings and discussion
The children's responses and behaviours
to picture book reading

Introduction

This chapter presents findings on children's responses and behaviours obtained from the reading lesson observations and interviews. The findings are discussed in relation to the literature reviewed in Chapter 2 and also in relation to the teaching strategies described in the previous chapter. The aim of this chapter is to answer research question 3 which seeks information on the children's responses to picture book reading, with an overarching aim to investigate their critical thinking abilities. It also answers research question 1 by providing more evidence to explain the effectiveness of the teaching strategies.

In this chapter, the data of the children's responses were analysed against the *Four Resources Model* developed by Luke and Freebody (1999a). This model emphasises the four practices of an effective reader; these include the children breaking the code of texts, participating in the meanings of texts, using texts functionally, and critically analysing and transforming the texts. The indicators of children's critical thinking are drawn mainly from their verbal explanations and justifications. Their behaviours while interacting with their teachers and peers are also described whenever relevant. These responses of the children add to our understanding of the effectiveness of teaching strategies discussed in Chapter 4, and they also offer an insight into the development of young children's critical thinking skills.

The children breaking the code of texts
- How do I crack this code?

When children are learning how to read written texts, they must apply the skills necessary for decoding words by using their knowledge of letter to sound relationships. They also have to acquire the skills for decoding pictures through using their knowledge of visual features. In short, code breaking involves recognising the structure or patterns of both written and visual forms of language (Freebody & Luke, 1990). Teachers are

required to foster children's knowledge and skills of decoding at Year 1 and 2 from their entry to school (Ministry of Education, 2010) and picture books offer an engaging and appropriate range of written and visual information which allow children to learn how to decode the literal meanings in texts.

The data from the observations and interviews in this study show that the children were able to decode successfully many aspects of written and visual information in the picture books used by the teacher participants. They were seen participating in the decoding process by making attempts at guessing or interpreting what the words or pictures might mean. Their ability was shown through their descriptions of what they saw and heard in texts. Although this literal capability in code breaking is not considered to be a critical thinking process, it is an important foundation to support children in their participation in higher levels of thinking (Bloom, 1956). As argued by Pressley and Block (2002), children need to decode the texts first before they are able to use those texts to make meaning or to think critically about them.

A six year old boy, Peter, demonstrated his awareness of the structures of the poetic text during the reading lesson of the picture book 'The Crocodile's Coat' (Irons & Shaw, 2001). After the teacher read the phrase "*First we need to measure his height, we must be sure to get it right*", Peter excitedly called out, "*The rhyming words. Height, Right!*" His ability to crack the code of the poetic text is shown by his response in naming these two rhyming words. In this picture book as well, the teacher guided the children to read some words by slowly saying the first sound of the words, for instance, "*Li......*" and the children tried to complete the word 'Lizard'. While doing this, a child called out and said that one of the words sounded like his name. Although the boy's name and the word they were learning to read were spelled differently, they had a similar pronunciation. This boy had demonstrated his code breaking ability by recognising the identical word sounds.

The reading lesson observations revealed that the teachers asked many literal level questions which were concerned with direct, factual information (see Figure 3 in Chapter 4). The teachers occasionally asked the children the meanings of some challenging words, such as 'suffocate', 'commotion', 'panic', and 'camouflage'. Some of these literal questions resulted in children showing behaviours such as putting fingers

in their mouths or frowning as they puzzled over working out the meanings of the words. This exploration of challenging words helped the children to expand their vocabularies which also potentially supported their critical thinking as they tried to make links between words and pictures. Sabina justified her practice of discussing challenging words by saying,

One of the boys brought up the word [camouflage] and I think he [a child] didn't quite know how to use the word, but he knew that it's in this context that a chameleon can camouflage itself. Then we went on that path because it's new language, it's quite cool language. At this stage, I'm not only wanting to develop their [children's] critical thinking, but also their vocabulary. Also I suppose it's a key idea in text that they can change colour.

As described in the previous chapter, the teacher participants also used literal level questions to support children in breaking the codes of visual texts. For example, Margaret asked a direct question about a picture to elicit factual information from the children. The cover-page of the book 'Alfie and the Big Boys' (Hughes, 2007) showed a group of boys kicking a ball and Margaret asked, "*What are the big boys doing in the picture?*" The children gave the correct answer by verbalising what they saw in the picture, saying "*Playing soccer*". These children demonstrated that they could 'read' the images and relate them to their knowledge of a familiar sport.

Data from the children's interviews revealed similar responses to those from the reading lesson observations, of children being capable of breaking the code of texts. An interview with two five year-old children, Madison and Shelby, revealed that they were able to identify and explain the meaning of the construction of texts where the visual features gave particular meaning to the written words. This interview was based on a page in the book 'How to Speak Moo' (Fajerman, 2001) which showed a cow in a tunnel making a 'Moo' sound. The 'Moo' word was drawn with only a big letter 'M' and many 'O's. The 'O's were decreasing in size and also put in separate speech bubbles, going up the tunnel into the distance. These visual effects on the word 'Moo' were meant to create the effect of echo (see figure 6).

Figure 6: 'How to Speak Moo' (Fajerman, 2001, p. 16)

When the children were asked what they knew about the word 'Moo' shown in the example above, Madison offered a clear explanation. With a lifted forehead and widened eyes, she exclaimed, "*Oh, oh, I know! They have lines because they only got one 'M' and heaps of 'O's, because it's echo. And the 'O's get really small because it's the echo, and it gets far far away!*" The main idea that Madison was trying to get across was the effect of echo represented by the enlarged then reducing letters 'M' and 'O'. It is possible that this understanding of Madison was developed from the reading lesson, during which Margaret, their teacher, was observed to ask the children what was happening with the letters. One child from the class had given his opinion that "*There is more 'O's, there is only one 'M'. And they go up and they get another one*". Margaret then indicated to the children that the cow was in the tunnel and then asked the children what it was like in a tunnel. The children appeared to have made connections to their prior experiences when they answered Margaret's question by saying "*dark*" and "*echo*".

Madison also added to her previous comment by saying, "*It's going fast by moving. It's moving but I can see the difference of letters. They're going fast because it's going from the tunnel*". Shelby built on Madison's comment by saying, "*And it's going like that [using her hands to show the zig-zag movement of the speech bubble], the Os going bigger and that one's going smaller*". These two children were able to explain clearly in their own words the visual presentation of the word 'Moo' by relating the effect of echo

to movement and speed. Although movement and speed were not discussed during the reading lesson, it is evident that Madison and Shelby had made use of what they heard from the conversations in the reading lesson to decode the texts and also add their own ideas as they expanded their understanding.

A further example from the children's interviews illustrates the effectiveness of the teaching strategy of exploring pictures when the children applied their knowledge from the reading lesson and used it in a new situation, as in an interview. In the picture book 'Zoobots' (Whatley & Whatley, 2010), there were two pages showing the movements of one robotic figure. This figure was drawn several times with different gestures and motions. It requires quite careful viewing in order to understand the correct sequence of the story as the written text does not explicitly support the illustrations. During the reading lesson, Gabriella explored the pictures with the children by asking them whether the picture was actually showing different robotic figures or repeated images of one. Many children were observed to nod their heads and answer yes, indicating that they were not yet able to interpret the construction of this particular visual text accurately. In order to help children understand, Gabriella asked, *"Are they three? What is it showing there?"* Although this was a literal question, it managed to elicit some thoughtful responses from the children with one child confidently explaining that the pictures were actually drawn to show that the same figure was moving.
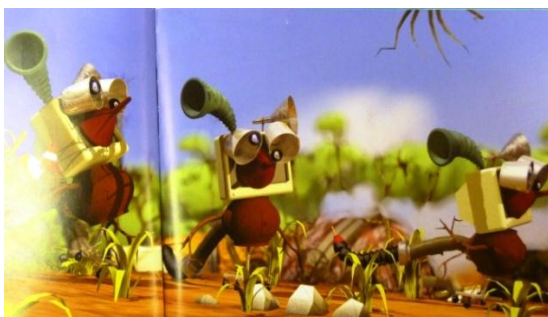
(page 17-18)   (page 19-20)

Figure 7: 'Zoobots' (Whatley & Whatley, 2010, p. 17-20)

The correct response given by these children above seemed to have acted as a correct model for the other children. When the researcher interviewed four children from that class after the reading lesson, all of them responded with the correct understanding of these two pages. One of the children said, *"We can know that it's moving. Like it's*

going there, it's going up (page 19-20), and that's going the other way (page 17-18)".
This child seemed to have internalised the knowledge learnt from the reading lesson
when she was able to explain later, on her own, about the construction of these visual
texts. This is an example of a peer modelling process as described in Chapter 4, of how
children learn through imitating or observing others during collaborative learning
(Bandura, 1986). Picture book reading had showed its advantage in providing a learning
opportunity for children to work together.

These examples illustrate that the children were generally successful in breaking the
code of visual texts and some written texts in the picture books chosen by their teachers.
This success may be a result of the teacher participants' careful selection of appropriate
picture books, which included an appropriate level of vocabulary of the written texts
which were both supportive and challenging, and visual texts which were of interest to
the children. Children's proficiency in breaking the code of written and visual texts can
also be attributed to the teacher's strategies of applying literal questions and exploring
the words and pictures described in Chapter 4.

The children participating in the meanings of texts
- What does this mean to me?
In this practice, the children drew upon their prior knowledge and experiences during
their reading to create meanings, and to identify and interpret the key messages of the
stories. The teachers explained that the picture books had to be relevant to the children's
own world and to provide new experiences and knowledge to children, in order to give
them opportunities to make meaningful connections.

The teachers stressed that an important component of children's critical thinking is to be
able to make connections to their prior knowledge and experiences. As described in
Chapter 4, the teachers facilitated this by asking interpretive questions to engage
children in making their own interpretations of the texts. This approach is emphasised in
The New Zealand Curriculum (Ministry of Education, 2007) and its supporting
documents (Ministry of Education, 2003, 2010) as building on children's existing lives
and experiences. A children's interview using the picture book 'Don't Panic Annika'
(Bell & Morris, 2011) illustrates how one child participated in the meanings of texts.
When asked whether that book reminded him of anything, he was able to draw on his

own experience of panicking by explaining, "*In the wind, the house shake. I thought I'm going to fall out of bed. I felt panicky and so I pray. After that I felt happy and sleepy*". This child's engagement in making meaning about texts was encouraged in the reading lesson where Gabriella started off the reading lesson by asking for children to tell their own experiences of panicking.

One of the most significant teaching strategies used by the teachers to promote critical thinking was identifying and discussing the key messages of the picture books. It is emphasised in the *LLP* (Ministry of Education, 2010) that after two years in school, children should be able to 'locate and interpret ideas in texts and think critically about them' (p. 13). As described in the previous chapter, during the reading lessons the teachers elicited the children's opinions about the key messages by asking questions like "*Who's got a good idea of what the story is trying to tell us?*" and "*What do you think is the message of the story?*"

A six year old child, Lucas, actively engaged in this learning process by describing his interpretation of the key message of the picture book 'Dinosaurs and All That Rubbish' (Foreman, 1993). His response during the interview reflects his understanding of the key message and concern for the environment, when he said, "*Look after the world for other people. And to not make factory, or too many factories. You can make factories, but factories that basically don't put pollution in the air. So erm…you can keep the world nice and clean*". Lucas's response shows his use of higher cognitive processes involving integration of ideas (Bloom, 1956) as he combined ideas from different sources, such as from the reading lesson and his own background knowledge. This was evident during the reading lesson where the teacher, Anita, was observed to discuss the concept of pollution and looking after the world. The children saw pictures of the polluted and cleaned environment in the picture book, and also listened as Anita read aloud some critical conversations between the characters in the story. The idea of looking after the world for other people was stressed during the reading lesson when Anita ended her lesson by discussing the message of the story. Some children mentioned that the story was asking people to share the world and not destroy it but to keep it for other people. These ideas from the lesson seemed to be adopted and integrated by Lucas who was interviewed later.

Another finding of children participating in the meanings of text was when they inferred what was in a character's mind based on their own views of the world. Previous studies (González, 2005; Ministry of Education, 2007; Robbins, 2005; Rosenblatt, 1978; Vygotsky, 1978) highlight the importance of activating prior knowledge and experiences to facilitate learning. During the reading lesson observation of the picture book 'Alfie and the Big Boys' (Hughes, 2007), Margaret asked the class, "*Why do you think Ian [a big boy in the story] took no notice of the little kids?*" Although the story did not give reasons to this, these five year old children were able to offer their own interpretations of Ian's thinking by saying, "*He may be angry at them*" and "*He doesn't know their names*". The children appeared to be able to understand another person's thinking by drawing upon their own experiences. Moreover, these children's behaviour of accepting different interpretation by their peers shows their open-mindedness, which is a disposition of critical thinkers (Bailin et al., 2010). In this case, children learn to understand that people gives meanings to texts in different ways.

The lesson observations also revealed that the teachers engaged children to participate in making meanings from texts by probing them to justify their opinions. One example from the lesson using the book 'The Crocodile's Coat' (Irons & Shaw, 2001) illustrates how a child, Emilia, justified her opinion by drawing upon her prior knowledge. When the teacher asked, "*Why do we need to know what size he [the crocodile] is?*" Emilia gave a reasonable answer to the teacher's question by drawing upon her prior knowledge of getting clothes which match the size of her body, by saying, "*Because if it's too small, it will be too tight*". This shows Emilia's competence in drawing upon her own knowledge in reading texts.

Similarly, during another interview using the picture book 'Dump Bear' (Hessell, 1991), Sonia justified her opinion by relating to her prior experience. When asked what she found interesting in this book, she turned to a page showing an illustration that particularly appealed to her. That was an image of two ladies with one of them wearing a flowery head dress. As that picture book was printed in the year 1991, it is likely that this dressing style was unusual and appealing for Sonia who was born in the 21st century. Sonia explained, *"I think that's [pointing to the flowery head dress shown in a picture] kind of interesting because it's colourful and you don't see most people wearing them"*. She had justified her view according to her prior experience.

On the whole, the observations and interviews revealed that these children were participating in creating meanings about texts, and demonstrating their capability to use existing knowledge and experiences to infer, to justify opinions, and to understand the key messages in the picture books. These children appeared to be aware that text can be interpreted in many different ways based on different experiences. This finding is parallel to the findings by Ryan and Anstey (2003) and Simpson (2005) that young children significantly engage in the text participant role. It implies the necessity to build on children's competence of making connections to prior knowledge and experiences in their everyday learning.

The children using texts functionally

- What do I do with this text?

Literacy is embedded in a social context in which people make use of various forms of texts for communication. According to this practice, learners learn through their social experiences to understand their roles as readers and to know what texts are for (Freebody & Luke, 1990). In this study, interactions during picture book reading increased the children's awareness of how they can use texts functionally, for example, how they can re-create a text and use texts in social activities.

It is beneficial for children's cognitive development if they are given sufficient time and opportunities to engage in social interactions (Hatano & Wertsch, 2001; Vygotsky, 1978, 1986). The lesson observations revealed that although the teachers were the ones reading the picture book to the class, it was not only they who dominated the talking. There appeared to be many question-answer interactions throughout the reading lessons which gave the children ample opportunities to talk.

These question-answer interactions increased children's understanding of what they can do with the texts when their teachers guided them to read the picture book. For instance, Sabina nurtured children's understanding of their roles as readers by encouraging them to make predictions about the story. The observation of Sabina's reading lesson of the picture book 'The Mixed-Up Chameleon' (Carle, 1984) revealed that she often asked, "*What do you see is happening here?*" whenever she turned over a new page. This book included an unconventional visual layout that promoted a challenge to the reader. When adults work in the children's zone of proximal development, children begin to transit

from adult guidance to self-regulated learning (Wertsch, 2008). With Sabina's frequent reminder during the reading of the previous pages, the children appeared to have known how to 'read' this book by the time they reached page 10.

At page 10, Sabina allowed the children to make comments before reading it out to them because the children were already laughing over the image of a funny looking chameleon. These children recognised what was happening in the picture because the teacher's question of "*What do you see is happening here?*" during the previous pages acted as a model for the children to read this page.

Figure 8: 'The Mixed-Up Chameleon' (Carle, 1984, p. 19-20)

In the midst of laughter over page 10 as shown above, a girl, Ebony, excitedly got up to point to the colour bar shown at the right margin of the page and exclaimed to Sabina, "*You didn't even notice the colours!*" Those colours symbolised the animals shown at the left margin of the page and the animals that added to the parts of the chameleon. When Sabina tried to draw more information from Ebony by asking her, "*What do you notice about the colours?*" Ebony showed her knowledge by justifying her position, saying, "*That are all the colours that he's [the chameleon] got*". Ebony's response showed her understanding of how to read the unusual layout of this visual text by matching the colours and the animals at the margins of the page.

Before turning to the next page, Sabina asked "*I wonder what the next colour would be?*" Felix appeared to know the answer when he explained how the cover-page (Figure

9), which shows a chameleon with a series of colours from its head to tail, illustrates a logical way to present the storyline. Felix replied to Sabina's question, "*I think it's green*" and went up to the book and turned over to the cover-page. He pointed to the chameleon's tail and explained, "*Because after yellow comes green. And then blue and then black!*"
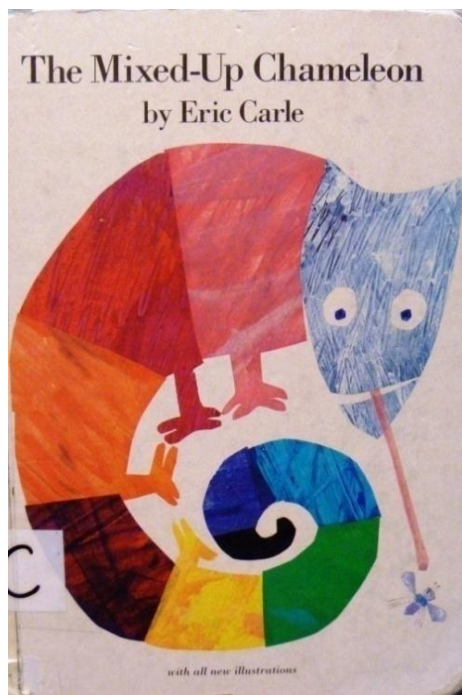
Figure 9: 'The Mixed-Up Chameleon' (Carle, 1984, Cover-page)

Upon hearing this, Sabina pointed out that it is a pattern. She then asked the class if they could match the animals with the colours that appear in every subsequent page. One child demonstrated her knowledge of how to read the text by saying, "*I know that is purple because I saw a seal*". Another boy added to this discussion his understanding that readers could expect a new thing to happen in each page. He said, "*If you move back [turn the page] a bit, it tells you what you can find*". Their comments suggest that they understood how to read the text which is constructed in this particular way.

The above example shows how children's awareness of their roles as readers were enhanced though their participation in classroom discussion. Lave (2009) and Wenger (2009) argue that social interactions engage children with the construction of new meanings and understandings. The participation of these children in figuring out the

meanings of page 10 and the cover-page showed above increased their awareness of how texts can be read collaboratively and differently.

The children's practice of using texts functionally was also evident from a paired interview with two five year old children, Steffi and Mandy. These two girls were seen negotiating about giving opinions on a picture in the book 'How to Speak Moo' (Fajerman, 2001). It was observed that Steffi turned the page while Mandy explained what the picture was about. When Mandy finished explaining, she said, "*Your turn, Steffi*". A similar situation occurred when Steffi finished her explanation referring back to Mandy. At times, they were seen exclaiming, "*It's my turn!*" when the other was dominating the talk. This negotiation of talk illustrates the interactional practices that are required for 'appropriate' participation in literacy learning in this social activity (Freebody & Luke, 1990). In this example, Steffi and Mandy interacted in a way that both appeared to feel comfortable with.

At one point, Mandy disagreed with Steffi's opinion when Steffi said that the image on the right page which shows a cow dancing on a wobbly jelly, was actually what the other cows on the left page were watching on the television (see Figure 10). Mandy claimed that Steffi's idea was not valid as she could not see the picture on the television. She clearly justified her disagreement by stating, "*I think it's not from there because it's shown the back and we can see yellow, but not that [the cow on wobbly jelly]*". In this case, Mandy showed her critical thinking skills of evaluating and justifying other people's opinions.
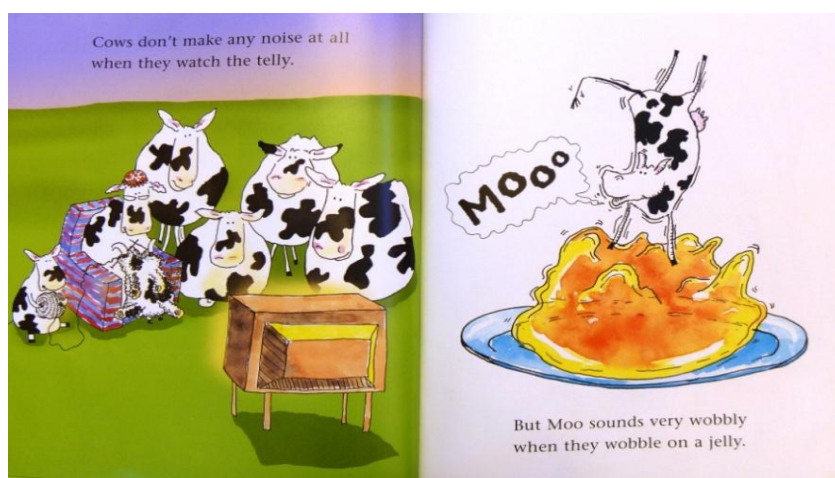

Figure 10: 'How to Speak Moo' (Fajerman, 2001, p. 11-12)

This conversation between Steffi and Mandy illustrates how they developed their ability to use text functionally as they participated in the social experience of reading this visual text together. Their differences in interpretation may develop their open-mindedness that texts can be read in different ways and that they each have a role in interpreting the texts. When these opportunities to interact are provided by the teacher, the children have the advantage of building on each other's ideas and thoughts. As described in Chapter 4, organising peer discussions was one of the common strategies used by these teachers to promote critical thinking.

The children also practised how to use text functionally when they appeared to be aware that the story content can be re-created. An important aspect of critical literacy involving children using text functionally is children feeling empowered knowing that they have the authority to craft text in different ways according to their own views and interests. For instance, during an interview using two of the picture books containing some wordless pages, the researcher asked the children what to do if a page has no words on it. Four children from different classes answered, "*We are authors. We create them!*", "*We write the stories ourselves*", "*You can look at the pictures and make it up all by yourself. You can tell the story yourself*", and "*You make it up yourself*". These children seem to have knowledge that books are written by authors, and that stories can be recreated in many ways.

When asked during the interview whether they would change the way of presenting a written or visual text if they had the chance, most children answered yes and described how they would change it. One girl offered an original and appropriate suggestion to alter the written text. She suggested that some of the words in the picture book 'Don't Panic Annika' (Bell & Morris, 2011) should be made into "*squiggly words to make it look scary*". She justified that because Annika was a character who always gets panicky and scared; hence squiggly words could express fear to the readers.

A child's response exemplifies how a young reader can readily transfer his understanding from an anthropomorphic situation, which is typical of children's books, to a real life situation with people. Caleb suggested how he could change the way measurement is portrayed in the picture book for a different purpose. When interviewing Caleb using the picture book 'The Crocodile's Coat' (Irons & Shaw, 2001)

which illustrates some lizard tailors using lizards to measure the length and height of a crocodile, he suggested, "*I would do [measure] it a different way, I would do it with a ruler. But if it's around my neck, I will use a string and a paper*". He was able to recognise and explain that in real life, people use ruler, string, or paper for measuring, instead of lizards as depicted in the book. His explanation also shows how he understood that measurement needs to be done differently according to what he wanted to measure, such as using a string and paper, rather than a ruler, to measure his neck. This is purposeful and reflective thinking stressed in the literature (Ennis, 1987; Fisher, 2001; Halpern, 1996; Wilson, 2000) as what constitutes as an active learner.

Another boy demonstrated how he used text functionally by describing how he could apply the knowledge learnt from a picture book into a real life context. This links to the word-world connection where education is argued as not a passive process of increasing knowledge, but rather an active process of knowing what we could do in life with the knowledge learnt (Freire, 1983). The picture book 'Don't Panic Annika' (Bell & Morris, 2011) illustrated ways to overcome panic. One of these was by counting aloud the numbers 1 to 10. This child commented during the interview, "*When I get home, I'm going to print out a sheet on how not to get panicky. I just have to look at the sheet and go 'ok, 1…2…3….*". This suggests he was well aware the purpose of the text and knew how he could apply this knowledge in his own life.

The children critically analysing and transforming texts

- *What does this text do to me?*

This practice requires children to recognise how a particular text affects their feelings, thoughts, or perceptions. It requires children to analyse texts in order to understand that they are constructed with particular purposes and ideologies which can influence them or others in different ways (Luke & Freebody, 1999b). Although the four practices are not hierarchical in importance (Freebody and Luke, 1990), this study views the practice of critically analysing and transforming texts as the most significant in exploring children's critical thinking. This practice is considered as important by the New Zealand Ministry of Education (2007, 2009, 2010) even for children at a very young age, as it empowers children to fully participate in the society.

The findings from observations and interviews revealed that the children demonstrated their roles as text analysts in two ways. The first was by discussing the impacts of key messages on their feelings or lives. The second was their ability to critique the construction of texts, such as the author's intention and ideology.

During an interview using the picture book 'Dinosaurs and All That Rubbish' (Foreman, 1993), two six year old children shared how the story had impacted on their feelings. It was a picture book that conveyed the idea of pollution and how the dinosaurs fought to keep the world alive. Two of the pages presented significantly contrasting images; one showed a brown and smoky, lifeless image of a polluted environment, while another showed a colourful image of an environment filled with flowers and trees. These two images conveyed an ideology of how the world and the human beings are dependent on each other for the benefit of all. The two children who were interviewed drew on these two images to explain their thoughts.
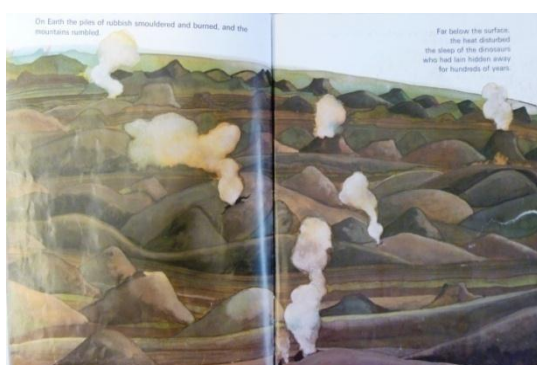
(Page 13-14)   (Page 21-22)

Figure 11: 'Dinosaurs and All That Rubbish' (Foreman, 1993, p. 13-14; p. 21-22)

When asked by the researcher how they felt after reading the book, one of the children, Isabella, referred to these two pages and explained the different feelings she had for the two different images. She said, "*When the start of the book (page 13-14), I kind of feel a little polluted inside my body. And at the end, like this page (page 21-22), I feel really nice*". Isabella's explanation showed how she distinguished between two images, and how they had affected her feelings as a reader. Another child, Evelyn, demonstrated her ability to evaluate when she commented, "*If it was my country, I feel sad at the start. But then they generate and make some more. So it reminds me that we need to keep it [the world] going for other people so that they can use it*". Her comments that people

need to keep the world clean for others show that she was reflecting on the text, reflection being another aspect stressed in critical thinking (Ennis, 1987). It could also be seen as an example, at a very simple level, of connecting the world to the words (Freire, 1983). These two girls' responses gave a successful example of how the ideology presented in the images influences them to think about their responsibilities as a citizen of the environment they live in.

These two children continued to practise analysing texts when they inferred what the author might be thinking when he drew the picture. Isabella commented with a frowning face that *"The author would have put a lot of effort in it, because it would be really hard to draw all of those hills and things coming out from the cracks [using her fingers to point at the cracks]"*. She seems to have the ability to position herself in the author's shoes. This understanding of the challenges that may be in the author's mind is consistent with the findings that young children are developing the 'theory of mind' (Mitchell & Riggs, 2000). When asked why she thought the author wants to draw it like that, she said, *"Because that might be how the world looks when it's polluted. And my granddad…my great great great granddad showed me a picture and looks just the same like that"*. She appears to be able to infer the author's perspective of constructing this text by justifying with her own prior knowledge of an old picture shown to her by her grandfather. Critical thinking was evident in Evelyn's response as well. When asked why she thought the author wanted to draw a picture like page 11, she explained, *"Because that is really pretty. He thinks it is a good way to start the world again. Not have it polluted..Ever!"* Evelyn had commented on that picture based on her own opinion and inferred that the author wanted a pollution-free environment.

From the observations and interviews, it appears that the discussion of the key message of the story was highly emphasised by the teachers during picture book reading. However, there was little emphasis placed on the discussion of the author's intention of conveying a particular message. Luke and Freebody (1999b) argue that it is important to be aware of the author's perspective during reading as this understanding enables readers to fully comprehend and critique the hidden meanings or key messages in texts. This discussion of author's intention requires the ability to understand that other people have different thoughts and perspectives. In other words, it requires the ability for individuals to be fully aware of their own perspectives and the perspectives of others.

The teachers offered different opinions concerning children's thinking about the author's perspective. Two teachers were doubtful over the possibility of children being able to discuss this aspect as they thought that these young children are egocentric, and are cognitively not ready for this high level of thinking. Another two teachers, however, stressed the importance of discussing the author's intention although it was not clearly demonstrated in their teaching practice. This was evident from the teaching strategies discussed in Chapter 4, which were not explicitly directed towards the discussion of author's perspective or intention.

Although there was lack of emphasis on discussing author's intention by the teacher participants, the researcher wanted to find out to what extent children understood the authors' intention in writing these books. The interviews showed that only a minority of the children were able to give some opinions during the discussion of author's intention; whereas most of them responded with an '*I don't know*' type of answer. Although still a small number, some children demonstrated the potential to perform this kind of analysis, which suggests an emerging capability of these young children to critically analyse and transform texts. For instance, when two children were asked "*Why do you think the author wants to write this book?*" during the interview on the picture book 'Dump Bear' (Hessell, 1991), they demonstrated their knowledge about the author's role in conveying a message to the readers. A child explained "*Because he just wanted to make everyone like don't throw things in the dump if you can recycle it*" and another child said, "*He has got something to tell to the people*". These simple yet reasonable responses exemplify these children's understanding that texts are created by the author with a particular purpose and viewpoint to influence readers.

The children's understanding of author's intention was also revealed as they critiqued the construction of a visual text. Before ending the interview session on the picture book 'Dump Bear' (Hessell, 1991), the researcher asked the children if they have anything else to share. A girl, Sonia, stared at a page which shows an image of the dump with cars and trucks loaded with rubbish. This page also shows a close-up image of a dog chasing a seagull, and this close-up image resulted in an exaggerated sized bird in relation to the vehicles.
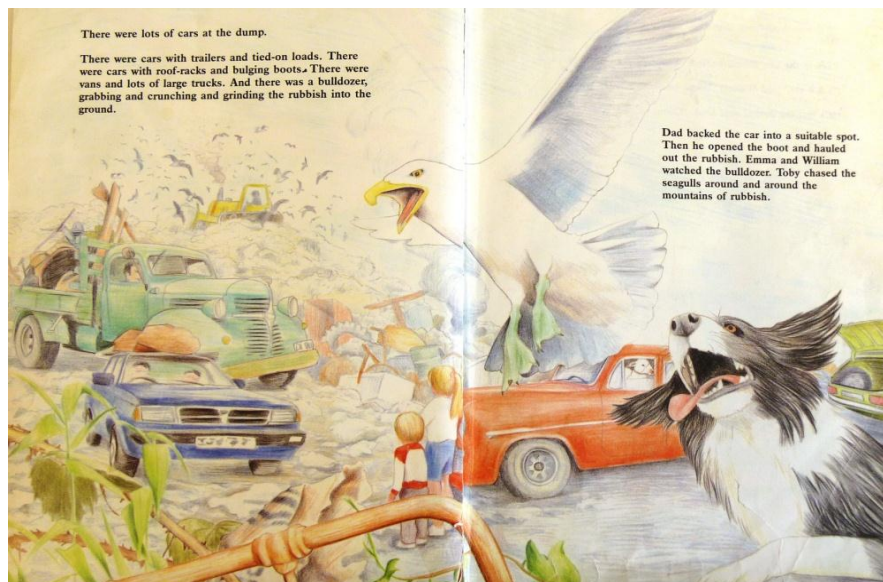
Figure 12: 'Dump Bear' (Hessell, 1991, p. 5-6)

Sonia asked, "*I'm wondering on this page, why there's a giant seagull? It's really big*." Her question about the enormous size of the seagull reflects her active questioning, which is part of the critical thinking process (Fisher, 2003; Lipman, 1980). When asked why she thought it was big, her peer, Tammy interrupted by saying, "*Because it's in a picture*." Sonia, who was still wondering about the image, responded to Tammy by saying "*I don't know….Because it's meant to be smaller than that truck. It's up really close*." It seems that her question was based on her prior knowledge that seagulls are obviously smaller in size than trucks. This image puzzled her because it contrasted with her knowledge of the world. In a way, this process indicated her breaking the codes of the visual text and then making connections to her existing knowledge. Upon further questioning, Tammy demonstrated her understanding of how the author had purposefully constructed the visual text in a particular way to influence the readers. When asked, "*It's really up close to whom?*" Tammy excitedly replied, "*Us! Because I think the author wants to make it (taking the book up close to her face) when we look at it, they could actually be seeing it like in life*." Her response showed how she had explained the author's construction of visual text which was designed to affect readers in a certain way. Overall, these two children's justifications during the process of analysing the picture had demonstrated their use of critical thinking skills around making meaningful connections between the texts and their own worlds. Walsh et al. (in press) highlight persistency as a good quality of a critical thinker. Sonia and Tammy's

conversation showed their determination in figuring out the unique construction of texts together.

When analysing texts, the children also drew on their own views of the world to make judgments about how people should behave. Some of these young children expressed quite stereotypical views of gender roles. This was evident from a reading lesson observation of the picture book 'Alfie and the Big Boys' where a group of five year old children were seen to laugh at a page which shows Ian, a big boy in the story, playing dolls with a little girl. A child called out, "*Big kid playing with those toys?*" and another commented, "*Why is the big kid playing with the toys? It's a shame!*" while another added, "*It's babyish!*" Their criticisms demonstrated how they have used their perceptions of gender roles to make judgments about how Ian should behave as a big boy. This interesting response of the children was followed up with an interview with a pair of children to probe more deeply on this thinking. When asked why they thought it was funny for a big boy to play with dolls, the children explained undoubtedly, "*Because he's not a girl*", and "*Boys play with comic books and computers*". Children's view of the world is largely influenced by the contexts they live in, such as home, school, or community (Gee, 2001; González et al., 2005; Rogoff, 1990; Vygotsky, 1978). In this case, the children's perception of gender roles might have been influenced by the way they were brought up in their families and by how their peers perceive gender roles.

This practice also involves children transforming texts. During an interview using the picture book 'Don't Panic Annika' (Bell & Morris, 2011) with a pair of children from the non-European/Pākehā ethnic group, a child commented that she would change the hair colour of Annika. Annika's hair was drawn in a blonde colour, and this child wanted to change it into black, explaining that it would look prettier. This child has black hair herself, and her response seems to indicate that she felt her world was not reflected in the picture book. Representation of characters in picture books should be brought forward by teachers for critical discussion with their children as it is concerned with how texts have the power to silence a particular person's world (Luke & Freebody, 1999a). In this case, the child shows her emerging capability to identify the silenced position within a text, or in other words, to identify how a text gives advantage to particular social groups over others. However, when this child was asked why she

thought the author chose to use blonde colour instead of black, she demonstrated her development of the 'theory of mind' which is concerned with the understanding that other people have different perspective and feelings from our own (Mitchell & Riggs, 2000). Her reply was, "*Because it looks pretty for the author*". Although this comment is from a six year old child, she showed her emerging ability to differentiate her own and the author's point of view.

Conclusion

This main focus of this chapter has been to answer research questions 3 which sought information on the children's critical thinking skills. It has also answered research question 1 by exploring the effectiveness of the teaching strategies. The children's responses were analysed against the *Four Resources Model* (Luke & Freebody, 1999a) which provided a comprehensive guideline to understand the children's critical thinking development.

Overall, the analyses revealed that the majority of children in this study were capable of breaking the code of written and visual texts, and of participating in making meanings of texts by bringing in their prior knowledge and experiences. They were also capable of using texts functionally by knowing their roles as readers and participating in social interactions during reading. A minority of the children demonstrated their growing abilities to critically analyse and transform texts when reading picture books. These are positive results which suggest that children, even at the young age of five to six years, are capable of thinking critically with the guidance of teachers and when the relevant contexts for learning are provided. The implications of the findings in this study for future teaching practices are provided in the final chapter.

Chapter 6

Summary and conclusion

The aim of this study has been to investigate the effective teaching strategies used by teachers to promote young children's critical thinking during picture book reading. Data were collected through observing the teachers during their teaching practices and by interviewing them about the strategies used during picture book reading lessons. Teachers' rationales for their teaching strategies were sought and children's responses to picture book reading were examined through interviews and lesson observations.

This final chapter provides a summary of the key findings presented and discussed in Chapters 4 and 5, and then outlines the strengths and limitations of this study. It concludes with a discussion of the implications for future teaching practices and makes recommendations for further research.

Summary of key findings

The teachers generally described young children's critical thinking as the ability to infer, to justify opinions, to understand key messages in the picture books, and to make connections to their existing knowledge and experiences. They stated that children also had to be willing to participate in social interactions throughout these thinking processes. The importance of good teacher questioning was also stressed by the teachers as an essential element to enhancing the children's critical thinking.

The teaching practices were consistent with a sociocultural perspective to teaching and learning (Vygotsky, 1978) where teachers encouraged interactions throughout the reading process and made links to children's background knowledge and experiences. The picture books were also carefully selected to suit children's interests and learning needs. It emerged that the teachers used six key teaching strategies that were effective in promoting critical thinking skills during picture book reading. These strategies were as below:

1. <u>Teachers used open, thought-provoking questions to elicit children's opinions and justifications.</u> These questions were those that asked for children's own interpretations and justifications, as well as evaluation. The teachers were successful in engaging children to make meanings from texts by eliciting children's prior knowledge and experiences. However, evaluative questions were less commonly used compared to the literal and interpretive questions. Children's responses showed them being challenged to engage in evaluation.

2. <u>Teachers identified and discussed key messages of the stories to engage children in critical discussion.</u> This was a significant strategy implemented by the teachers in picture book reading to foster children's critical thinking. When the teachers used this strategy, the children were thinking critically to make meanings out of the messages, by being reflective, and being curious about how texts influence people in real life situations.

3. <u>Teachers made connections to children's prior knowledge and experiences.</u> This strategy was widely used in combination with many of the other strategies. It supported children to make inferences and to justify their opinions, as well as to make reading more meaningful according to their own family and social contexts. This strategy was most significant in engaging children to make meanings out of the texts.

4. <u>Teachers organised peer discussion about the content of the picture books.</u> This strategy was demonstrated as encouraging discussion among groups of two to three children. It helped to develop children's critical thinking by allowing them to build on each other's ideas and learn how to use texts for social participation. This strategy also nurtured children to be critical thinkers who were open-minded to different perspectives.

5. <u>Teachers modelled thinking aloud.</u> The modelling process included the teachers verbalising some of the language of thinking and asking provocative questions about the texts. These were applied when interacting with children throughout the reading. This strategy supported children's thinking by demonstrating the ways to read a text critically.

6. <u>Teachers explored the meanings of words and pictures in picture books.</u> As the picture books were purposefully selected, the teachers explored challenging words and phrases with the children to help them break the code of the written and visual texts. This was an essential step in preparing children for a higher level of thinking. The teachers also explored the construction of the pictures which engaged children in making inferences and predictions.

The *Four Resources Model* (Luke & Freebody, 1999a) was useful in this study as a framework to analyse children's responses to picture book reading. This model provided another lens to look at the effectiveness of the teaching strategies during the reading processes. These children were found to engage in the reading practices of drawing on their prior knowledge and experiences to decode texts and its meanings, and then use these for social interactions with peers during the reading process. However, the children appeared to be more challenged when engaging in critically analysing and transforming texts.

The data revealed that picture book reading had not only enhanced children's literacy learning, but also enhanced children's learning of different subject areas, such as social sciences, mathematics, and health. The teachers also claimed that picture book reading fitted well into the school values which were drawn from the curriculum. Picture book reading lessons provided a context for collaborative learning amongst the teachers and children, where they participated in exploring topics together. The majority of the question-answer interactions between the teachers and the children were predominantly shown in a 'teacher-question, student-answer, and teacher reaction' pattern (Ministry of Education, 2003, p. 82). These interactions observed were generally not explicit in encouraging children to ask questions.

A further aspect of discussion was the teaching of critical thinking from another person's perspective, specifically from the author. This aspect of discussion was not explicitly incorporated in the teaching practices observed. According to the literature, thinking critically about the authors' perspectives and assumptions in texts is an essential aspect for developing a fully literate reader (Freire, 1973, 1993; Luke & Freebody, 1999a; Ministry of Education, 2003, 2007, 2010). Some teachers expressed that it was challenging to discuss the authors' perspective with children as the critical

thinking skills required are beyond these young children's developmental capability. According to some teachers, young children's egocentrism restricted them from understanding that other people have different perspectives from their own. Therefore it is unlikely that young children can discuss the authors' points of view. In contrast to the teachers' opinions, there was some evidence of the children analysing texts and thinking critically from the authors' perspective.

Strengths and limitations

The strength of this qualitative case study was that it probed deeply into the teaching and learning of a small number of children's critical thinking skills in real life settings. The methodology used in this study helped to explore effective teaching strategies which were based upon evidence from both teachers and children. The researcher obtained exemplars of teaching practices which included teachers' voice to help us understand their experiences of teaching critical thinking skills to young children. It also elicited children's voices to obtain a better understanding of their critical thinking. If teachers know more about the children's capability to think critically, it may open up their minds to the possibilities of encouraging it in practice.

Another strength of this study is that it focused on exploring the critical thinking of young children aged five to six years. This investigation contributes to the literature as there is lack of research focusing on children's thinking of this age group (Higgins et al., 2004). This qualitative approach to research children's critical thinking may add to the knowledge that has predominantly used quantitative approaches (Robbins, 2005).

A limitation of this study is that it is a small-scale study involving a small sample of classrooms teachers and children. Therefore the findings and implications are not generalisable to the wider population. The teaching strategies discovered were effective in their own respective contexts but they may not be effective in another context with different individuals. As this research holds the perspective that there is no ultimate pedagogy, readers or educators have to decide whether these strategies would be useful in their own respective classrooms.

Implications for teaching practice

An implication of this study for teaching practice is for teachers to move one step further by explicitly discussing with children the construction of texts and their ideologies. Children need to be encouraged to think about the hidden meanings and values behind texts in order to be active citizens (Freire, 1973, 1993; Freebody & Luke, 1990; Luke & Freebody, 1999a). This could be addressed by encouraging children to be text analysts as it seemed that children at this young age have the emerging capability to think critically about the construction of texts and to understand the author's intention. The enhancement of this potential should be continued in teaching practices in order to ensure the wider population of children achieve this important skill.

Another implication for teaching practice is to encourage children to be active questioners. Children need to be encouraged to take the initiative and actively ask questions rather than just answer the teachers' questions. The literature emphasised the importance of children being active questioners in order to develop successful thinkers (Fisher, 2003; Lipman, 1980). The *ELP: in Years 1 to 4* (Ministry of Education, 2003) emphasises that the pattern of "teacher question, student answer, teacher reaction" will inhibit children from becoming active thinkers, and therefore children's active questioning should be given more encouragement during picture book reading. However, careful consideration should be given to the issue of how to maintain children's enthusiasm for the story and of how to maintain the flow of reading lessons, while encouraging children to ask questions.

The lower emphasis on evaluative questionings found in this study indicates that more attention is needed to encourage this higher level of thinking. With literature that shows children's ability to perform complex thinking (Knight, 2006; Rickford, 1999), it is worthwhile for teachers to continue developing this growing capability by applying more questions that require children to evaluate texts.

Recommendations for further research

As this study concentrated on a small group of people over a particular point in time, it could not provide insight into the effectiveness of the teaching strategies on children's learning over an extended period of time. Further research could address this by conducting a longitudinal study, in order to help us understand the full extent to which these strategies are effective in helping children to learn as they build on their current capabilities.

As beliefs influence teaching practices (Pajares, 1992), further research which specifically explores teachers' conceptualisation of young children's critical thinking would be helpful. The teachers in this study were found to have common but also distinct opinions about critical thinking in young children. Their opinions differed especially on the aspect of children's ability to think from another's perspective and to question the texts. A thorough understanding of teachers' beliefs of young children's critical thinking could help to guide the curriculum and professional development programmes in supporting teaching practices.

A further area of research is to investigate young children's capability to think from another person's perspective, such as from the authors'. This is an aspect especially important in reading as the understanding of the author's perspective empowers children to participate more fully in the society (Freire, 1973, 1993; Freebody & Luke, 1990; Luke & Freebody, 1999a). From the findings of this study which revealed that most children have difficulty in critically analysing and transforming texts, further investigation is needed to explore how educators can address this challenge.

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APPENDICES

Appendix A

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Letter of explanation for principals

Research project: Effective strategies for teaching young children critical thinking through picture books

Researcher: Shu Yen Law (Sue), School of Education Policy and Implementation

Dear

I am a student studying for my Master of Education thesis at Victoria University of Wellington. I am seeking your permission to work with two teachers and a number of students in two Year One classrooms in your school.

My research aims to find out how teachers use strategies to promote critical thinking in students through using picture books. I am also interested in knowing how children think about the pictures and stories in the picture book.

My study involves three parts. The first is to observe a picture book reading session and collect relevant documents from the teacher (eg. lesson plans). The second is to conduct an interview with the teacher. The third is to interview four students to explore how they respond to and think critically about the picture books.

I am seeking your assistance in finding two suitable teacher participants who are proficient in early literacy teaching, who have been teaching their respective classes for at least three months, and who are promoting critical thinking skills.

I would like to observe the teachers in two separate reading sessions each. I will seek consent from the teachers before commencing this study. After each observation, I will interview the teacher, which would last about 45 minutes. Interviews will be audio recorded and transcribed. The teacher will be given the transcript to check for accuracy and make changes according to their wish. The interview will take place at a time and site designated by the teacher.

I would also like to observe and interview students after the lesson to discover how they respond to the picture books. I will seek consent from parents and also assent from the participating students. During the interview I will orally summarize the key points made by each student to ensure that I have understood their ideas.

The teachers, students, or their parents can withdraw from the study at any time up to the final point of data collection without giving a reason.

The names of the school, teachers and students will not be used in the study's report. Pseudonyms will be used. Only my supervisor and I will have the access to the research records. Data will be kept confidential in a password-protected folder and destroyed after three years.

Data will be analysed and findings will be shared with the school. The research will be deposited in the University Library.

I hope that you will be able to allow your school to be part of this study. If you have any questions, please feel free to contact me or my supervisor for further information. Contact details as below.

If you agree to be part of this study, please fill in the enclosed consent form and return by reply paid envelope.

Thank you very much for your assistance.

Shu Yen Law (Sue)   Dr John Dickie (Supervisor)

Email: shu_yen87@hotmail.com   Email: john.dickie@vuw.ac.nz

Telephone: 022 6511885/ 467 7881   Telephone: 463 9767

Appendix B

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Consent form for principals

Research project: Effective strategies for teaching young children critical thinking through picture books

I have read and understood the explanation letter from Shu Yen Law (Sue) which describes her research project and I agree to this school being part of the study.

I understand that:

- ☐ Written permission will be sought from participating teachers and parents of the students. Assent will be sought from the students.
- ☐ The names of the participants and the school will remain confidential to the researcher. Pseudonyms will be used.
- ☐ Observations and interviews will be conducted at a time and place designated by the school.
- ☐ Observations and interviews will be audio recorded and transcribed.
- ☐ Teachers will have the opportunity to check the transcript for accuracy and make changes.
- ☐ Lesson plans and samples of visual texts used will be collected with teachers' permission.
- ☐ Participants can withdraw from the study without giving a reason up to the final point of data collection.
- ☐ Data will be kept in a locked file or in an electronically password-protected folder and destroyed after three years.
- ☐ The research findings may be presented in academic or professional journals or at educational conferences.
- ☐ The research findings will be deposited in the University Library (student research) and shared with the school or teachers upon request.

I would like to receive a summary of the results of this research when it is completed and therefore I will provide my mailing or email address. **YES/ NO**

School _____

Name _____

Mailing/ Email address _____

Signature _____   Date _____

Appendix C

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Letter of explanation for primary teachers

Research project: Effective strategies for teaching young children critical thinking through picture books

Researcher: Shu Yen Law (Sue), School of Education Policy and Implementation

Dear

I am a student studying for my Master of Education thesis at Victoria University of Wellington. I am seeking your consent to be observed and interviewed as part of my research project.

I am interested in exploring what kind of strategies you use during reading sessions to promote students' critical thinking and the rationale behind those strategies. I am also interested in knowing how students think about the pictures and stories in the picture book. This will help to inform future teaching practice.

I would like to observe two picture book reading sessions in your classroom please and collect relevant documents (eg. lesson plans, visual texts used in picture books). After the observation, I would like to interview you to understand more about your experience and learning intentions during the reading sessions. I would also like to interview two students in each reading session.

Each interview would last about 45 minutes and would be audio recorded and transcribed. You will be given the transcripts to check for accuracy and make changes if you wish. I will orally summarise key points to the students during the interview as a way of checking that I have understood what they have said. The interviews will take place at a time and site designated by you. I will seek parents' consent and the participating students' assent.

Your name and the names of the school and students will not be used in the study's report. Pseudonyms will be used. Only my supervisor and I will have the access to the research records. Data will be kept confidential in a password-protected folder and destroyed after three years. The research will be deposited in the University Library.

You can withdraw from the study at any time up to the final point of data collection without giving a reason. I hope that you will be able to assist me in this project. If you have any questions, please contact me for further information.

Thank you for your assistance.

Shu Yen Law (Sue)

Email: shu_yen87@hotmail.com

Telephone: 022 6511885/ 467 7881

Dr John Dickie (Supervisor)

Email: john.dickie@vuw.ac.nz

Telephone: 463 9767

Appendix D

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Consent form for primary teachers

Research project: Effective strategies for teaching young children critical thinking through picture books

I have read and understood the letter of explanation from Shu Yen Law (Sue) which describes her research project and I agree to participate in this research.

I understand that:

- ☐ Permission has been sought from the Principal for this investigation. Written permission will be sought from each student's parents/ guardian and assent will be sought from each participating student.
- ☐ The names of the school, teachers and students, as well as the data I provide will remain confidential to the researcher.
- ☐ The interviews will be audio recorded and transcribed and I will have the opportunity to check the transcript for accuracy and make changes if I wish.
- ☐ Lesson plans and samples of visual texts used will be collected with my permission.
- ☐ I can withdraw from the study without giving a reason up to the final point of data collection.
- ☐ Students will be interviewed at a time and place designated by the school and interviews will be audio recorded and transcribed. During the interview the researcher will summarise orally the key points to the students to check for accuracy.
- ☐ The data will be kept in a locked file or in an electronically password-protected folder and destroyed after three years.
- ☐ The research findings may be presented in academic or professional journals or at educational conferences.
- ☐ The research findings will be deposited in the University Library (student research).

I would like to receive a summary of the results of this research when it is completed and therefore I will provide my mailing or email address. **YES/ NO**

Name _____

Mailing/ Email address _____

Signature _____ Date _____

Appendix E

Letter of explanation for parents and guardians of children who will be observed

Research project: Effective strategies for teaching young children critical thinking through picture books

Researcher: Shu Yen Law (Sue), School of Education Policy and Implementation

Dear parents and guardians,

I am a student who is currently enrolled in the Master of Education programme at Victoria University of Wellington. This year I am undertaking a research project for my thesis. Here I am seeking your consent to allow your child to be observed during two class reading lessons where the teacher shares a picture book.

My research aims to find out more on how teachers promote critical thinking in students by using images in picture books. I am also interested in knowing how children think about the pictures and stories in the picture books.

I have obtained permission from the Principal to include teachers and students from this school. The lessons will be audio recorded so children's comments will be written into a transcript.

All data and recordings will only be accessible by my supervisor and me. Data will be kept confidential and participants will not be identified in the study report. Your child's name will not be used. Data will be stored electronically in a password-protected folder and destroyed after three years.

It is hoped that this study will help us to understand more about students' thinking and give suggestions for future teaching practice. A summary of the research findings will be given to the school.

I do hope you will agree to allow your child to be part of this study. If you have any questions about this study, please feel free to contact me or my supervisor at the contact details as below.

Thank you very much for your assistance.

Shu Yen Law (Sue)   Dr John Dickie (Supervisor)
Email: shu_yen87@hotmail.com   Email: john.dickie@vuw.ac.nz
Telephone: 022 6511885/ 467 7881   Telephone: 463 9767

Appendix F

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Consent form for parents and guardians of children who will be observed

Research project: Effective strategies for teaching young children critical thinking through picture books

I have read and understood the explanation letter from Shu Yen Law (Sue) which describes her research project and I agree to let my child participate in the research.

I understand that:

- ☐ Permission has been sought from the principal for this research.
- ☐ My child will be observed in the classroom at a time and place designated by the teacher.
- ☐ The lessons will be audio recorded and children's comments written in a transcript.
- ☐ The name of my child will remain confidential to the researcher and will not be identified in the study report.
- ☐ All data and information will be stored electronically in a password-protected folder and destroyed after three years.
- ☐ My child can withdraw from the study without giving a reason.
- ☐ The research findings may be presented in academic or professional journals or at educational conferences.
- ☐ The research findings will be deposited in the University Library and a summary of the findings will be given to the school.
- ☐ I agree to let my child _____ to participate in the study.

Parent's/ Guardian's name _____

Signature _____   Date _____

Appendix G

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Letter of explanation for parents and guardians of children who will be observed and interviewed

Research project: Effective strategies for teaching young children critical thinking through picture books

Researcher: Shu Yen Law (Sue), School of Education Policy and Implementation

Dear parents and guardians

I am a student who is currently enrolled in the Master of Education programme at Victoria University of Wellington. This year I am undertaking a research project for my thesis. Here I am seeking your consent to allow your child to be observed during two class reading lessons where the teacher shares a picture book and interviewed after the lesson.

My research aims to find out more on how teachers promote critical thinking in students by using picture books. I am also interested in knowing how children think about the pictures and stories in the picture book.

I have obtained permission from the Principal to include teachers and students from this school. I would also like to interview a number of children, including your child_____, by asking them some questions on what they think about the pictures and stories. The interviews will be audio recorded and a transcript written.

All data and recordings will only be accessible by my supervisor and me. Data will be kept confidential and participants will not be identified in the study report. Your child's name will not be used. Data will be stored electronically in a password-protected folder and destroyed after three years.

It is hoped that this study will help us to understand more about students' thinking and give suggestions for future teaching practice. A summary of the research findings will be given to the school.

I do hope you will agree to allow your child to be part of this study. If you have any questions about this study, please feel free to contact me or my supervisor at the contact details as below.

Thank you very much for your assistance.

Shu Yen Law (Sue)
Email: shu_yen87@hotmail.com
Telephone: 022 6511885/ 467 7881

Dr John Dickie (Supervisor)
Email: john.dickie@vuw.ac.nz
Telephone: 463 9767

Appendix H

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Consent form for parents and guardians of children who will be observed and interviewed

Research project: Effective strategies for teaching young children critical thinking through picture books

I have read and understood the explanation letter from Shu Yen Law (Sue) which describes her research project and I agree to let my child participate in the research.

I understand that:

☐ Permission has been sought from the principal for this research.

☐ My child will be observed and interviewed in the classroom at a time and place designated by the teacher.

☐ My child's ideas will be audio recorded and transcribed.

☐ During the interview, Sue will summarise and repeat my child's main ideas to make sure that she has a correct understanding of what my child is saying.

☐ The name of my child will remain confidential to the researcher and will not be identified in the study report.

☐ All data and information will be stored electronically in a password-protected folder and destroyed after three years.

☐ My child can withdraw from the study without giving a reason.

☐ The research findings may be presented in academic or professional journals or at educational conferences.

☐ The research findings will be deposited in the University Library and a summary of the findings will be given to the school.

☐ I agree to let my child _____ to participate in the study.

Parent's/ Guardian's name _____

Signature _____   Date _____

Appendix I

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Letter of explanation for students

Research project: Effective strategies for teaching young children critical thinking through picture books

Researcher: Shu Yen Law (Sue), School of Education Policy and Implementation

❖ This letter will be read aloud to each child participant.

I am a teacher who is interested in finding out what children think about the pictures and stories in picture books.

I would really like to meet you so you can tell me more about what you see in the pictures and what you think about them. I will record and write down your ideas.

I will not use your real name. You can choose another name for me to use.

You do not have to help me. If you decide to help me then later you decide you want me to stop asking you questions or watching you work, you can say that you want me to stop.

Thank you very much.

Sue

Shu Yen Law (Sue)   Dr John Dickie (Supervisor)

Email: shu_yen87@hotmail.com   Email: john.dickie@vuw.ac.nz

Telephone: 022 6511885/ 467 7881   Telephone: 463 9767

Appendix J

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Consent form for students

Research project: Effective strategies for teaching young children critical thinking through picture books

Researcher: Shu Yen Law (Sue)

❖ This will be read out to each student.

The letter from Sue has been read to me and her research has been explained to me.

I understand that:

  ☐ Sue will ask me about what I see in the pictures and what I think about them.
  ☐ Sue will watch me work during picture book reading time.
  ☐ My name will not be used and I can choose another name.
  ☐ My ideas will be recorded and written down.
  ☐ Sue will share my ideas with people who are interested in what I have to say.
  ☐ I do not have to help Sue and if I decide I want her to stop asking me questions or watching me work, I can ask her to stop.

Child's name _____

School _____

Signature _____

Date _____

Appendix K

Observation schedule for reading lessons

General Information		
For example: Setting, participants, activities, picture books, duration		
Teacher	**Children**	**Notes**

Appendix L

Semi-structured stimulated recall interview schedule for teachers

Rationale for picture book

1. Why did you choose to use this particular picture book?
2. What is your opinion about promoting critical thinking through picture books?
3. In what ways do the written and visual texts in this book act as a mean to promote critical thinking?
4. What were your learning outcomes, learning intention, and success criteria in this reading lesson?
5. How did the reading lesson fit into the curriculum?

Critical thinking

6. How would you define or describe critical thinking?
7. What kind of critical thinking do you expect to be developed in first year children?

Teaching experience

8. How do you recognise when children are thinking critically?
9. What do you do when children do not respond as what you expected? Why?
10. What are the barriers you experience using picture books to promote critical thinking?
11. What is your opinion about this situation?
12. What are the barriers you experience?
13. What are you trying to accomplish here?

Demographic information

For example: Number of picture book reading lessons per week, number of years teaching, children's ethnicity

Appendix M

Semi-structured interview schedule for students

❖ These questions may differ slightly among picture books being used.

Code Breaker	• What do you see in these pictures?
	• What do you like about the pictures? Why?
Text Participant	• What do you think these pictures are trying to tell you? How do you know?
	• What do you think is the big idea of this story? How do you know?
	• Does this picture remind you of something?
	• What do you think will happen after…..?
	• What would you do if….? Why?
	• How would you feel if ….?
Text User	• Does this picture makes you think of something else?
	• What other things you would like to add in the story? Can you give me an example?
	• How does this picture differ from the other pictures?
	• How do you know about…..from this picture?
	• If you were the author, what would you change in this picture?
Text Analyst	• What do you think the author is trying to tell you? How do you know?
	• Can you tell me why the author wants to draw this picture in this way?
	• What is the problem….?
	• Do you think it is good or bad to…..? Why?
	• What do you think ……is trying to tell?
	• Do you agree with….? Why or why not?