Oral expression of five and six year olds in low socio-economic schools

Jannie Adriana Gerarda van Hees

'Children learn language from their language experiences – there is no other way ….from actual "usage events"..from particular utterances in particular contexts, and build up increasingly complex and abstract linguistic representations from these'

(Lieven & Tomasello, 2008, p. 168).

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Abstract

The quality and quantity of children's capacity to oral expression is shaped and influenced by the social and environmental conditions in which they exist and operate. While genetic factors cannot be ignored, variability in children's language acquisition and expression is to a great extent the result of the quality and quantity of environmental language input and output. The effectiveness of learning conditions in the classroom has the greatest potential, outside of home and family, to provide the quality and quantity of interaction and discourse these children need to exponentially expand their English language expressive capacities. It is the classroom in which five and six year old children find themselves for six hours, five days a week, forty weeks per year, that is the focus of this thesis. Of particular interest is the low socioeconomic school Year 1 and 2 classroom, where the environmental conditions of interaction and discourse play such a vital role in enabling or disabling the children's capacities to acquire and use English.

Typically, it appears classroom interactional and discourse patterns and conditions result in reductive rather than expansive discourse and learning engagement, where a child's expressive and participatory opportunities are highly restrictive, and the quality and quantity of students' expression is less than optimal. This research investigates the expressive realities of five and six year old students in four classrooms in four different low socio economic schools as viewed through a series of filters and lenses at two points in time, six months apart. The expressive and participatory behaviours of all students in the four classrooms were assessed; the vocabulary and expressive resources of twelve selected case study students measured; and a number of spontaneously produced oral texts by six of the case study students were micro-analysed via video analyses. Insights were expanded by micro-analysing these same students' interactional and discourse realities as viewed through two sets of lenses – that of each of the students and that of their teachers. Further, between Time 1 and Time 2, the four teachers in the study participated in an intervention designed to expand their knowledge and practices about optimising interactional and discourse conditions in the classroom, followed by 10 weeks of implementation.

Major findings include that the majority of five and six year old students in low socio-economic schools in this study are highly constrained expressively, and that 'typical' interactional and discourse patterns operating in classroom lessons do not provide optimising conditions for students' quality and quantity of expression, and expanding their language and cognitive acquisition potential. The study also shows that by providing teachers with explicit interactional and discourse knowledge and practices, pedagogical shifts can occur quite rapidly, leading to increased optimisation of classroom conditions, with resultant changes to the students' quality and quantity of expression and enhancement of their acquisition and uptake potential.

Dedication

I dedicate this thesis to Mama and Papa, Leo and Elisabeth van Hees, totally dedicated to us, their children. How experientially and expressively rich our lives have been together.

Heel hartelijk bedankt voor alles.

In memory of dear Paul, my younger brother, who passed away 16 September, 2009. Rust in vrede.

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My doctoral journey has sharpened and disciplined my mind, and shaped new perspectives. It has privileged me to walk closely with teachers and children to reveal some of the complexities of teaching and learning. It is a partnership of educational empowerment that drives me on as a researcher.

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Chapter 1: Introduction

It is a child's ability to communicate, to understand, and to express meaning orally in English that impacts directly and indirectly on their capacity to participate and engage in mainstream classroom teaching and learning. With an emphasis on transition into literacy, a compelling reason to pay attention to the meaning-making capacities of a five or six year child in the early years of schooling is the impact of vocabulary knowledge and usage, and expressive experiences and capacity, on literacy competency in English. There is general agreement among reading experts that strong predictors of success and failure in reading include a child's verbal memory, receptive and expressive language, receptive vocabulary, and phonological awareness (Lonigan, Burgess, & Anthony, 2000; Richgels, 2004). A child's reading ability is directly and indirectly related to vocabulary and oral expressive resources.

However, the need for a child to have effective oral language to fully engage in classroom learning is arguably even more compelling than simply focusing on literacy development (Alexander, 2004; Christie, 2002; van Hees, 2007). A child's inner meaning-making capacities, and the externalization of these through speech, Vygotsky's (1978) intraspsychological and interpsychological planes, is critical to meaning potential moment-by-moment, lesson-by-lesson in the classroom. According to Vygotsky (1934/1962), there are two planes of speech – 'the inner, meaningful, semantic aspect ….and the external, phonetic aspect [of speech]' (p. 125). It is primarily through the process of externalisation (saying) that insights can be had and expression can be made about the inner processes of thought and language. Conversely, it is the externalisation of inner processes in the form of speech that has the potential to expand a person's inner meaning making capacities, cognitively and linguistically. Thus, by opening up semiotic spaces for quality and quantity of classroom speech - by and with students, each student's meaning-making, and acquisition and uptake potential is enhanced.

What a student knows and can do expressively, and the extent of their acquisition and uptake potential, can never be fully known. In New Zealand, school entry assessment [SEA] (Ministry of Education, 1999) is frequently used to measure five year old children's text comprehension, sentence structuring and text organization, retention and expression of content, and vocabulary in English (Hattie, Irving, MacKay, Brown, MacCall, & Clay, 2005). SEA results show significant differences in retell of narrative stories in English between Pasifika[1] / Maori[2] students and other students beginning school at five years of age. The Best Evidence Synthesis report (Bidulph et al., 2003) stated, 'Pakeha and Asian children have consistently higher achievement than Māori and Pasifika children, the infamous 'long tail of low achievement in New Zealand schools'' (Thrupp, 2008, p. 59). This finding

[1] A term commonly used in New Zealand to refer to the diverse cultures and peoples from the Pacific region
[2] Referring to the indigenous peoples of New Zealand – their ethnicity, culture and language

is confounded by socioeconomic status (SES factors); the families of most Māori and Pasifika children occupy the lower levels of the SES scale (including the poverty level)' (p. iii).

In the New Zealand context, Pasifika children are mostly second, third and even fourth generation New Zealand born, whose main, if not only, language of use is English (Biddulph et al. 2003; McNaughton, 2011). Students who identify ethnically as Maori, and Pasifika students, are increasingly in inter-ethnic families where English is the dominant or only language of discourse (Boddington & Didham, 2010). As the majority of Pasifika / Maori children attend low socioeconomic schools, a considerable challenge faces teachers and families in these school communities – how to address the children's on-entry competency gap in English language vocabulary and expression. A great deal more can and should be known about their lexical and grammatical competencies and how their gaps and strengths are being attended to in the classroom in order to enhance their expressive and learning trajectories.

The evidence suggests that on average children from low socio-economic communities enter school with a receptive and expressive vocabulary in English of less than half the number of words of children from socio-economically advantaged communities. The latter generally enter school with a working vocabulary of 6000 or more words, and with well-established and age-appropriate language resources to understand and express meaning orally (Moses, 2005). For children who step into school expressively disadvantaged, classroom conditions have the greatest potential (outside of home and family), to provide environmental quality and quantity of interaction and discourse needed to exponentially expand their English language expressive capacities (Alexander, 2008; Genesee Lindholm-Leary, Saunders, & Christian, 2006).

The focus of this thesis is not simply about a child's capacity and opportunity to express orally in English and the situated social processes of classroom, but particularly about enhancing the potential of each student to acquire greater quality and quantity of expression in English[3]. The study is grounded in sociocultural theory, and in particular in ecological linguistics, that is 'the study of the relations between language use and the world within which language is used' (van Lier, 2004. p. 44).

Until recently, in New Zealand at least, specific attention to Year 1 and 2 students' capacity to express orally has been disproportionately minimal compared to concerns about literacy development. The New Zealand Curriculum (2007), for example, was non-specific in relation to oral language and vocabulary acquisition, with processes and strategies, language features and structure in listening combined with reading and viewing, and speaking combined with writing and presenting, with both sets as quite generalised statements. *Effective Literacy Practice in Years 1-4* (Ministry of Education, 2003), a key guiding document for New Zealand teachers in Years 1 to 4 in terms of language and

[3] In this thesis, discussion about language refers either specifically to English language or to language learning in general

literacy understandings and pedagogy, gives little specific attention to oral language. It made mention of the need for a child to engage in 'rich conversation with adults, siblings and peers…' for teachers to 'expand how words work by discussing (with children) the precise meanings of words ….' (Ministry of Education, 2003, p.29); and in a later chapter on language experience as an approach to writing, it claimed, 'A lot of talk takes place, and the children become aware that writing arises from oral language' (Ministry of Education, 2003, p.102).

Since 2007, more specific attention has been given to the importance of oral language in the classroom by the New Zealand Ministry of Education, marked by development of oral language exemplars and the production of a text for teachers entitled *Learning through talk* (Hancock & Brown, 2009). There is a growing realisation by teachers of how important it is that a child has effective oral language to fully engage in classroom learning. This includes an awareness that age-appropriate competency in home language/s other than English is desirable and an asset (Leki, Cumming & Silva, 2008; Perez, 2004), but perhaps more pressing in the context of mainstream classrooms in New Zealand where English is the dominant language of teaching and learning, is the recognition that age-appropriate competency in English is required for students to reach their learning potential. Awareness is not enough however. Despite growing attention to the oral language in the classroom, there is little known about the interactional and discourse patterns operating in Year 1 and 2 classrooms in New Zealand, about teacher knowledge and effectiveness in regard to enhancing the expressive capacities of students under-resourced lexically, grammatically and semantically, and about the quality and quantity of five and six year old students expressive competencies on entry and during their first year or two of schooling.

Intense interest in classroom discourse and its relationship to language acquisition can be traced back to Bernstein, Firth, and Halliday and Hasan in the 1950s and 1960s in social theory tradition. Central concepts include the relationship between language and society, process and system, language form and language function, and language and cognition (Hasan, 2005). Halliday's emphasis on a child's language development being functional and sociolinguistic and his 'language-based theory of learning (proposing that) language is a primary resource for learning' (Christie & Unsworth, 2000, p. 222) has stimulated numbers of classroom based SFL discourse studies (Hasan, Matthiessen, & Webster, 2005). Hardman, Abd-Kadir, & Smith (2008) in the context of Nigerian primary schooling, and Mercer (2008) in UK Primary schooling, noted that there have been relatively few studies that have examined interactional and discourse classroom patterns, expressly examining the relationship between talk and learning. Mercer (2008) posited that one possible reason 'is that studying the dialogues of teaching and learning over an extended period of time poses serious methodological and theoretical challenges' (p.36), with little available guidance theoretically and methodologically.

This overview highlights a number of information gaps, tensions and areas for potential research, namely: What do we know about the oral language and vocabulary resources of new entrant (NE)[4] five year children in low socio-economic schools in New Zealand and globally? How adequate is this information? What are 'typical' oral language and vocabulary patterns in Year 1 and 2 classrooms in low socio-economic schools? How supportive are these patterns in addressing on-entry and on-going gaps in oral language and vocabulary of five and six year olds? What individual and combined factors and variables will have most impact on reducing these gaps and enhancing the cognitive and linguistic development of these students? How can optimising interactional and discourse conditions become embedded into classroom practices and culture? The current lack of in-depth information is indicative of why the chronic nature of educational disadvantage persists for so many students, despite genuine concerns by educators.

During 1999-2004, Nuthall pioneered extended and micro-analytical classroom research in New Zealand in the context of social studies teaching in order to explore the relationship between teaching and learning. In a critical analysis and discussion of the theory-practice gap between teaching and learning, Nuthall (2004) stated: (Teachers need to) 'understand how their actions, assessment practices, and behavior and task requirements affect what is going on in the minds of students' (Nuthall, 2004, p. 274). 'How teaching is related to learning requires an understanding of a) how individual student behavior and experience are shaped by the way the teacher designs, manages, and assesses classroom activities; b) how the three different socio-cultural contexts (the public teacher-managed context, the semi-private peer relationship contexts, and the private individual cognitive context) influence this relationship; and c) how individual students make sense of and extract information from their classroom experiences' (Nuthall, 2004, p. 281). Central to the research questions and selected methodology of this study is a micro-genetic approach to analysing the interconnecting and interdependent contextual visible, semi-visible and invisible as related to the interactional and expressive realities of Year 1 and 2 students and their teachers in low socio-economic schools.

The purpose of this thesis is to contribute information and insights into these critical areas of enquiry, and in particular to investigate the matter of lexical and expressive limitations that is the reality of the many five and six year old students in low-socio economic communities on entry to school. These students deserve and need optimising interactional and discourse conditions to set them on a pathway of learning and linguistic expansion. In terms of schooling, 'towards an expressively enhancing pedagogy' is the only way forward. In partnership, researchers and practitioners must know and do more in order to more effectively attend to what is essentially at the heart of a student's educational and learning journey - language and communication.

[4] A child who has begun school for the first time – in New Zealand, at age five years old

Overview of chapters

The above contextual framework provides a backdrop to the thesis. Chapter two expands this backdrop by examining the literature related to two main research areas, namely, the environmental interactional and discourse patterns operating in classrooms, and optimising conditions contributing to enhanced language acquisition and use. It presents a model of variables identified as critical to expanding the quality and quantity of interaction and expression in the classroom by both teacher and students. Chapter three outlines the methodology used to gather qualitative and quantitative data in response to the three focus research questions underpinning this study. Findings are divided into three chapters, each chapter presenting singularly important research evidence about the interactional and discourse quality and quantity of students and teachers viewed through differentiating lenses.

Chapter four focuses on the students' quality and quantity of expression as measured at two points in time, six months apart (Time 1 and Time 2). Data and information about the participatory and expressive behaviours of all students in the four classes in the study and the vocabulary competencies of twelve case study students selected from these classes is presented and discussed. Further, micro-analysis of the oral expression of six of these case study students is also presented, offering detailed insights into the extent of their expressive competencies across time. In Chapter 5, the lens is on the interactional and discourse patterns operating in the classroom as construed by the teacher. Three sample lessons at Time 1 and Time 2 in each of the two teacher's classrooms are micro-analysed and compared, to identify the effects of the study's intervention on the interactional and discourse patterns operating in each lesson at Time and Time 2, and to assess whether optimising conditions for students' language acquisition and use has been affected. Chapter 6 presents the micro-analysis of the same lessons through the lens of the six case study students whose quality and quantity of expression was analysed in Chapter 4. How the interactional and discourse patterns of each of the lessons affected their interactions and expression and their acquisition and uptake potential in these lessons is presented and discussed. Chapters 5 and 6 are particularly focused on the second and third research questions. Chapter 7 synthesises the three sets of findings to identify and expand on three major themes arising from the study, followed by the identification of future research directions.

Chapter 2: Literature Review

Two cross-disciplinary research areas are of particular relevance to the study: a) classroom interaction and discourse, and b) language acquisition. The first, classroom discourse and interaction patterns, shape the environmental conditions in which children express and learn at school. The second, children's language acquisition and development, is directly and indirectly influenced by environmental conditions in which the child is located (Ellis & Barkhuizen, 2004; Hoff, 2006). The literature review is divided into two sections which encompass and interlink the three sets of variables in Figure 1. Section 1 examines literature related to classroom interactional and discourse patterns and variables of both teacher and students. Section 2 examines literature specifically related to students' vocabulary and grammatical acquisition and use as a contributor to the linguistic variables in Figure 1. The relevant literature about lexical and grammatical acquisition and use especially in terms of optimising conditions became the focus of the intervention and the participating teachers' implementation during ten weeks between Time 1 and Time 2.

An interactional and discourse model

A number of key classroom variables have been identified as significant in terms of classroom conditions that directly and indirectly impact on the quality and quantity of students' oral expression (Damhuis & Litjens, 2003; van Hees, 2007) and their potential to acquire and use English. These variables fall into two major areas of classroom practice and conditions - the patterns of interaction, and the discourse of interaction, that is, the linguistics of expression. In the classroom, interaction and discourse generally go hand-in-hand, both directly and indirectly influencing and determining the quantity and quality of the individual student's oral expression. What gets expressed, by whom, why and how, depends to a great extent on the environmental conditions provided in the classroom. Simply saying (and doing) is not enough (van Lier, 2004). It is the *quality* of the saying and doing, as well as the *quantity*, and by whom, that is core to the students' language expression, acquisition and learning potential.

Based on identified variables in the literature and on the practice-based knowledge of the researcher, a model of classroom interactional and discourse variables providing optimising conditions to enhance the language acquisition potential and use of Year 1 and 2 students in low-socio economic classrooms was developed (Figure 1). This model became the framework for a review of the literature which in turn formed the basis of the intervention in the study in response to research question 3. What is 'typical' and what is optimal in terms of classroom interaction and discourse patterns and processes, and the expansion of students' oral expression and vocabulary resources are questions at the heart of this study.

Classroom conditions that optimise quality and quantity of oral expression by student

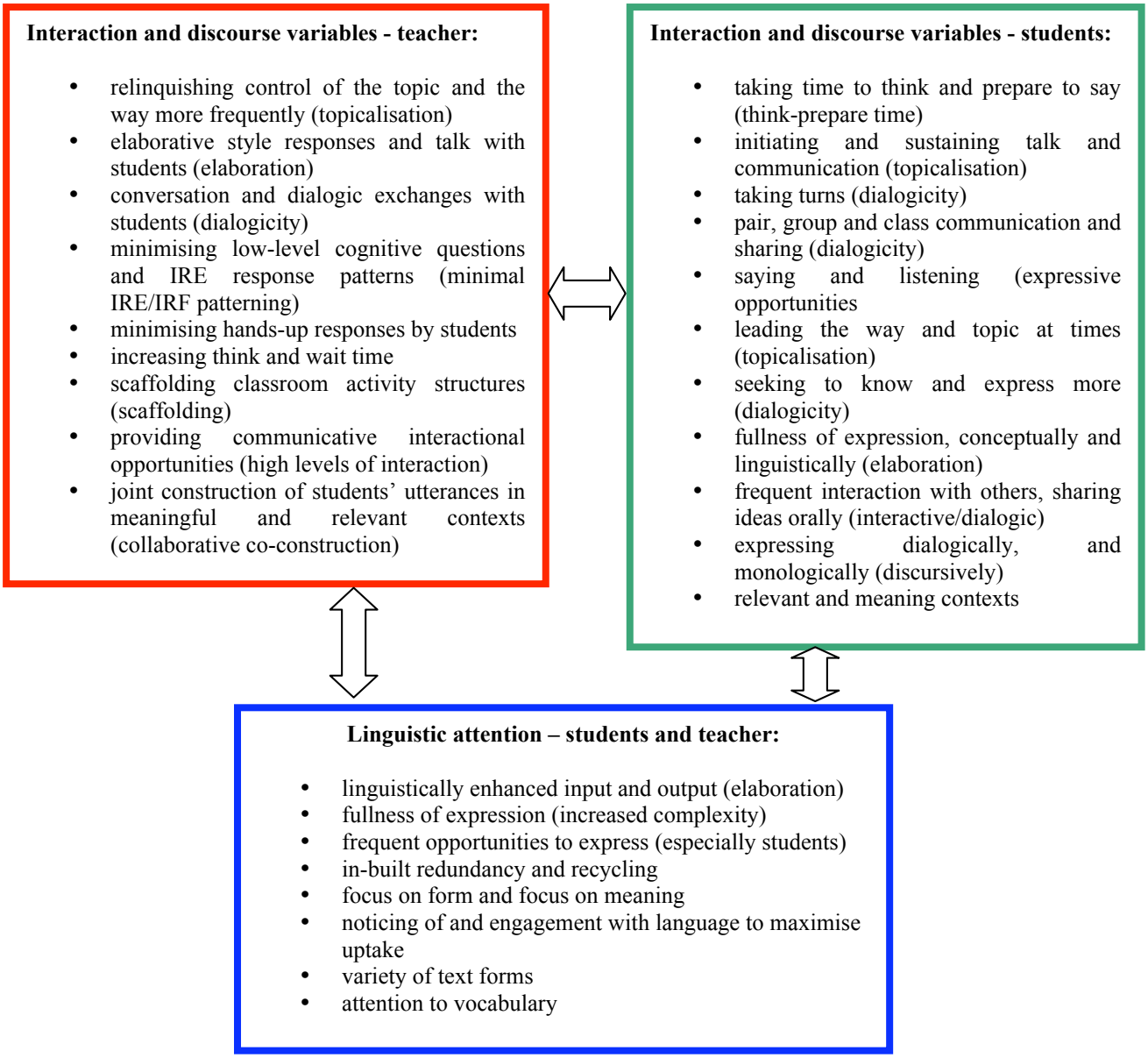


Figure 1: Classroom interactional and discourse variables affecting the oral language resources of 5 – 6 year old students.

Section 1: Classroom interactional and discourse patterns and variables: Teacher and students

Classroom interactional and discourse patterns as related to teacher and students and directly relevant to research questions 2 and 3, include: i) general classroom patterns and culture; ii) teacher questioning and questions; iii) think and wait time; iv) topicalisation; v) classroom activity structures; vi) scaffolding; and vii) turn-taking (Ackers & Hardman, 2001; Alexander, 2003; Cazden, 2001; Damhuis & Litjens, 2003; Ellis, 1998, 2006; Gibbons, 2003; Hardman, Abd-Kadir, & Smith, 2008; Verheoven, Biemond, & Litjens, 2007).

Classroom discourse is construed5 by and operates within powerful social, psychological and linguistic networks, that is, the classroom interactional and discourse patterns in which the teacher holds ultimate decision-making power and control over task, activity, context and topic. With a focus on students as expressive participants, Ellis and Barkhuizen (2005, p.289) suggested that critical questions included: 'a) *What* do (they) say? (i.e. the content of their talk); b) *How* do they say it? (i.e. the linguistic form they use); c) *Why* do they say it? (i.e. the conscious and implicit ideological meanings they express); and d) *When* do they say it? (i.e. the opportunities they have (or take) ….)' These need to be taken into account in order to gain insights into classroom conversation and the oral discourse of students.

General classroom patterns and culture

These teacher-focused questions include considerations about the culture and values that influence and drive classroom interaction and discourse patterns. Alexander (2003) described the place of talk in teaching and its framing values. Teachers in France, Russia, Britain and America articulated and enacted three versions of values – individualism – a view that knowledge and expression is personal and unique; community – that learning and doing is collaborative in a climate of sharing and caring; and collectivism – learning together rather than in small groups, with common ideals and knowledge (Alexander, 2003, p.25). New Zealand classrooms, it would appear, align with Alexander's data on British classrooms where 'one-to-one monitoring, with private and often whispered exchanges' (Alexander, 2003, p.27) are prominent – individualistic and community values. In British classrooms 'mistakes' were 'embarrassing' and teachers strove to minimise public 'mistakes' and avoid the child 'losing face'. The emphasis tended to be on needing to express 'correct' answers and on teacher approval. In contrast, in Russian classrooms problems and 'mistakes' were in the public domain to be engaged with alongside 'correct' or preferred responses. Collective and public discourse engagement dominated.

A critical difference between conversation in British and American classrooms and French and Russian classrooms has been noted by Alexander (2003). He made a distinction between dialogue and conversation – that is, classroom conversations as being teacher-managed sequences of 'unchained two-part exchanges', and classroom dialogue which 'seeks to chain exchanges into meaningful sequences' (Alexander, 2003, p.29). Where Russian teachers highlighted their role in creating and sustaining a dialogic classroom, British and American teachers operationalised classrooms where conversation was 'sharing' and being 'democratic', allowing voices to be heard, rather than a strategic expansion of meaning-making. Whether the orientation is more towards self-expression or more towards collaborative, collective expression, both the Russian and British / American pedagogical

[5] Understanding, representing and acting on reality (Halliday & Matthiessen, 1999)

values and patterns recognised that oral meaning-making is a worthwhile - endeavour in the classroom, with the potential to expand students cognitively, socially and linguistically. It would appear that the critical difference between Russian and British / American orientation is in the pedagogical pathways pursued by the teachers in their respective contexts.

Conversation, dialogue, discourse, talk, are variously used and interpreted terms. Alexander (2003), for example, differentiated between conversation and dialogue in the classroom. Jenlink and Carr (1996), on the other hand, used the word conversation as an overarching term, differentiating more specifically according to broad purposes – problem solving negotiation and exchange; exchanging of viewpoints; and transcending or transforming mindsets. They identified four types of conversation: dialectic i.e. debate and logical argument; discussion i.e. transactional exchanges of viewpoints and meanings; dialogue conversation, that is, the creation of a collective mindset; design conversation i.e. dialogue that goes beyond the accepted and assumed. Jenlink and Carr (1996) noted that transcending and transforming conversations and conscious collective community dialogue are rare in school contexts. Dialectic conversation dominated, at its core, 'distilling the truth'.

Carr's differentiations of the type of conversations evident or possible in the classroom, can be compared with an analysis of 'real life' oral language usage developed by Greenbaum and Svartvik (1990) based on spoken samples of English speaking adults in London collected over 30 years of sampling.

		conversation	face-to-face	private/non private
			electronic	audio only
	dialogue			audio + visual
		public discussion		
spoken				
		spontaneous		
	monologue		to be spoken	
		prepared		
			to be written	
		talks		
		news broadcast		
written	for spoken delivery	stories	face-to-face	
		scripted speeches	electronic	audio only
		plays / drama		audio + visual

From 'The London-lund corpus of spoken English' by S. Greenbaum and J. Svartvik, 1990, http://khnt.hit.uib.no/icame/manuals/LONDLUND/INDEX.HTM. Copyright 1990 by S. Greenbaum and J. Svartvik. Adapted.

Figure 2: An adapted configuration of Greenbaum and Svartvik's oral text classification

The components of the analysis could well describe key spoken language usage in the classroom. Greenbaum and Svartvik's oral text classification encompasses Blum-Kulka's (2004) two key social and cultural domains of oral discourse, as explained below - discursive literacy text, 'written to be spoken', and conversational oral text or dialogicity. Conversational texts, according to Blum-Kulka (2004), are concerned with competence in dialogicity and turn-taking. To be competent in conversational exchange involves a mental alertness at a number of levels, including 'the ability to interpret and formulate speech acts in a range of direct and indirect forms and to initiate and maintain

topics of talk .... (with) relevance, clarity, informativeness, and manner' (Blum-Kulka, 2004, p. 192). Dialogicity is described as topically related, understandable contributions; utterances that provide as much (but no more) information as is required; in an appropriate style and structure; with the response 'tuned' to the force, intention and content of a previous utterance; responding and contributing so that the topic and interaction remains cohesive; and with an awareness of context and the other's perspective. Such conversational exchanges, as will become evident later in the review, are not the norm in most classrooms and teaching and learning sequences.

Discursive oral texts, on the other hand, can be described as interpreting and constructing extended discourse; using appropriate text form and staging; constructing well-structured and sequenced, meaningful stretches of autonomous discourse that are sufficiently 'decontextualised', that is, beyond the here and now; pitching the level of explicitness tuned to the audience's degree of familiarity with the topic in hand; and appropriate in style and structure according to the situation and text purpose/s (Blum-Kulka, 2004, p.192). In the classroom, while a wide range of spoken text types and processes occur, conversational and discursive literacy oral texts tend to dominate.

A consideration of the features of 'natural conversation' and 'typical' classroom conversation highlights the contextualisation of language use. In examining the features of 'natural conversation', Sacks, Schegloff, and Jefferson (1974, pp. 700-701) identified the following comprehensive list of features: speaker change recurs, or at least occurs; one party talks at a time; occurrences of more than one speaker at a time are common, but brief; transitions (from one turn to the next, with no gap and no overlap, are common; turn order and size is not fixed, but varies; length of conversation is not specified; relative distribution of turns is not specified in advance; the number of parties can vary; talk can be continuous or discontinuous; turn-allocation techniques are obviously used (for example, addressing a question to another party, or self-selecting to talk); various 'turn- constructional units' are employed (from one word long to sentence length utterances); and repair mechanisms exist for dealing with content and linguistic errors.

A comparison with typical classroom conversation patterns shows that classroom and 'real world' conversations are different realities. Numerous studies show that conversation is highly controlled in the classroom (e.g. Chin, 2004; Consolo, 2000; Cullen, 1998; Nystrand, Galmoran, Kachur, & Prendergast, 1997; Sinclair & Coulthard, 1975; Tsui, 1987). 'Typical classroom unilateral decisions occur because the teacher usually follows a plan of action in agreement with their views of teaching and learning and the aims and course objectives' (Consolo, 2000, p.92). Control of topic and management of interaction is mostly by the teacher, unlike the negotiated and participatory nature of daily discourse outside the classroom. The classroom is unlike natural, everyday contexts in that participants generally do not engage in conversations that are transforming and transcending.

In describing discourse culture in the classroom, Cazden (2001, p. 82) noted the following: a) teachers have the role-given right to speak at any time and to any person while students have restricted rights and opportunities in this regard; b) frequently the teacher chooses to direct the verbal traffic – raising hands, selecting someone to speak; and c) teachers nominate student speakers 88% of the time, however, of the rest of that time, half is actually spontaneous "non-legitimate" speaking, and of that proportion, only half is actually accepted or even welcomed. Sacks et al.'s (1974) 'natural conversation' features are unlikely to be evident in such a culture.

Classroom talk, as Ellis (1998) suggests, is more accurately described as 'speech acts, questioning behaviour, negotiation, exchange structure, topic control' (p.145). Ways of saying, exchange of information, completion of task or activity are the 'core goals' of classroom discourse, according to Ellis (1990), the organisation of discourse is the 'framework goals', and ways of addressing and interaction are the 'social goals'. All three converge to drive discourse topic and 'the way', and all three are typically largely controlled by the teacher in the context of classroom.

If classroom discourse were to be more like 'natural' or 'real life' everyday discourse, it would be negotiated exchanges, depending on here-and-now interpretations of and by speaker/s and listener/s. 'Natural' conversation 'obliges any willing or potentially intending (speaker) to listen to and analyse each utterance' (Sacks et al., 1974, p.43) in order to sustain meaning connections. Overwhelmingly, cross contextual classroom discourse studies reveal that teachers do most of the talking in classrooms and lessons, taking up at least two thirds of the total talking time in classrooms. Students, on the other hand generally have very limited time to converse in the classroom as in 'real life' conversation, primarily responsive using utterances and short answer responses, rather than engaged in connected discourse and more dynamic expression of ideas and thinking.

A small study by Makin (1996) explored how leadership style in early childhood education (ECE) affected quality interaction between and among teacher and children. Three leadership styles - democratic, laissez-faire and authoritarian, were examined in relation to four semantic features, namely: a) the kind of questions that were asked; b) types of evaluations offered children; c) types of commands used; and d) the types of information offered children. Democratic leadership dominated ECE centres, however, Makin concluded that a mixture of authoritarian and democratic appeared to be most conducive to optimising children's quality interaction, cognitively and linguistically, in ECE settings.

Whereas classroom discourse studies are numerous in one sense, what is 'typical' has been derived from relatively few studies in comparison to the literally millions of classrooms and teaching and learning sequences that occur at any one time across the world. Some studies (e.g. Boyd & Maloof, 2000; van Lier, 1984; Nystrand at al., 1977) suggested what has been identified as 'typical' may not be generalisable. Ready-made systems of coding and categorising classroom conversation and

interaction patterns may overlook or ignore the dynamic participation patterns 'and the work language is made to do' warned van Lier (1984, p.168). The nature of the classroom is specific, that is, it is an environment where the main purposes are to instruct and inform (Sinclair & Coulthard, 1975).

A closer examination of teacher talk shows commonalities in the verbal behaviours of teachers described and categorised variously (e.g. Sinclair & Coulthard, 1975; Long, 1983; Malamah-Thomas, 1987; Chin, 2006). Boyd and Maloof's study (2000) identified teacher role categories into questioner, affirmer and clarifier, comprising 71% of teacher talk time, and clarifier, summariser, reflector, sharer of personal experience, and answerer, comprising the other 29%. Of the latter, summariser and reflector dominate. In this study, the teacher as affirmer occurred most frequently, serving to encourage and support student contributions, as well as validating differing meaning and interpretation possibilities. They suggested it 'reflects the potential importance of teacher in encouraging students to use their personal resources to make meaning' (Boyd & Maloof, 2000, p. 177).

In Warren-Price's (2003) action research study on his own teaching, teacher talk was categorised into teacher as questioner, instructor, explainer, eliciter, corrector, answerer, clarifier, repeater, or praiser. Analysis of teacher talk revealed 40% taken up with explanations, 15% instructional, 10% display and inferential questions and 8% error correction. Only 6-8 % of teacher talk was elicitation which potentially triggers a more dialogic discourse response. The study also revealed a wide gap between how much he thought he talked in the classroom (20-40% of the time) and how much he actually did (on average between 69-79% of classroom time, offering students minimal response opportunities and 'little or no student initiative or control over learning' (Warren-Price, 2003, p.10). The perception and reality gap was considerable. This study typifies other cross–curricular studies showing similar patterns in teacher talk, for example, in language arts, science, social sciences, and physical education, and is consistent with earlier claims.

Based on observation of classroom behaviour and analysis of lesson transcripts, Bowers (1980) identified six categories: questioning/eliciting, responding to students' contributions, presenting/explaining, organising/giving instructions, evaluating/correcting, and establishing and maintaining classroom rapport. Cullen (1998) used these in his analysis of quantity and quality of teacher talk, advocating that the categories 'are firmly rooted in the reality of classroom… and based on what it takes to be communicative in the context of the classroom (Cullen, 1998, p.186).

The categorisations above analyse teacher talk or utterances as discourse and pedagogical acts in order to manage or stage classroom discourse. The role of the teacher in classroom interaction and discourse also needs to consider the sociocultural staging of these deliberate and spontaneous acts into episodes of teaching and learning. Before examining this through a wider lens, two major areas

related to teacher talk are discussed, namely: a) questioning as the second most dominant category of teacher talk, and b) cross cultural variance in the amount and type of teacher talk.

Teacher questioning and questions

Teacher questioning and questions is widely studied, with a strong emphasis placed on question styles and types. The types and manner of these impact directly and indirectly on classroom interaction and discourse patterns. For children lacking confidence and fluency in oral expression, how and when teacher questioning is used in the classroom, and the amount of time given to preparing and responding to teacher questions, may serve to open or close down their expressive potential. In a review of research and literature about classroom questioning 1990-2002, Cotton (2001) found questioning was the second most dominant teaching method, with teachers spending between 35-50% of teaching time posing questions. Others report similarly that teachers' initiations are predominantly in the form of questions (e.g. van Hees, 2005; Johnson, 1990; van Lier, 1998; Long & Sato, 1983) and responses mainly some form of judgement or correction.

Question generation and asking good questions pre, during and post reading has long been held to support and promote reading comprehension. 'Questioning opens up possibilities of meaning' (Gadamer, 1993, p.375); 'Questioning is a powerful strategy for building comprehension' (Mantione & Smead, 2003, p.55); 'Good questions lead to improved comprehension, learning, and memory of the materials among school children as well' (Craig, Sullins, Witherspoon, & Gholson, 2006, p.567).Thus, asking questions, primarily by teacher, and also as a student strategy for higher levels of engagement, cognition and expression, is pedagogically valid.

The dominance of IRE/IRF sequences where 'I' is most frequently in the form of a question, is the result of a complex matrix of underlying cultural, cognitive, pedagogical, and linguistic factors - reasoned and habitus. On average, the teacher in the contemporary classroom asks 300-400 questions per day (Brualdi, 1998) - the teacher works 'hard' cognitively and linguistically, shaping and posing questions. Of the 300-400 questions a teacher might pose in a day, the majority of these are what Wilen (1991) referred to as low-level cognitive questions - 60 percent only recall of facts, 20 percent procedural in nature. Pedagogically, teachers explain that questions 'keep the lesson' moving along. In the minds of teachers, asking questions is an enabling process (Brualdi, 1998; Morgan and Saxton, 1991), keeping students actively involved in lessons; arousing interest; helping students develop an enquiry mind set; offering students the opportunity to openly express their ideas and thoughts; widening the lens as students hear different explanations by peers; helping pace the lesson and moderate student behaviour; and acting to reinforce, clarify, and affirm - an evaluative, embedding, review tool.

Open or closed questions can be further classified relative to the type of thinking stimulated: memory or convergent questions (closed), and divergent or evaluative thinking questions (open). Along these lines, Blosser (1990) developed a category system for questions: closed - limited number of acceptable responses; open - greater number of acceptable responses; managerial - facilitate classroom operations; and rhetorical - re-emphasize, reinforce a point.

Other question classifications have also been developed. For example, question classification based on Bloom's taxonomy (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956), ranges from 'lower-order' questions, namely, knowledge and comprehension type questions, often referred to as display and referential type questions, to 'higher order' synthesis and evaluative type. An example is Erickson's (2007) classification of three types of questions: factual - ones that are with definitive, and comparatively simple answers; conceptual - ones that delve deeper and require more sophisticated levels of cognitive processing and thinking; and provocative - ones that entice, explore, extrapolate, scope new possibilities. Higher order or conceptual and provocative questions are least likely to be used by teachers, as is discussed below.

The two most frequently occurring question types used by teachers across age groups, subject areas and teaching and learning contexts (Cotton, 1998; Lynch, 1991; Shamoossi, 2004) are display and referential questions. Display questions are those to which the questioner knows the answer, and referential questions, used to elicit interpretation and judgement. Of these, Shamoossi (2004) found that 82% of all questions used by EFL teachers were display questions. Among other findings, he found that display and referential questions occur quantitatively and qualitatively differently within the teaching sequence, depending on task, activity and students being worked with. Lynch (1991) found that 76% of all questions asked were information-seeking questions. Other studies (Breen, 1998; Cotton, 1998; Long & Sato, 1983) show that high-level cognitive questions are infrequent in number and are often addressed and responded to by 'more capable' students. On the other hand, display and referential questions in an IRE/IRF sequence, some argue (Cullen, 1998), act to scaffold and support students to acquire the vocabulary and syntax of the target language, and so, are pedagogically and contextually appropriate, a 'natural' part of the act and processes of classroom teaching and learning.

In a study of teacher questioning and feedback in the science classroom, Chin (2004) developed a diagrammatic representation of the purposes of teachers' utterances in IRF iterations. Initiation, usually in the form of a question, sought to 'draw out', elicit, probe and extend students' thinking; and 'cue and provoke', to clarify, prompt and challenge students' responses (Chin, 2004, p. 1336-1337). Feedback to student responses was primarily reinforcing in nature, affirming, restating and consolidating student responses. Typically, IRF sequences were in series, with feedback in the form of a comment or statement immediately followed by question in a probing and extending sequence.

A large study by Nystrand et al. (2001), using data from 872 observations in eighth and ninth grade language arts and social studies classes in Midwest America, provides intriguing insights into the role of questions in a lesson sequence. The study analysed a number of dynamic variables affecting dialogic shift and discussion in lessons, including authentic questions posed by teachers, student questions, and use of high level cognitive questions. Authentic questions posed by teacher were ones where the asker had no pre-specified answer in mind. These questions acted as dialogic bids inviting students to contribute new ideas and to share what they think and know. Such questions were different in purpose and outcome to display and referential questions posed as 'test questions' for student recall and review of the 'known' – in Lotman's (1988) terms, characteristic of 'univocal' teaching. Authentic questions posed by teacher resulted in longer dialogic spells, greater student engagement and increased uptake. Students' questions, which were almost always authentic, occurred more frequently in higher track classes, (and infrequently in lower track classes), and also acted to spur on dialogic discourse. Questions that generated generalisations, analysis, or speculation - higher level cognitive questions, also promoted dialogic discourse. Discussion and dialogic spells were more likely to occur when preceded by questions with high cognitive demand and student initiated questions, and in higher track classes. The Nystrand study, analysing the use and role of questions in the classroom, deepens understandings and challenges assumptions and generalisations about questions as vehicles for opening up or closing down classroom dialogicity.

Other than van Hees's (2005) study, only one other New Zealand based study has been found that specifically investigated the effects of teacher questions. This small scale study (Moore, Knott, & McNaughton, 1989), in the context of morning news in a junior class in a suburban primary school, was interested to further investigate claims that questions impeded children's oral expression (e.g. McNamara, 1981; Dillon, 1982). The effects of reducing teacher questions and increasing rates of teacher pauses, praise and directives appeared to have no adverse effects on student utterances or behaviour. Dismantling the questioning scaffold on the students' spoken words and expansions replaced by an increase in praise and encouragement resulted in an increase in children's contributions and verbal expansions. At the time of this study, morning news talk was (and still might be), a common daily practice in junior classrooms, with teacher questions a dominant pattern of the discourse in this context.

The use of questions in the classroom is an embedded part of the pedagogical culture and staging of teaching and learning sequences. In comparison to 'natural conversation' or oral discourse, the use and type of questions dominant in the classroom discourse could be described as 'unnatural'. Of most interest in this regard is whether the posing of questions in the classroom serves to enable rather than disable students' voices and thinking, whether question use can or does open up dialogic exchanges that are transforming and transcending, as well as fulfilling important core, framework and social goals (Ellis, 1990), whether questions act as bids to trigger meaningful exchanges of thinking and

content, or whether they close down or constrain the expressive potential of students. Core considerations in this study are: What differences in oral language use and discourse patterns occur when classroom question use and type is rearranged in terms of who, what, when, how and why questions are posed? Would these differences contribute to the expanded meaning-making potential of five and six year olds in the classroom?

Think and wait time

Directly related to question use in the classroom is think and wait time. The amount of wait time in question-response sequences (IRF/IRE sequences), where 'I' is a question, 'R' is response, 'F' is feedback, and 'E' is evaluation, inevitably affects students' responses, both in terms of potential quality of the response, and as an indicator of the cultural / pedagogical mores in which teacher and students operate. Think time, 'uninterrupted periods of time to process information, to reflect on what has been said, observed, or done, and to consider what their personal responses will be' (Stahl, 1990, 2005, p. 1), and wait time, the amount of time a teacher and other students wait before reacting or responding to someone's expression of thought (Rowe, 1974), coincide. Co-occurring wait time and think time, according to Stahl (1990) 'contributes significantly to improved teaching and learning in the classroom' (Stahl, 1990, p.1).

These periods of silence may range from as little as 3-5 seconds to 2-3 minutes in length, and are context dependent and largely teacher controlled. However, the dynamic nature of classroom discourse and interaction, and the nature of teaching i.e. moment-by-moment decision-making by teacher, overt and covert, deliberate and spontaneous, makes implementation of appropriate periods of silence challenging. Typically, students are given one second or less to think, shape up their ideas, and respond and share (Cazden, 2001; Rowe, 1974). Cotton (1988) found the average wait time post teacher posed questions to be one second or less. Students who were perceived to be slow or typically unresponsive were given less time than those perceived to be more capable. These more capable students were more frequently given at least 3 seconds to respond to lower cognitive questions, and directed a greater number of higher cognitive questions. Her study found that students seemed to be more engaged and perform better, the longer the wait time. These are significant findings in terms of the teacher perception of student capability linked to extent of time given for thinking and responding. Those students who are likely to need more appear to quantitatively and qualitatively receive least.

When think time is increased, which by association means that wait time is increased, and when thinking is made explicit – it's 'what we do here', studies (Cotton, 1988; van Hees, 2005; Stahl 1990) have found students are more able to carefully and calmly formulate thoughts, ideas and responses. They realise they can and need to, that it is interesting and worthwhile to do so and that thinking, while requires effort, is neither too hard to do, nor threatening. They are less hesitant to share later on, and for the more confident and fluent, are more considered in what they prepare to and ultimately say.

are more focused on the topic and task in hand. Students become more conscious language users and shapers - more aware of their mental resources and how to convey these to others, and are more able to identify and shape up quality thoughts and ideas.

Cross-cultural variance in the amount of teacher talk

While more generalised patterns of teacher talk show similar trends regardless of culture, it would appear the quantity of teacher talk varies depending on the culture of discourse participants in the classroom – ('culture' taken here to mean as related to ethnicity and country of origin). By way of example, Pontefract and Hardman (2005) reported on a study of classroom interaction and discourse in Kenyan primary schools. This study revealed minimal interaction and dialogicity, teachers characterised as dominantly 'univocal' (Lotman, 1988; 1988a). The teacher talked 90% of the time; student utterances, when they occurred, were three words or less, there were no student-student support opportunities given, and the prevalent teaching approach was teacher explanation, question and answer responses of which only 1% are thought-reasoning questions, and recitation. Previous studies in Botswana (Arthur, 1996; Fuller & Snyder, 1991; Prophet & Rowell, 1993), and Kenya (Ackers & Hardman, 2001; Cleghorn, Merritt, & Abagi, 1989; Merritt, Gleghorn, Abagi, & Bunti, 1992) showed similar teacher-pupil interaction and discourse patterns.

Comparatively speaking, classrooms and lessons observed in the above studies and those observed in other countries have much in common. The IRE or IRF (teacher initiation - student response - teacher evaluation and feedback) sequence is the typical discourse pattern and dominates (Cazden, 2001), yet there is considerable variance in quality and quantity of teacher talk. How these unfold in a lesson is affected by political and social frameworks, the personal values and responses of classroom participants - teacher and students, the topic in hand, and the moment-by-moment events and tensions that exist within any interaction between people.

In the New Zealand context, linguistic and cultural dualism or pluralism in primary schools is increasingly marked and diverse. Immigration figures alone reflect this diversification. In 2001–02, people approved for residency immigrated from many parts or regions of the world where English is not a first or national language – North East Asia (22% of total figure), Southern Asia (16% of total figure), Middle East and Africa (15% of total figure), the Pacific (14% of total figure), the Americas (3% of total figure), and including some immigrants from Europe. In Year 1 and 2 classrooms in New Zealand low socio-economic schools where cultural diversity is the norm, differences between students' home and school interactional and discourse patterns will inevitably impact in some way on their expressive participation in class. 'Typical' home and classroom interactional and discourse patterns of Pasifika and Maori students and the language of schooling, may well be mismatched (e.g. McNaughton, 1996; Painter, 1999; Schleppgrel, 2004).

Classroom activity structures

Teaching, episodic in nature, is determined by contextual factors such as pedagogical goals, selected processes and activities, available tools and materials, with language, interaction and discourse the central meaning-making tool. 'Language and the physical, social and symbolic world are interconnected in a myriad of ways' (van Lier, 2004, p.72) to comprise teaching episodes. Because of the dynamic nature of this interconnectedness, 'a complex network of complex systems' (van Lier 2004, p.53), each lesson is like no other. The sociocultural structuring of teaching episodes impacts directly on the meaning-making potential of students, and hence is an important consideration in this review.

'An activity structure is a socially recognisable sequence of actions ….. and can be realised in many ways, by many actual sequence activities', according to Lemke (1990, p.198). Lemke's (1989) influential text, *Using language in the classroom*, examines the activity structure of science lessons, managing the tension between the thematic content of the science lesson and the discourse which mediates the thematic development of the science knowledge and learning. In his later work, Lemke (1990), and others (e.g. Chin, 2006; Scott, 1998), analysed the thematic development of science understandings through the lens of discourse development. While IRE/IRF moves were dominant, they were interspersed by numbers of other meaning-making acts that do not adhere to the Sinclair and Coulthard (1975) IRF/IRE structure. As Cullen (1998) and van Lier (1998, 2004) have pointed out, teaching and learning and the ensuing interaction and discourse patterns that take place as a result are much complex than such simple IRF/IRE structure might suggest.

Three possible frameworks of analyses, namely, Long's (1983) interaction hypothesis model - verbal exchange, input and feedback, negotiated modification, further input, acquisition or learning; Malamah-Thomas' (1987) pedagogic interaction model - continuous cycles action and reaction chains in an effort to make meaning; and Sinclair and Coulthard's (1975) discourse structure model - opening move (initiation – I), answering move (response – R) and follow-up move (feedback – F), as in the simple IRF/IRE structure mentioned earlier, were examined by Chin (2006), also suggesting her own. She concluded that all three are inadequate in terms of depicting or explaining the external (interpersonal) and internal (intrapersonal) acts of meaning that take place in the classroom. She proposed a two-way, continuous process with memory, inner speech as central to both teacher and learner input and output, and classroom interaction and discourse as the mediating tool. While all these frameworks and models remain theoretical however, they offer a useful lens by which to view the reality of thematic content and discourse moves in the classroom in the pursuit of learning.

At the applied level, Henning (2004) explored a conceptual tool for opening up discourse in order to trigger learning and enhance thinking. He presented what he calls the 'bow-tie' model of lesson activity structure in order to optimise classroom discourse, content learning, and higher order

thinking. The opening move or framing discussion is a very open discussion before introducing technical concepts at the beginning of a lesson. The guided phase or conceptual discussion is where the teacher scaffolds the students through teacher-student and student-student discussion towards new learning. The applied move or application discussion is when students are offered increased opportunities to talk in order to explore the implication and application of the introduced concept(s). Based on actioning the model in twelve cross discipline, cross age classrooms, he suggested it offered a practical template to transform the pattern of classroom interaction and discourse. Accordingly, the 'bow-tie' model served 'the foundational, stable, formal, closed, and the dynamic, generative informal, open reasoning processes associated with a discipline' (Henning, 2004, p. 66).

In a similar vein, Scott (1998) identified three activity features that act to mediate or scaffold the classroom discourse in science education. The three include discourse as a) pedagogical intervention, where the focus is on different forms of discursive intervention; b) authoritative and dialogic, acts of transmission of knowledge and opportunities to explore and develop meanings dialogically; and c) teacher talk and scaffolded assistance, mediated intervention. Both Henning's and Scott's conceptualisations included teacher as transmitter, teacher as scaffolder, and teacher and students as dialogic partners.

Attempts to explain and distinguish the activity structures of teaching episodes and their impact on the interaction and discourse patterns, is clearly important. The co-occurrence of communicative dualism, involving 'both transmission or univocal aspects, and dialogic, thought generating aspects' (Scott, 1998, p. 63), recognises the importance of active participation through discourse and shared meaning-making, especially by students, (the convergence of the interpsychological and intrapsychological), as well as the need to communicate content principles. Van Zee and Mistrell (1997) suggested reflective discourse, that is, students expressing their own thoughts, comments and questions; teacher and students engaged in questioning exchanges; and students exchanging thinking between themselves in order to understand own and others' thinking (van Zee & Minstrell, 1997, p.209), results in enhanced and transformed teaching and learning.

Dialogicity or dialogic approaches to pedagogy is gaining some ground in the United Kingdom (Lyle, 2008; Alexander, 2006). Bakhtinian (1981) notions of dialogicity suggest that such classroom discourse promotes communication that has a 'genuine concern for the views of talk partners and effort is made to help participants share and build meaning collaboratively' (Lyle, 2008, p. 225). Alexander's "Talking for Learning Project" (Alexander, 2004) in 34 schools in England, set out to foster dialogic teaching to include five aspects of dialogic talk (Alexander, 2004; Lyle, 2008). Underpinning the project's focus on dialogic teaching were the following: a) dialogue is not just a feature of learning but one of its most essential tools; b) children's answers can never be the end of a learning exchange (as in many classrooms it all too readily tends to be) but at its centre; and c)

dialogue is an important means by which pupils actively engage and teachers constructively intervene (Smit, n.d).

Cumulative evidence from the project schools (Alexander, 2004) identified marked changes in pedagogical orientation: less bidding (children competing with each other to answer questions by putting their hands up) and more nomination (when teachers direct questions to named children) in order both to reduce the dominance of exchanges by certain children and to enable; and teachers a) targeting their questions more precisely with children's individual capacities in mind; b) fostering extended exchanges with the same pupil rather than moving from one pupil to the next after a single question; c) establishing ground rules for the conduct of collective talk; by inviting children to comment on others' responses; d) changing the balance of closed and open questions; e) resisting the natural urge to fill silences after questions, and instead waiting for children to think about their answers. Children were a) beginning to listen to rather than talk at or past each other, and turn-taking was becoming sequential rather than overlapping; b) speaking within small groups or whole classes more loudly, clearly and confidently; c) venturing ideas, and offering speculation and hypothesis, rather than seeking to spot and provide the 'right' answer. Less able children were taking a more prominent part in lessons than they would have done previously, children were being encouraged to help each other to respond to the thinking challenges set, and teachers and children were talking about talk (p. 21-22). Alexander claimed the 'trends were no flash in the pan but have been sustained' (p. 22), nurturing collaborative classroom dialogue and inclusiveness, and enhancing students' expressive and cognitive expansion (Alexander, 2004; Lyle, 2008; Watkins, 2005).

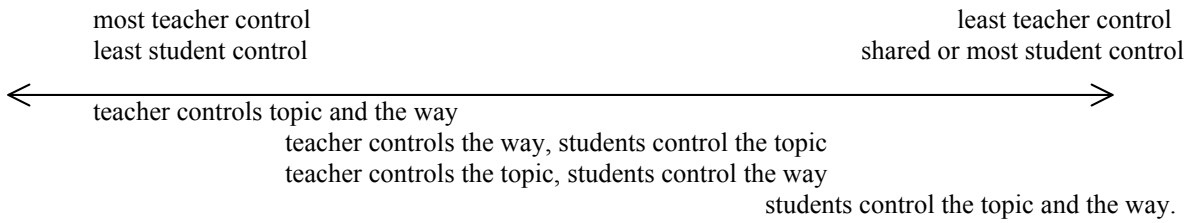
An interesting further perspective on classroom discourse positioning and activity structure discussions is the question of selection and suitability discourse configurations and groupings. Swain et al (1999) explored different modes of talk – whole class, pair work and individual, examining optimum conditions for participant effort and productiveness of ideas in science. Whilst whole class talk is more focused and more productive in terms of total ideas, (covering) a greater percentage of possible ideas, it suffers from low participation rate. Individual work demands the greatest effort but produces idiosyncratic results. Pair work,…being both participatory and productive,…..(keeps) students on task…and provides most opportunity for development variation and changes in students' ideas' (Swain, Monk, & Johnson, 1999, p.397). Numerous other studies support these findings (e.g. Bruffee, 1993; Cohen, 1994; Jacobs, 1998, 2002; McDowell et al., 2002; Palinscar et al., 1987; Swain & Lapkin, 2001). On the other hand, Sukemune's (1980) study of effects of verbalisation on learning for five year olds working in changed and unchanged pairs noted that it was not simply a matter of physical changes or arrangements, but that training and clear instructions were needed to provide optimal conditions for information transfer no matter the exchange arrangement or configuration.

It would appear that individual, pair and whole group learning situations offer students optimal thinking and participatory opportunities. However, discourse 'richness' and engagement, discourse set up for maximal negotiated exchanges, discourse addressivity, that is, the word in relationship to others (Bakhtin, 1986), where the 'word cannot be assigned to a single speaker' (Bakhtin, 1986, p.121) appears to be optimized when especially in pair and whole class discourse.

Topicalisation - control of topic, activity and 'the way'

Related to activity structure frameworks and perspectives is the aspect of control in the classroom – who gets and holds control, when, how and why, and how this affects the meaning-making potential of students – 'topicalisation control'. Van Lier (1998) argued that learners need topicalisation and participatory discourse control opportunities before they can experiment 'with language at the cutting edge of their linguistic development', (and in order to develop) academic text structures' (Ellis, 1998, p.156). According to this view on learning, students engaged in topicalisation, that is, participatory in controlling the way and the topic, potentially expand their meaning-making capacities.

Four different types of classroom interaction are identified by Van Lier (1998, p.156), according to the extent of teacher or student control of what is being talked about, and the way the topic is talked about. A continuum from least to most teacher control spans as follows:



From 'The classroom and the language learner' by L. van Lier, p. 156. Copyright 1998 by L. van Lier. Adapted.

Figure 3: Types of classroom interaction

These topic and activity processes, structures and control are contextually determined and influenced by both teacher and students. Along similar pedagogical perspectives, Ellis (1998) made the distinction between the 'topic' and 'activity' in relationship to classroom talk and dialogue, namely: 'activity' as focused on how things are said and done; 'topic' as focused on what is talked about. He suggested learners are more likely to achieve control of discourse when the teacher 'permits' or focuses on 'topicalisation'. His analysis of classroom discourse showed that when 'novice' language users, young children or L2 learners, were able to initiate and 'control the way, ….receiving assistance in expressing and developing own ideas', that is, the provision of 'acquisition rich' text, 'the resulting text and interaction contributed to language acquisition and learning' (Ellis, 1998, p. 155). Research by Damhuis and Litjens (2003) alluded to earlier, where the teacher and students engage in small circle talk and work, with the students largely leading the topic and way, and the

teacher primarily in the role of participant scaffolder, is an example of student topicalisation control in action.

Ultimately, the decision to hold onto or relinquish more or less control to the student, when to and how, lies largely in the hands of the teacher. Pathways and intentions may break down because a mismatch occurs between teacher and student/s, that is, the meaning-making connections in the two-way process of communication breakdown in some way. This is illustrated in a study by Myhill and Warren (2005), aptly titled *'Scaffolds or straitjackets? Critical moments in classroom discourse'*, which explored how teachers use and respond to critical scaffolding moments in the classroom. Disjuncture occurred more often than tuned in connectedness. Teacher responses to continually arising critical scaffolding moments tended towards creating confusion for students, or ignoring or dismissing student responses, with a dogged determination on the part of the teacher to steer the discourse. The pattern of discourse in the study matches the 'orderly classroom' (Edwards & Westgate, 1994), namely teacher control or topic and the way, thus ignoring or inattentive to student engagement and unexpected discourse possibilities and potential.

Combined and specific variables in Figure 1 that have been discussed thus far include: 1) a general consideration of discourse culture and the contextualisation of speech acts use and types; 2) the use of questions in the classroom; 3) think and wait time; 4) classroom activity structures; and 5) topicalisation – the control of topic and the way in classroom interaction and discourse. Central to these and wider considerations about classroom interaction and discourse is the question of learning – how and why students learn or 'uptake' (Gass, 1997), after all, learning is a core goal in the classroom. Scaffolding is integral to the notion of learning and the process of language acquisition and use, and so is integral to expanding the meaning-making and expressive capacities of Year 1 & 2 children.

Scaffolding

Scaffolding or assisted performance, based on Vygotsky's (1978) theoretical notion of the zone of proximal development (ZPD), the distance between the actual development level of the learner and the level of potential development through collaboration with, and guidance by, a more capable 'other', is at the heart of learning and acts of teaching – 'to find the manner in which aspirant members of a culture learn from their tutors … to understand [and express] the world' (Bruner, 1985, p.32). A major feature of ZPD is its dialogical structure, that is, the more and less capable or knowing participants engage in dialogic utterance exchanges in order for the 'novice' to reach contextual meaning and capability.

Cheyne and Tarulli (1999) explored the notion of a first, second and third voice implicit in dialogue and ZPD. On the one hand, ZPD involves first voice, (the magistral, superiority voice), and second

voice, (the novitiate voice). In classroom teaching and learning acts, the first voice is primarily the teacher, the second the student/s. In simple terms educationally, scaffolding might be described as assisting a student to step beyond their current capabilities or understandings to a higher or new level. It implies a more capable 'other' or interlocutor as scaffolder. The student is strategic in planning, setting up, and maintaining the scaffolding structure (both building up and dismantling the scaffold) as required; alert to the student's readiness point/s, providing a next step scaffold to move him or her on; and tuned into the appropriate moment to relinquish or dismantle the scaffold (van Lier, 2004). The teacher plays a key role as scaffolder, implicit and explicit. This scaffolding role may, however, risk slipping into the teacher as controller, as the dominant sayer, thinker, doer, as if students are vessels to be filled; or at the other end of continuum, a naturalist approach to developmental patterns and points, whereby each student's skills and abilities will blossom and unfold naturally as the student develops

In the classroom, as van Lier (2004) suggested, scaffolding and proximal processes and spaces are multi-dimensional. Not only does scaffolding occur through timely assistance from a more capable or knowing other, usually the teacher, but scaffolding also occurs, to a greater or lesser extent, when a student interacts and shares with an 'equal' class peer/s, teaches less capable or knowing peers, and scopes, scrutinises and structures his/her inner resources. Growth and expansion operates within a complex network of resources and interactions emerging and converging.

Where learners cannot and do not scaffold each other explicitly in a classroom setting, where a rich 'semiotic budget' (van Lier, 2004) is not available from peers, the teacher, task selection and organisation of interactional learning become increasingly significant. Ellis (1998) suggested that where learners do not differ significantly in language and learning proficiency, task-based, whole class, 'lock-step' collaborative scaffolding is possible. The challenge is to so construct interaction that as far as possible each learner is a contributor and participant, and able to operate in their zone of proximal development.

A feature of scaffolding and ZPD that is pedagogical and dialogic in the sense of taking the learner to a new (and independent) point of understanding and action, comprises utterance and meaning exchanges, essentially involving turn-taking by two or more participants in order to connect and communicate (Gibbons, 2002). 'Pedagogic scaffolding' (Bruner, 1983) in relationship to classroom discourse is characterised by two-way interaction or turn-taking in which the direction of talk is determined by all participants, which sees learning as development with assistance and guidance from adults and more competent peers. 'By raising (each student's) awareness of what they are saying and how they are saying it, and coming up with more (appropriate or effective) ways of saying that thing' (van Lier, 2004, p.90), the classroom teacher and students are participants in the 'pedagogic

scaffolding' of discourse (Bruner, 1983). The 'experts' and 'novices', in Vygotskyian terms, are multi-variant, dependent on the points of interaction and context or topic in hand.

Mediation (Bakhtin, 1981; Cole, 1996; Gibbons, 2003; Halliday, 2003a; Vygotsky, 1978; 1999) is central to scaffolding and a child's transformation into a meaning-making, expressive participant in socio-cultural exchanges between self and others, assuming 'that mind emerges in the joint mediated activity of people..(and)….that individuals (the child) are active agents in their own development but do not act in settings entirely of their own choosing' (Daniels, 2001, p. 13). It is integral to first and second language principles of acquisition (Carroll, 2007; Gass & Selinker, 2008; Hoff, 2006; Pienemann, 2007; van Lier, 2004) - for example, the interactional model of second language acquisition (Gass & Mackey, 2006) where mental activity mediates between available input and comprehension; and the effect of high levels of mutual engagement, responsiveness and contingent replies to children's verbalisations on first language acquisition and a child's quality and quantity of expression (Hoff, 2006). In wanting to interpret and explain, and more importantly, influence children's contextually bound and unique language development, acquisition and use in context of classroom, deep level examination of the proximal processes available to each individual child is needed.

Turn-taking

Both in terms of the dialogue and scaffolded conversations, and classroom discourse and meaning exchanges, turn-taking is a contributing variable to overall interaction and discourse patterns in the classroom. 'All real and integral understanding is actively responsive…. the speaker talks with an expectation of a response, agreement, sympathy, objection, execution, and so forth…..' (Bakhtin, 1986, p. 69). Such active responsiveness and dialogue is or should be 'the stuff' of classroom interaction and discourse. For a conversation or meaning exchange to be actively responsive, participants negotiate and manage some kind of balance to establish and maintain involvement and engagement.

The intricacies of exchange systems have been described by Coulthard (1992) and colleagues in *Advances in spoken discourse analysis*. In a revised description of classroom exchange structures, Coulthard and Brazil (1992) presented five classes of exchange: teacher eliciting exchange, teacher directing exchange, teacher informing exchange, student eliciting exchange, and student informing exchange. Of note is the absence of student directing exchange. Perhaps, when these classes of exchange co-occur, (including the suggested sixth), variably in balance, dependent on lesson staging and activity structure and context, then turn-taking, discourse engagement and active responsiveness can achieve higher levels of meaning-making potential.

Compared to 'natural' conversation, getting a turn in the classroom is largely not a negotiated or collaboratively managed affair between students and teacher, but rather one in which the teacher holds power and control over who, when, what and why utterance turns occur. Student selection of turn and utterance expression is not usual practice and classroom reality (Cazden & Mehan, 1989; Coulthard & Brazil, 1992; Mehan, 1979). Cazden (2001) warned, however, that relinquishing control by the teacher may still result in a form of inequality or imbalance, namely, student self-selection is led and dominated by the more confident, engaged, risk-taking student/s, and by those more linguistically resourced. For young children, participating in conversation and dialogue requires both awareness and experience in turn-taking, inside and outside the classroom. Where this awareness and experience is limited or different to that of the classroom, young students' meaning-making potential may be compromised or minimised, ultimately impacting on the quality and quantity of their oral language expression.

It is clear that the balance and utterance exchanges that more closely mirror 'real life' conversations are not a hands-off affair in the 'unnatural' (in one sense) discourse contexts of classroom. A move away from the minimalist and restrictive Sinclair and Coulthard (1975) IRF/IRE exchange structure, to a more dialogic IRE/IRF structure, can create actively responsive communication and turn-taking between and among student/s and teacher. It would appear that it is not the IRF/IRE structure in itself that militates against dialogically active and responsive turn-taking communication in the classroom, but rather how I, R, and F or E is staged so that students and teacher are strategic turn takers. By creating opportunities and spaces for shared and varied oral expression by as many in the discourse community as possible, in which turn-taking strategies play an integral part, meaning-making potential is opened up. Dialogue opportunities and spaces alone are not enough, however. Both the quality and quantity of speech utterances in the classroom, the *what, how, why* and *when* (Ellis & Barkhuizen, 2003) of student and teacher talk, are pivotal turn-taking considerations.

Several features of curriculum conversation that 'promote coherent and cumulative conversations', namely, quality, quantity, relatedness, and manner, have been described by Applebee (1994, p.4). *Quality* considers content and materials, and relevance of turn-taking in conversation; *quantity* is a tension between too much and too little - circular and dynamic conversation between and among teacher and students across a range of topics and texts to sustain interaction and collaborative dialogue; *relatedness* recognises the cumulative nature of conversation, whereby there is a sense of direction and coherence, albeit that conversation is unpredictable and spontaneous; *manner* ensures that students are involved metacognitively, cognitively and linguistically to support a natural sequence of thought and language in feedback and feed-forward, externalisation and internalisation sequences.

Classroom discourse that has these features of quality, quantity, relatedness and manner optimised, has paid attention to strategies and organisation, and topic and direction control, as shared

undertakings by teacher and students. The teacher can ease students towards more autonomy or democracy in controlling the way and direction, in negotiating who says, when, and what gets said and responded to. When turn-taking is approached as a collaborative undertaking, students are scaffolded to gradually take more control and recognise the benefits of being active and contributory, and when the teacher is at ease with the interaction and discourse taking its course, without premature intervention or taking control, then more student initiated direction and control in gathering and sharing can become stimulating, dynamic and of significant value cognitively, socially and linguistically (van Hees, 2005).

Turn-taking, alongside and in combination with other variables discussed in this review, contributes to the subtleties of classroom interaction and discourse patterns. Meaning exchange in the classroom is a complex network of complex systems and processes, yet the goal can be simply put – for learning to occur.

Summary

A number of key points important to this study emerge from the review of the literature on classroom interaction and discourse patterns. First, in classrooms where student conversation and dialogue is valued and is the dominant classroom pedagogy, students are more likely to participate in extended two-way conversational exchanges. In classrooms where collective and public discourse dominates, students as well as teacher are contributors to topic and the way. Where classrooms are minimally dialogic, tending to more towards a culture of individual responding to teacher questions, prompts, and response expectations, students are less likely to have opportunities to express, nor to hear a wide variety of others express.

In the New Zealand context at least, it would appear that classroom culture and ways of operating are minimally dialogic, and orientated towards a philosophy of individualism rather than collaborative communication (Alton-Lee, 2003). If students' oral language and meaning potential is to expand, especially that of students who enter school disadvantaged or below norm in oral expression, a shift towards a dialogic, collaborative classroom culture would seem to be advantageous.

Second, classroom conversation or dialogue is different in nature to 'real world' conversation. A young child that enters school at age five has engaged in meaningful conversational exchanges, mostly on a one-to-one basis, and participated in the conversation of others through listening. These conversations are usually negotiated, participatory, meaning-making exchanges. In the classroom, this same child is likely to encounter a discourse culture that is dominated and controlled by the teacher, and where the majority of teacher utterances are explanatory, instructional, or correctional, and student responses are brief and in direct response to teacher requests or expectations. Other 'typical' features of classroom interactional and discourse patterns evident in the literature include a) the large

percentage and dominance of student directed teacher questioning, b) the minimal amount of think and wait time given students before responses are elicited or expected, and c) the almost total control of topic and the way by the classroom teacher. Each holds significance in terms of creating classroom conditions that reduce rather than expand the meaning-making potential of students. Unfortunately, it appears these typically occurring features result in reductive rather than expansive discourse engagement.

Recall and procedural questions, rather than open-ended, exploratory questions that open up thinking and expression, are used in most classrooms. There is a dominance of low-level cognitive questions. Students' expression in the classroom is largely in response to teacher initiated display questions. Furthermore, few students are given or take the opportunity to respond to these questions, thus each student's expressive mileage, engagement and participation is minimal. Extended periods of think and wait time contribute significantly to the quality and quantity of students' responses and contributions, yet despite this evidence, the amount of think and wait space and time given students remains minimal in most classrooms.

In line with other interactional and discourse patterns in the classroom, control of topic and the way is teacher dominated. Second language acquisition literature, as well as studies examining classroom activity structure and participatory learning, point towards shared topic and pathway control by teacher and students as supportive towards developing and expressing ideas, resulting in richer text use by all involved. The necessary relinquishing of control and topic by teacher, accompanied by carefully scaffolded teaching and learning activity structures, challenges teachers' preferred pedagogic strategies. However, the literature examining control of topic and the way appears not to be extensive and scattered across disciplines. Most are small sample studies in science, mathematics and reading classrooms or lessons. Given the importance of opening up discourse space and opportunities for students to express in the classroom, and given that meaning-making optimally combines the known and the new in terms of each student's resources, a greater sharing of control and the way by teacher and student would appear to be an important contributor to expanding the meaning-making potential of Year 1 and 2 students in low socio-economic schools.

Third, it would appear that turn-taking options most usually used in classrooms are teacher and whole class, and teacher and individual student. Utterances expressed by teacher and student in these turn talking events are brief by student and extended by teacher. Small group discussions are also used in classrooms and involve students taking expressive and organisational roles, but findings vary as to the extent and effectiveness of expanded oral expression by each student in the group. Studies examining more general classroom turn-taking, point towards optimised discourse and expressiveness when pair and whole class turn-taking opportunities are both available and used frequently and in combination. Evidence does suggest, however, that explicit attention needs to be given to training

students on how to take turns, and what quality of the turn-taking utterances might comprise, to result in high quality discourse.

This first section of the review has examined variables related to classroom interaction and discourse patterns as related to both teacher and students as identified in Figure 1, and considered some of the complexities, concerns and gaps in research pertaining to classroom interactional and discourse patterns in relation to the research questions guiding this study. Section 2 examines two interlocking and inter-influencing aspects of Year 1 and 2 language acquisition – their lexical and grammatical expansion.

Section 2: Year 1 and 2 students' language acquisition: Lexico-grammatical

Vocabulary acquisition and use

Vocabulary knowledge, receptive and productive, is not only intimately linked to a young child's comprehension and expressive potential, but to their ability to fully engage and participate in acts of teaching and learning. The first section of the review examines vocabulary knowledge and use as an influential variable on a child's capacity to understand and express meaning. A child's vocabulary knowledge predicts their overall verbal ability, and is strongly linked to comprehension, both oral and written texts. "It (vocabulary knowledge) is a strong predictor of academic success, and plays a central part in cognitive development, especially in relation to literacy and learning" (Dockrell & Messer, 2004, p.35).

Sternberg (1987, p.30) stated 'one's level of vocabulary is highly predictive, if not deterministic, of one's level of reading comprehension', and that 'vocabulary is probably the best single indicator of a person's overall level of intelligence'. However, a correlation is not an explanation of the relationship. 'The instrumentalist hypothesis argues that learning words causes comprehension. The verbal aptitude hypothesis suggests that general intelligence is the most significant factor in vocabulary learning and comprehension. The knowledge hypothesis argues that both vocabulary and comprehension result from increases in knowledge. This section of the review considers these hypotheses in light of what is known about the vocabulary knowledge and use of young children entering school at age five in low socio-economic primary schools. Of prime importance in the study is how the expressive vocabulary acquisition relates to environmental conditions, particularly for children in low-socio-economic communities and families.

Disparities between high vocabulary and low vocabulary children become evident as early as age 36 months. By the time children enter school at five this early age vocabulary gap remains and persists throughout the primary grades. Over the first two years of schooling in New Zealand, information about the child's vocabulary is gathered primarily through unsystematic observation, and the use of oral and written language assessments. SEA - School Entry Assessment (Ministry of Education,

1999), JOST - Junior Oral Language Screening Tool (Keaney, Britain, & Margaret, 2003), and the Six Year Net or Six Year Observation Survey (Clay, 2002) are most frequently used to assess five and six year old children's language and meaning-making resources, including vocabulary (Ministry of Education, 2001). Each offers a means of identifying at least some information about a child's vocabulary knowledge and use on entry to school, and in later months in their first two years at school. In the New Zealand School Entry Assessment data, for example, there are significant differences between vocabulary scores of Pasifika students, and Pakeha and Maori children (Hattie, Irving, Mackay, Brown, Mcfall, & Clay, 2005), with Pasifika students showing considerable disadvantage in their language acquisition progress.

What can be done to address and close this identified language and vocabulary gap of students in low-socio economic schools is an essential question in this study, and one that is also of intense research interest nationally and internationally (Baumann & Kame'enui, 2004; Hiebert, 2006; Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002; Nation, 2006; Pearson, Hiebert, & Kamil, 2007).

Teachers in low socio-economic schools frequently report on the vocabulary limitations of their students and the effects this has on their students' meaning-making potential in general, and in particular in specific curriculum areas (van Hees, 2005). This concern and teachers' recognition that paying attention to vocabulary in the classroom is important is well documented (Blachowicz, 1987; Blachowicz & Fisher, 2000; Johnson, Pittelman, Toms-Bronowski, & Levin, 1984; Konopak & Williams, 1994). However, concern and a sense of importance about the role vocabulary plays in a child's meaning-making potential do not necessarily translate into difference-making language and vocabulary acquisition practices and increased acquisition.

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Some overseas studies have noted concerns about teachers' knowledge about vocabulary assessment and instruction. A recent example is concerns raised by Pearson et al. (2007) who posed three key questions in relation to vocabulary assessment in the context of American schooling, namely: 'What do vocabulary assessments (both past and current) measure? What could vocabulary assessments measure? What research will we have to conduct over the next decade in order to develop and validate both vocabulary research and, ultimately, vocabulary instruction?' (p.283). They proceed to identify

and discuss available evidence and issues arising as related to these questions. A concern raised by Blachowicz and Fisher (2001) was whether the vocabulary instruction provided by teachers was sufficiently rich to impact on vocabulary comprehension and acquisition. Others have noted no explicit attention given at all to vocabulary instruction and acquisition in the classroom (Beck, McCaslin & McKeown, 1980). These and other concerns are ones that have been, and still are, at the forefront of research interests about vocabulary.

Three inter-related cross-disciplinary areas where vocabulary is extensively discussed and researched, of direct relevance to children in the early years of schooling, are reading, oral language and second language acquisition. Word meaning, vocabulary acquisition, lexical knowledge, and closely related phonological awareness and knowledge are consistently topics of intense interest and debate in reading research (Baumann & Kame'enui, 2004; Blachman, 2000; Cunningham, 2001; Neuman & Dickinson, 2001; Scarborough, 1989; 2001). The relationship between a young child's oral language, vocabulary knowledge and use (semantic, syntactic and lexical), and their conceptual development, attracts on-going research interest (Dickinson & Tabors, 2001; Gelman, 2006; Snow, 2006). Additionally, second language acquisition research (SLA) has focused on the role and acquisition of vocabulary in learning an additional language, and the inter-relationship between first and other language vocabulary (e.g. Ellis, 1989; 1995; Hulstijn, 2001; Nation, 2000; 2001; Read, 2000; 2004; Schmitt, 2000).

What do we know about the vocabulary journey of a young child, pre-school?

At around 18 months, a child's vocabulary expands exponentially, especially in naming vocabulary (Camaioni, 2001; Gopnik & Meltzoff, 1997). It is a time when children 'fast map' vocabulary (Mervis & Bertrand, 1994) to mean the rapid acquisition of words in the context of verbal exchange - a series of vocabulary spurts interspersed with slowing down periods (Dale & Goodman, 2005). As a child moves through their first three to four years of development, the rate of vocabulary acquisition and the fast mapping of words is influenced primarily by his/her contextual conditions. In optimal conditions, a child would typically expand his vocabulary resources from around 500 at age two years, to around 2000-4000 word families at age five (Nation, 1993).

Influencing factors on young children's vocabulary development and growth

A young child's lexical journey is intimately linked to the prime caregiver/s or in the case of Year 1 and 2 students, to a combination of their lexical journey in the classroom, orally and in literacy, and their environmental conditions of family or home. A conclusion reached by Evans, Maxwell and Hart (1999) in their study of young children's speech was that 'greater verbal responsiveness to children's speech was positively associated with high levels of language diversity uttered by parents to their children, irrespective of social class' (p. 1021). In a study of child vocabulary competence, Bornstein, Haynes and Painter (1998), in line with other studies examining a young child's vocabulary

acquisition (Camaioni, 2001; Hart & Risley, 1995), found that maternal verbal behaviour had a direct effect on the vocabulary competence of the child. The children of mothers who exposed their children to richer vocabulary, using a greater number of word families and longer or elaborative sentences, who talked more with their child, and were engaged in sustained times of verbal interaction, were more verbally competent than those whose mothers were less verbal, elaborative and interactive. Particularly significant to this study was the finding that the syntactic development and vocabulary growth of 34 children aged between 54-60 months was in children whose prime caregiver and pre-school teacher speech was syntactically more complex (Huttenlocher et al., 2002). This syntactic complexity involved not only multi-phrase sentences heard and used by the child, but a more frequent occurrence and use of lower frequency vocabulary.

While class or socio-economic differences are used to explain maternal verbal intelligence and interactional differences and the vocabulary acquisition variance between young children (Hart & Risley, 1995; Walker, Greenwood, Hart, & Carta, 1994), neither can be used as an explanation or excuse for not attending to quality vocabulary acquisition in the classroom. Classroom verbal conditions and teacher-student interactions, at the very least, should aim to align with conditions known to be optimal for vocabulary acquisition.

What vocabulary size do young children have?

Estimates of vocabulary size vary based on methodological measures used (Graves, 1989; White, Graves, & Slater, 1990). Nation (1993) suggested that approximate estimates of the word size of a five year old child are around 4000 to 5000 word families. This is a generalised estimate and does not take into account the variability of vocabulary size between five year olds on entry to school. Biemiller and Slonim (2001) identified an estimated average word of 3,500 on entry to school, increasing to 5,200 by the end of grade 2 (approximately Year 3 in New Zealand education terms), increasing again to 8,400 by grade 5 (approximately New Zealand Years 6-7). They noted a vocabulary range difference between the lowest and highest quartile of as much as 50%. Across seven years of schooling, the lowest quartile acquired approximately 1.5 root words per day, while the highest quartile acquired 3 roots words per day.

Previously, Graves (1989) had found that when students were grouped according to ability in grades 2, 4, and 6, based on teacher rankings, the word recognition and knowledge range was 59% for lower ability, 64% for middle, 74% for upper ability students. In comparing spoken to written vocabulary recognition and knowledge, differences were insignificant. This was interpreted to indicate the complex interaction between spoken and written vocabulary knowledge, with a number of possible explanations. For example, if spoken vocabulary and written vocabulary increase largely in parallel, attention to spoken vocabulary and rich oral expression might result in an increase in written

vocabulary, or conversely, an increase in reading (written) vocabulary might be dependent on the extent of a student's oral vocabulary.

Despite differences between word size estimates, it is clear that the catch up needed by low-vocabulary students is a huge challenge, and becomes even more so when one considers that high-vocabulary students are exponentially increasing their vocabulary size at the same time as the catch-up effort is occurring. Thus, if, as Nagy and Herman (1987) suggested, a gain of 4,000-5,000 words is needed by low-vocabulary to arrive at the 'no further growth' vocabulary size of the high-vocabulary students, and that the latter in actuality are increasing their vocabulary size by between 1000 to 3000 words yearly, the task of catch up is daunting. Clearly, the considerable differences between the incremental acquisition of words by advantaged and disadvantaged students has serious educational implications. Given this gap between vocabulary advantaged and disadvantaged children becomes evident as young as 36 months of age, is identifiable on entry to school at five years olds, and persists across the schooling years into adulthood (Farkas & Beron, 2004), it is an important matter to be attended to in Year 1 and 2 classrooms in low-socio economic schools.

The place of oral vocabulary

Oral vocabulary at primary school level seems to receive only incidental attention (Baumann, Kame'enui, & Ash, 2004; Biemiller, 1999; 2003; Pearson et al., 2007; van Hees, 2005). This lack of attention to spoken vocabulary at primary school may be due to the emphasis placed on learning to read and write when a five year old child enters school. Oral vocabulary becomes subsumed by vocabulary in print. It may also be due to the lack of opportunity given to students to orally express, as discussed in the first section of this review. Thus, what is not prioritised or given space for in the classroom, namely, expanded oral expression by all, becomes de-emphasised or largely lost. Nagy and Herman (1987) pointed out, '…there is good reason to believe that written context will not be as helpful as oral context in illuminating the meanings of unfamiliar (or new) words. When a child learns a word from oral context, there is rich extra-linguistic context' (p. 24).

It is possible to argue that a lack of attention to expanding children's vocabulary through rich and varied oral discourse and text in the classroom is a grossly missed opportunity. At this point, no studies have been found that explicitly examine the effects of dialogic and orally rich classrooms in terms of vocabulary acquisition. It seems feasible that, just as rich oral text and meaningful oral interaction is a prime source of vocabulary expansion for children in the first three to five years of their lives, so it also should or could be in the next 3 to 5 years of their lives. Is it a question of vocabulary explosion in the early years being a developmental phenomenon which is not replicated at later developmental stages? Or, is it a question of split attention, that is, while the same vocabulary expansion potential exists beyond the early years, literacy emphases in the classroom override oral vocabulary acquisition and use potential?

It may also be argued that vocabulary-rich spoken text is almost always available in the classroom; that students are in a rich environment of vocabulary availability. However, as has been discussed earlier, and as second language acquisition studies have shown (Ellis, 2006; van Lier, 2004), a 'passive oral language' classroom dominated by one speaker, constrains comprehension and noticing. In such classrooms, potentially available 'rich' vocabulary is less likely to be noticed and understood, resulting in low levels of oral vocabulary acquisition.

In the context of American schooling and vocabulary acquisition, Biemiller (2003) commented that current school practices typically have little effect on oral language development during the primary years, suggesting that the level of language used is often limited to what the children can read and write. Such comments resonate in the context of New Zealand early primary school education as well. Pointedly, Nation (1993) said, 'a large vocabulary is seen as something valuable' (p. 115). Such a comment pertains equally to oral text and discourse as to written, yet to a large degree this valuing does not translate into balanced or prioritised vocabulary attention in the classroom.

Grammatical acquisition and use

At the heart of an enquiry into the quality and quantity of English language expressive capacities of five and six year old children in the early years of schooling is a consideration of how language, the lexico-grammar system in particular (Halliday & Matthiessen, 2004), is acquired. The body of knowledge derived from both first and second language acquisition research is extensive, and not without controversy and debate. However, there is general consensus about key factors affecting children's acquisition of language, whether a first or additional language (e.g. Bloom, 1993; Bornstein, Haynes, & Painter, 1998; Ellis, 2008; Hoff, 2006; Huttenlocher et al., 1998).

These factors were discussed by Hoff (2006) in a review of evidence about the nature of environmental and contextual requirements that support and shape language development in children, and the effects of environmental variability in meeting these requirements. Evidence in the review suggested differences between children's language experiences at school and at home as being especially disadvantageous for low socioeconomic status children, who often experience discontinuity between home and school language use. There is well recognised discourse transition that needs to occur when a young child begins on his educational journey through schooling (Christie, 1999; Halliday, 2003b; Painter, 1999; Williams, 2005), where meanings and their expression are more formal and strongly oriented towards literacy-like texts and discourse.

Other critical considerations in Hoff's (2006) review of first language acquisition evidence included that: a) mutual engagement and responsive, frequent, contingent replies to children's verbalisations develop children's syntax more rapidly, b) talk that elicits conversation from the child predicts grammatical development; c) the total quantity of speech addressed to a child is related to general

measures of cognitive and linguistic development; d) frequency and redundancy, recasts and expansion, in combination, are positive predictors of grammatical development, accounting for between 18-40% variance among children; e) children who hear longer utterances in input are more advanced in syntactic development; and f) the more speech heard and produced by a child, the greater their vocabulary resources. These are highly significant findings relevant to this research enquiry.

Elaborated speech and elaborated modification builds semantic and syntactical redundancy (Gass, 1997). She suggested elaborated speech and elaborated modification builds semantic and syntactical redundancy, provides fuller information, affects immediate comprehension information processing and draws in and engages the discourse participants. These input factors provide fuller information, affect immediate comprehension information processing and draw in and engage the discourse participants. Elaboration as described by Halliday (1985) is but one of three categories in the grammatical description of elaborated expression above the clause level (clause complexes), namely, expansion, projection and elaboration, all forms of language extension. In the classroom, these extending elaborative forms when responsively contingent to the child's meaning and message, afford the child language acquisition potential.

Grammaticalisation and the development of linguistic complexity

There is increasing empirical support 'for strong associations between the lexicon and grammar in development' (Marchman & Thal, 2005, p. 152). They suggested that grammatical and lexical development "hang together" with lexical-grammatical continuities as in the Competition Model proposed by Bates and MacWhinney (1987) and syntactic bootstrapping (Weissenborn & Hohle, 2001). Research by Dale, Dionne, Eley, and Plomin (2000) investigating the extent to which vocabulary and grammar outcomes of two year old twins identified the greatest proportion of variance was accounted for 'by shared environmental factors ....69% for vocabulary and 48% for grammar...suggesting an important role for the environment in promoting language development' (Marchman & Thal, 2005, p. 155). In contrast, genetic factors make a relatively weak contribution. This poses a challenging question for the classroom teacher. If the expansion of each student's English language grammar is highly influenced by and dependent upon the environmental conditions of the classroom, with multiple opportunities needed for each student to receive, notice and try out language at his or her 'cutting edge', grammatically and lexically, then how can the teacher cater for such individuality?

During the first five years of a child's life, in the context of a 'rich semantic network', there is gradual emergence of grammatical utterances in accordance with the grammatical structures of the specific language or languages in which one is contextualised. 'There is growing consensus that by the age of three, children have acquired the basic phonological, morpho-syntactic and semantic regularities of

the target language, irrespective of the language or languages to be learned' (Weissenborn & Hohle, 2001, p. vii).

First language and later acquisition studies suggest that age five is a 'frontier age' for more complex grammar acquisition (Berman, 2004; Karmiloff-Smith, 1996; Tolchinsky, 2004). Development towards proficiency in a child's first language is relatively drawn out, spanning well beyond the early years (Carroll, 1971; Singleton & Ryan, 2004; Wells, 1979). Becoming proficient in a new or additional language is also drawn out and complex, conservatively estimated to take a minimum of five to seven years (Cummins, 1981; Garcia Mayo, 2003; Snow & Hoefnagel-Hohle, 1979). The 'frontier age of five' factor, in general terms, suggests a school-age child is cognitively and linguistically ready and able to move along a developmental pathway to increasing proficiency and grammatical mastery.

On entry to school at age five, optimally a child has moved from a pre-grammatical stage, to what Berman (2004) terms grammaticalisation and increasing grammatical mastery. Thus, a five or six year old student would be beyond development of word items, closely tied to immediate and intimate situational contexts. The child gradually has moved from the stringing together of words into simple word groups or sentences - (the pre-grammatical stage), towards a continuum of increasing use of 'rule-bound' structures, with an expanding word base, limited by structural and vocabulary experience and knowledge - (the grammaticalisation stage). This includes moving towards understanding and being able to construct and express groups of words into clauses; syntactically denser structures, using dependent and embedded word groups and clauses; sentences that combine and connect into cohesive, extended text structures; lexically denser text, with increased inclusion of low frequency, domain and topic specific, technical vocabulary; expressing more complex ideas in dialogue, conversation, and discourse exchanges with increasingly imaginative and divergent meanings (Tolchinsky, 2004).

Linguistic complexity in texts as described by Ravid (2004) is composed of two interrelated components: lexical complexity and syntactic architecture, the first defined by lexical density and diversity clause by clause (Nation, 2006; Richards & Malvern, 1997); the second defined by intra-clause and inter-clause length, depth and diversity. The oral texts of the classroom range across the full spectrum of the mode continuum (Eggins, 1994) from most-like-spoken to most-like-written. When there are possibilities for feedback and interaction, and the situation and context in which a spoken text is taking place are more immediate, the language of use is spoken-like in nature (van Hees, 2007). Year 1 and 2 students are likely to be most experienced in such spoken text, characterised by turn-taking, context dependence, dynamic structure, interactivity, open-endedness, false starts, hesitations, interruptions, lexical sparseness, use of everyday vocabulary, having some 'non-standard' grammar, and loosely linked clauses per utterance (Eggins, 1994; van Hees, 2007). At the other end of the continuum is written-like spoken text, where the situation and context are neither

immediate nor have possibilities for feedback and interaction. These are monologic in nature, context independent, closed and pre-determined, drafted and polished, lacking features of spontaneity, have a highly organised structure, lexically dense, with a selection of prestigious, technical, topic-specific, low-frequency vocabulary, have fewer clauses per utterance or sentence, and a denser text structure (Eggins, 1994; van Hees, 2007). Related to both, Halliday (2009) wrote: 'In a written culture, in which education is part of life, children learn to construe their experience in two complementary modes: the dynamic mode of the everyday commonsense grammar and the synoptic mode of the elaborated written grammar' (p. 49). The latter in particular is the linguistic acquisitional challenge that Year 1 and 2 students face.

Mastery of the written-like spoken text and more 'sophisticated or proficient grammar and use of language is protracted and complex (....). It involves a child gradually increasing his linguistic range to 'command…. (a)…full range of expressive options' (Berman, 2004, p. 9), a cognitive readiness to command these expressive options, and a growing cultural awareness and sensitivity to language choice and use, appropriate to context and situation and the 'norms' of a given speech community. Grammar acquisition is an experiential, learned, practised and 'maturation' configuration. Berman (2004) noted that it is not enough to 'know' the relevant linguistic form, but that 'the cognitive load' of more complex grammar and language use is linked to a readiness to mean and acquire.

Language learning, according to Halliday (2003b), is a social semiotic system of meanings. As the child builds his lexico-grammatical system as a result of meaning exchanges, he is constrained by a coding framework but not imprisoned by it. Thus, language structures are cultural artefacts learned in the process of social interaction. Three aspects of children's language development were identified by Halliday (2003b): learning language, learning through language and learning about language. A child moves through three phases in learning language, he suggested. At the earliest stage a child construes meaning through a protolanguage, followed by a lexico-grammatical phase shaped by increasing access to and demand for extended, more complex meaning exchanges, gradually moving into an on-going phase of grammatical complexification. As the child moves into the schooling environment, the teacher becomes 'locus parentis' and 'language development has now become the object of conscious attention' (Halliday, 2003b, p. 314). Cumulative acquisition of grammatical structures by the child, construed through school-based meaning exchanges 'typically proceeds by way of ...."innumerable small momenta"' (p. 319). The third aspect, learning about language, is when the child consciously notices, enquires about and is assisted to explore linguistic lexical and grammatical use and possibilities. The three phases of language development are more or less optimised as the result of the child's own capacity to mean and construct, based on the quality and quantity of words he hears and engages with.

Key acquisition principles

An ecological perspective and approach to language learning 'emphasises the notion of emergence' (van Lier, 2000, p. 26), recognising not only that languages shift and change, either through internal processes, or through external pressures and social processes....in flux rather than static' (van Lier, 2004, p. 85), but that young children's lexical and grammatical trajectory of development is similarly fluctuating, consciously and unconsciously taking shape through the communicative environment in which he exists.

While the principle of frequency is recognised as influential and important in learning and language acquisition (Gass & Mackey, 2002; Ellis, N. C., 2002; Long, 1996), it remains a controversial and complex area of study. Ellis (1994) suggests that the creation of multiple opportunities for relating form and function are important in reinforcing strong associations. When linguistic units are recycled and repeated, learners have recurring opportunities to 'notice' and modify, the linguistic units become semantically more transparent, thus freeing up cognitive resources. A study of very young children between the ages of 2-3 years by Valian and Casey (2003) suggested that plentiful and frequent 'input' increases the chances that the child 'collects' data. Because much of the available input is 'lost', bypassed, or ignored, through lack of or divided attention, multiple exposures give multiple opportunities to notice, 'take in' that which previously was not.

Frequency needs to be viewed within the broader framework of second language acquisition and processing as put forward by Gass and Mackey (2003), and Hulstijn (2003). While frequency is a necessary component and of importance, it is difficult to gauge the extent needed, and to pedagogically scaffold frequency and repetition in such as way that the learner remains engaged within his 'goldilocks zone'[6], cognitively and linguistically. Teachers of young learners especially are keenly aware of the need for and role of repetition, recycling, salience and frequency in learning and language development, yet conscious of the pedagogical challenge involved when there are 15 or more students in the class (van Hees, 2005).

Studies by van Patten (1990; 1996) provide evidence that beginning learners cannot concurrently attend to meaning and form, aligning the first of the key definitional features identified by Doughty and Williams (1998), namely: 1) the need for learner engagement with meaning to precede attention to the code; 2) the importance of analysing learner's linguistic current repertoire to identify the forms that require attention, and 3) the need for intervention to be brief and unobtrusive. Wong's (2001) study examining modality and attention to meaning concludes that aural modality (speech) is more processing 'effortful' than written, and learners attend first to meaning, lexical items next, before attention to form (Wong, 2001; van Patten, 1990).

[6] A term referring to operating in a learner's zone of proximal development (Vygotsky, ; Tharp & Gallimore, 1988) – that is: not too easy, not too difficult; not too fast, not too slow; not too often, not too infrequent; with not too much support, not too little.

Ellis (2001) categorised three types of focus on form, or focus on language (van Lier, 2004) or focus on semiosis (Halliday, 2009) in recognition that the full spectrum of language aspects is involved, including phonology, morphology, meaning, pragmatics, and discourse. To optimise language acquisition, Ellis proposed incorporating focus on form that is a) implicit in nature; b) production orientated, involving noticing; c) text rich so the learner is exposed to rich available 'input' and some linguistic form, but primarily focused on meaning; d) 'input'–'output' orientated; e) meaning and text enhancing; and e) meaning-driven and meaningful to the learner. Incidental and planned linguistic attention, and implicit input flood, 'where attention to form (may arise) out of activities that are primarily meaning-focused', optimise a learner's acquisition potential (Ellis, 2001, p. 2).

Current schematic views and models in second language acquisition (SLA) interaction, frame language learning as a process of input – intake – developing systems – output, with the learner's brain processing, accommodating, restructuring, accessing and eventually producing (e.g. van Patten, 1999; Gass, 1997; Cadierno, 1995; Izumi et al, 1999). Swain (1995; 2000) argued it is the learner's externalisation (or 'output') of language, primarily through speech, that stimulates and opens up one's semantic, grammatical and pragmatic repertoire. A Vygotskyian, ecological perspective would suggest that interactional 'output', or externalisation of one's inner mind through speech, (or according to van Lier, 'outcome'), needs to be more than conversational, negotiational opportunities. Being 'immersed' and surrounded by seemingly available 'meaningful language' is inadequate to develop the learner's externalisation of thought and meaning through language. Attention, noticing, effort, 'forced' interactional output, 'stretching' one's current language repertoire, facilitated explicitly through a mediating tool - person, task or activity, serve to activate and 'grow' knowledge building dialogue and construct linguistic knowledge (Swain, 2000).

The comparative effects of simplification and elaboration on the learner's developing grammar in a study by Leow (1993) suggested that the learner's existing language and knowledge system defines the internalisation and externalisation processes. External manipulation, that is, pre-modified or scripted simplified text (Mackey, 1999; Gass & Varonis, 1994) inadequately addresses the individuality of learners and their unique cognitive and linguistic frames. Responsive, contingent meaning exchanges from a more competent other offer a learner 'cutting edge' (ZPD) lexical, grammatical and cognitive meaning potential. Perhaps more than any other aspect of interaction with students in a class, contingent responses that attend to a child's meaning and message as well as the linguistics of their expression and is elaborative in quality, poses the greatest challenge to teachers (van Hees, 2005).

Affordance, van Lier (2000; 2004) suggested, can replace the notion of 'input'. Language is not 'a process of representing linguistic objects in the brain on the basis of input' (van Lier, 2000, p. 253), but rather the environment provides the opportunities for the active and activating nature of language.

Language, and in particular speech, is not merely the 'vehicle' for perception and action, but speech, perception and action are united. van Lier (2004) sums up language affordance as '.....natural or cultural, direct or indirect.... relations of possibility between language users. They can be acted upon to make further linguistic action possible. For a young language learner, each linguistic act in which he is participant, either receptively or expressively, offers language acquisition potential. 'By raising (each student's) awareness of what they are saying and how they are saying it, and coming up with more (appropriate or effective) ways of saying that thing' (van Lier, 2004, p. 90) [the notion of grammatical pedagogic scaffolding (Bruner, 1983)], is critical to optimising the language acquisition of the Year 1 and 2 students on the cusp of grammaticalisation growth spurts.

In a class of 25-30 students the teacher can only 'approximately know' each student's grammatical competency and language repertoire. A pre-requisite to 'know' more exactly is to be highly attuned to each student's oral and written understandings and expression, for it is primarily this that provides this 'approximate knowledge' (van Hees, 2007). Unless the teacher opens up opportunities for each student to 'display and utilise' his or her current language grammar, there is thin evidence on which to base implicit and explicit nurturing and nudging.

Summary

The review of the literature related to classroom interaction and discourse by both teacher and students, and the enhancement of the students' language acquisition potential, foregrounds the complex nature of environmental conditions influencing the quality and quantity of students' oral expression and interaction in the classroom. It appears there are considerable gaps in research in regard to the classroom interactional and discourse pattern variables and their effect on five and six year students in the first two years of schooling. Research specifically examining these effects on five and six year old students in low socio-economic communities is minimal. Only two studies (van Hees, 2005; Moore, Knott, & McNaughton, 1989) have been found in the New Zealand primary school context. Van Hees's (2005) study in five primary classrooms of a mid-socio-economic school, including a new entrant and two year three classes, revealed similar interactional and discourse patterns to that identified in the literature. This pilot study offered beginning insights into the nature of classroom interactional and discourse patterns in New Zealand primary classrooms. Work by Damhuis and Litjens (2003), specifically focused on small group interaction involving young students constrained in Dutch oral expression, although pedagogically oriented, is one of the few international found.

Classroom teaching and learning is primarily a sociocultural act, and as such, involves, or should involve, fullness of participation and meaning making by all participants in the classroom community. The environmental conditions of interaction and discourse in the classroom appear to be fundamental to optimising students' quality and quantity of language acquisition and use. The review reinforces the

realisation that the teacher holds prime responsibility and power in creating the optimising opportunities and means needed by students. How teaching is related to learning and how the classroom environment is related to constraining or opening up expressive richness and fullness, are key considerations. While much is known, integration of perspectives and understandings is lacking, especially in the context of five and six year olds in low socio-economic schools. The challenge of investigating this significant yet under-researched area and the complex layers involve formed the basis of the research study of this thesis.

Chapter 3: Methodology

Introduction

The study investigated the expression and responses of individuals in the naturalistic setting of classroom through observation, a methodology designed to closely examine the relationship between teaching and learning, which Kennedy (1999) suggested is 'the most central issue in teaching, and ….also the most perplexing and least understood' (p.528). Observation of classroom interactional and discourse patterns, and quality and quantity of students' utterances, is 'naturalistic' in the sense that the interaction and discourse to be observed are not 'set up' or pre-organised, but occurring dynamically in the context of teaching and learning in hand at the time. However, given that the classroom is not naturalistic in that it is a deliberately constructed and construed system, controlled and restrictive in a way that most 'natural' day-to-day interactions and discourse exchanges are not, the study might be described as a semi-structured, naturalistic study. The collected data and information were naturally occurring samples within a controlled but dynamic 'naturalistic', semi-structured system, and not clinically or experimentally elicited (Ellis & Barkhuizen, 2005).

Methodology selection

The study is about a child's capacity and opportunity to express orally. From the child's point of view, their meaning-making capacity and potential is ecologically bound along the nested systems as suggested by Bronfenbrenner (2005). His model proposed a series of nested systems, each infusing and influencing the other, with an emphasis on the linkages between self, immediate others, across settings and across time. This study is situated most particularly in the microsystem, that is, the classroom and lessons, 'the pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and materials features and containing other person with distinctive characteristics of temperament, personality, and systems of belief' (p.119).; and the mesosystem, that is, the framework set each student brings into the classroom which merge with microsystem of the classroom, comprising of 'the linkages and processes taking place between two or more settings containing the developing person ... a system of microsystems' (p.119). It is an attempt to gain insight into the interactional and discourse patterns within the classroom's complex nested systems, to illuminate 'possible truths' and partial realities from which possible theories and practical applications can be derived (Nuthall, 2004).

In educational research situated social processes of classroom need to be explored, not as process-product investigations, but as exploratory, interpretative, explanatory, ethnographic studies that reveal

the complex and multi-faceted realities that are operating at any moment and across moments, in context. It is a recognition that neatly designed experimental studies may serve to mask rather than reveal the unique and different realities of what each child is learning and perceiving. It is with this in mind that the study is grounded in socio-cultural theory, and in particular in ecological linguistics, that is 'the study of the relations between language use and the world within which language is used' (van Lier, 2004. p. 44). Both socio-cultural and ecological perspectives recognise that the physical environment and people's engagement with it and each other is as complex, interactive and dynamic as any other eco-system, and that language is a core mediational, communicative tool.

Investigating the quality and quantity of students' expression in the classroom can be approached from differing angles and perspectives, as is evident from Ellis and Barkhuizen's comprehensive text, *Analysing Learner Language* (2004) – functional, conversational, interactional, error analyses, for example. What is meant by quality and quantity is itself complex. In this study a process-form-function (action-text-role) perspective on language use was taken, with the view to exploring language use as it occurred in a dynamic social system and context. Fundamental to this is the 'complete connectedness of the linguistic and the social' (Christie & Unsworth, 2000, p. 3). The classroom events, processes and phenomena as they interact and inter-relate, and how people's behaviours respond as a result, in this case focused on language use and response, is carried out through selections from sets of choices available in the language system. These choices at an individual level are constrained by the immediate context (context of situation), and by the wider social context (context of culture). Of specific concern in this study was the former, the immediate context of situation - the classroom, physical, material and discursive.

Nuthall (2004) identified a number of criteria to be taken into account in order to 'get at' the immediate context of situation. They include: 1) independent in-depth assessment of what students learn, where 'testing' or more formal assessments are combined with observational and interview data and information; 2) complete, systematic and continuous observational data on individual student experiences in order to capture the ways individuals experience and respond, recognizing that student and teacher perceptions are often different to what is observed; 3) complete and continuous data on classroom activities, that is, recordings over time, recognizing that teaching and learning are continuous and cumulative, and not stable over time and context; 4) analysis based on continuous connections among classroom activities, student experiences, and learning processes, including recordings of private and public social processes; 5) avoid or be wary of aggregation of data across students and across different learning outcomes, which runs the risk of inadequately and inappropriately representing the individual; and 6) explanatory theory, directly and transparently connecting relevant evidence, building from the bottom up, from the individual and specific towards a macro view on reality (Nuthall, 2004, pp. 296-297). These criteria recognize the unique and complex social, cognitive and psychological worlds of the individual, and the context-specific and complex

processes, activities and interactions of the participants in combination. Well-designed observational studies have the potential to meet these criteria to a considerable degree, and thus to more adequately understand and explain the complex realities of teaching and learning processes and participants.

Method selection

'Studying the dialogues of teaching and learning over an extended period time poses serious methodological and theoretical challenges' (Mercer, 2008, p.36), with little guidance theoretically and methodologically, but is required 'if we are to understand the process of teaching and learning' (p.55).

With so many features or categories under consideration, it was necessary to put limitations on what to analyse and to what degree of depth. The point of departure for selecting the specifics of interactional and discourse patterns' analysis and eventual development of the coding schemes used in the study was COLT [Communicative Orientation of Language teaching] (Allen, Fröhlich & Spada, 1984), Systemic Functional Linguistics (Halliday & Matthiessen, 2004) at the lexico-grammatical level, and measurements of accuracy, complexity and fluency as identified by Ellis and Barkhuizen (2005). By combining clause level analysis with interactional, propositional, temporal, hesitancy phenomena, syntactical error judgement, and syllable and word counts, the basis of a coding scheme was developed.

Integral to what to analyse was how to capture the complexities of classroom interaction and discourse, and analyse potentially rich evidence in such a way that the public, semi-visible and private contexts of classroom and students' expression could be revealed. Guided by the work of Nuthall and his colleagues (2000-2004), in order to capture the observed intricacies of classroom interaction and discourse, and students' oral text production, so that retrospective micro-analysis of data was possible, video-recording was selected as the most reliable and manageable method of data collection. There were a number of connected method considerations to be made, including 1) what and how much to record; 2) transcription, 3) what coding scheme and analytical tool to use; and 4) ethical issues.

What and how much to record is dependent upon the research purpose/s and the particular context involved. In considering the length of each recording session in this study, possibilities included: a set time length, for example, half an hour or hour of recording; or length as determined by classroom activity or event - the curriculum genre or macrogenre (Christie, 2002), or genre chains (Fairclough, 2003), or curriculum unit or tasks (Alton-Lee et al., 2001); or discourse units (Ellis & Barkhuizen, 2005), or natural units, for example, functional units which considers the purpose the observed behaviour serves, and situations as units which consider larger patterns of behaviour (Evertson & Green, 1986). A further consideration is the number of cumulative sessions to record and analyse in order to have some confidence that the data and information reflects reality. The need for complete, continuous data on individual student experiences and classroom activities based on continuous

connections among both and learning processes, in order to build evidence-based theory as identified by Nuthall (2004) was the optimal position for this study. Constraints in time and funding limited the extent to which this study could execute this optimal.

How much, what and how to transcribe, again context and purpose dependent, needs to take into consideration the time and effort involved in transcription and coding analysis, and the interpretability of transcriptions. These elements are complex in nature and can easily be glossed over at the design stage, only to be an immense challenge in reality. With the availability of digital transcription and encoding systems, the speed and efficiency of handling large amounts of complex data and information is greatly enhanced. Nevertheless, it is important to only transcribe manageable and most relevant text excerpts, and to keep in mind that 'the researchers decision concerning … transcript conventions can affect the outcome of the analysis' (Greer, 2003, p. 49). Prudent decisions needed to be made so as not to compromise the validity of study's data and analysis. Using a funnelling filter reduced the amount of data to be transcribed to manageable proportions, which was able to be integrated into the computer analytical tool, Observer XT (Noldus, 2009) used to process observational data.

Increasingly sophisticated computer software programmes are now available that allow researchers to transcribe and encode large collections of video and audio data and create elaborate, multi-moded mappings and annotation systems. Two examples are Transana (2007) and Observer XT (Noldus, 2005), the latter particularly sophisticated and useful, albeit reasonably complex to learn, with perhaps its major constraint being expense. In a study of interactive whole class teaching, Smith, Hardman, Wall, and Mroz (2004) reported using the Observer 1995 version with great success, enabling the observation of lessons in real time to be instantly stored and available for immediate analysis. The study required such an effective and efficient analytical tool with the capacity to handle multiple and extensive streams of data and a complex analysis system or coding scheme. Observer XT human behaviour analysis software (Noldus, 2009) was selected as the technical means to illuminate the realities of classroom interaction and discourse not withstanding that its use to date was primarily in fields of science research. In this regard, using Observer XT in this study was relatively new in educational research and certainly unique in New Zealand educational research, yet a natural next step to build on to the pioneering work of Nuthall and his colleagues.

Ethical concerns not only revolve around questions about subject / participant awareness and consent of the individual, or in the case of children, of guardians or parents, but include matters related to: confidentiality - access to recordings by researchers, subjects / participants, and others; anonymity; storage of recordings; further use of data and information; and compensation to subjects / participants. Researchers using recording as a method need to be sensitive to the personal and private nature of

such data and take adequate steps to address these ethically and morally. Careful attention was paid in the study to ensuring the highest ethical standards were met throughout.

Aims and Hypothesis

Research aims and questions

As has been identified and discussed in the literature review, little is known about the expressive realities of Year 1 and 2 students in low socio-economic schools during classroom lessons. Neither is there in-depth assessment information available about the grammatical and lexical quality of these students' expressive capabilities, discursively and dialogically. This information gap exists at a time when there is on-going concern by policy makers and teachers about the persistent 'tail of underachievement' in this cohort group. This study set out to address this gap, by investigating the following research questions:

1) *What is the quality and quantity of language used by students in Year 1 and 2 classrooms in low socio-economic schools?*

2) *What interactional and discourse conditions operate in such classrooms, and how optimal are such conditions in enabling the quality and quantity of students' language and cognitive acquisition?*

3) *What are the noticeable effects on students' expressive (oral) capacities in English (and their cognitive resources) when teachers give focused attention to the quality and quantity of linguistic and cognitive expression?*

Hypotheses

Based on available research and evidence, the following hypotheses were posited.

Grammatical and lexical quality

It was hypothesised that the majority of the case study students' grammatical and lexical capabilities would be well below expected norms for students of similar age and stage.

Interactional and discourse patterns at Time 1

It was hypothesised that 'typical' interactional and discourse patterns [7] would be operating in the classroom and lessons of the teachers in the study at Time 1, despite being experienced and capable teachers.

[7] 'Typical' as discussed in the literature review.

Interactional patterns in Time 1 lessons

It was hypothesised that the interactional patterns operating in the classroom and lessons of the teachers in this study would offer minimal opportunities for students to participate and engage with fullness, cognitively and expressively. There would be minimal think-pair-share and turn-taking opportunities, the teacher would control the way and the topic (topicalisation) the majority of the time, and IRE interactional patterns would dominate.

Discourse patterns in Time 1 lessons

It was hypothesised that there would be little variety in discourse exchange patterns and forms, with minimal dialogicity and collaborative co-construction, few and constrained opportunities for students to 'try out' and express their expressive capabilities resources, minimal use of well-scaffolded elaborative responses to students by the teacher, and little attention to enhancing the acquisition and uptake potential of the students.

Teachers' theoretical and practice knowledge at Time 1

It was hypothesised that the teachers involved in study would be minimally aware of the extent of their students' grammatical and lexical strengths and gaps, and would have significant knowledge and practice gaps in terms of optimising interactional and discourse conditions in the classrooms and lessons to enhance the quality and quantity of the students' expression.

Habitus of the mind and practice, and change

It was hypothesised that if teachers were offered expanded theoretical and practice knowledge in terms of optimising interactional and discourse conditions in the classrooms and lessons to enhance the quality and quantity of the students' expression, there would be a marked shift in mindset and practice over the implementation period of ten weeks.

Research design

The focus of the study was on the individual - particular students, particular teachers, particular classrooms and lessons, and particular instances, so as to 'get as close as possible to the experiences of students' (Nuthall, 2004, p. 295). The study design was determined by this.

Research site and participants

The subjects in the study were five and six year old students in four Year 1 and 2 classes, one class from four different low socio-economic primary schools in Auckland, New Zealand, and their teachers. The teachers of the selected classes volunteered to participate in the study. Each had at least three years teaching experience and being permanent or long-term appointees. No further teacher attributes were specified as the research focus was on the quality and quantity of the students' oral expression in the classroom and during lessons, not on particular teacher attributes. To maintain

anonymity of schools, teachers and students involved in the study, pseudonyms are used throughout the thesis.

The selected classes were ethnically diverse, this being the nature of the children's families living in low socio-economic communities in Auckland, New Zealand. The largest ethnic groups in these communities were Pasifika and Maori, but also included other minority ethnic groups. Many of the children in these classes had languages other than English as the dominant home and family languages of discourse, even though many were New Zealand born. The strongest spoken language or languages of the children ranged from largely or totally monolingual English, to varying stages of bilingualism and age appropriate competency in a language or languages other than English. Some entered school with no early childhood education (ECE), while other children had some or considerable ECE, either in language nest settings where a language other than English is the main discourse language, or in mainstream ECE where English is the total or dominant language of use. Thus, the English competency of the students in the selected Year 1 and 2 classes varied considerably, dependent on their backgrounds and current home-community-school realities. All the students in the participating classes had attended school for at least three months (one school term) and were familiar with the routines and culture of school. Their ages ranged from 5.5 years to 7.0 years old.

Selecting the focus students and teachers

There were eighty students spread across the selected four classes participating in the study, and four teachers. The initial cohort of students was funnelled through a series of sifting filters at Time 1 and Time 2 to finally select only six case study students and two teachers as the major focus of the study.

Filter 1 – CombiList

Each of the eighty students was assessed by their class teacher at Time 1 to identify the child's interactional, language and communication competencies, using an adjusted version of the CombiList (checklist) devised by Damhuis, de Blauw, and Brandenberg (2004). Based on teacher observations in the context of classroom, the CombiList rates the child on each aspect of the checklist according to 'no', 'sometimes' or 'yes'. The 16 criteria are divided into five domains and scored as *Yes (Y), No (N)*, or *Sometimes (S)* (Table 1).

An overall best-fit into *Yes, No, Sometimes* was found, and one case study student was then randomly selected from each of the four classes at Time 1 - one student rated best-fit *Yes,* one *Sometimes* and one *No.* Thus, from the eighty students, twelve case study students were selected, four *Yes* students, four *Sometimes* students, and four *No* students.

Filter 2 – Vocabulary assessment

The twelve randomly selected case study students were assessed at Time 1 and Time 2 to identify each student's general vocabulary as measured by the British Picture Vocabulary Scale [BPVS]

(Dunn, Whetten, & Burley, 1997). BPVS offered a wide angle lens on the student's English vocabulary, and has been reliably used with young children, correlating significantly with other verbal ability measures (Dunn et al, 1997). The BPVS was administered in a quiet room away from the classroom, with care taken to follow the manual instructions accurately. On average, five to eight minutes was required to administer the test and obtain a raw score. BPVS age, percentile rankings and standardised scores were subsequently calculated for each student.

Table 1.
CombiList criteria

CombiList (Damhuis, de Blauw, & Brandenburg, 2004)

1) **Willing to communicate:** a) dares to speak; b) keen to express meaningfully and well
2) **Communication with teacher/adults:** a) understands what the teacher/adult says and means; b) expresses responses as clearly as he/she can
3) **Participation in discourse:** a) takes the opportunity to speak; b) continues saying because others are listening and responsive; c) initiates taking a turn and sustains the turn; d) gives elaborative responses to open-ended questions from teacher/adult/other; e) reacts and responds spontaneously and on own initiative to teacher's/other's ideas
4) **Contribution to the discussion or discourse:** a) sustains expression of his/her meaning, ideas and intentions; b) tries to express clearly what he/she means, if need be with help; c) thinks before he/she speaks so as to express at a higher cognitive level; d) continues expressing relevant to topic in hand
5) **Benefits from feedback:** a) continues his/her meaning and intentions, and later picked up and uses examples and models; b) meanings and ideas logically developed and expressed; c) talks to others, not only teacher.

Filter 3 – Oral text production

Two or three oral text samples were collected at Time 1 and Time 2 for each of the twelve students, providing important evidence about the students' capabilities to independently express a sustained, connected series of ideas. Each student selected one photo at a time from a set of eight, and was asked to express a discursive text, that is, their ideas and their thinking based on what was happening in the photo, 'to say as much as they can, using "clever" words and speaking so I (the researcher) can hear how "clever" you are at speaking.' The researcher did not engage in conversation with the students as they expressed their text, although some prompts were needed at times for some students who were struggling to express even basic ideas. The expected time for each oral text production was 2-3 minutes; in reality, however, they ranged between 30 seconds and 4 minutes in length. A student was stopped when the task was proving too challenging and left to continue beyond 2 minutes when they had much to say. Each session was videoed using a single camera, positioned so as not to unduly distract the student.

All twelve students' oral text samples were videoed and transcribed, but only six case study students' samples were micro-analysed, the selection made near the end of the study.

Filter 4 – Video recording lessons

At Time 1 and Time 2, three 'typical' lessons in each class, approximately 30 minutes in length, one per day on three consecutive days in one week, were video recorded (Table 2). The only criteria given to the teachers were that each lesson should be in a different curriculum area and be representative of 'typical' lessons occurring in the classrooms. Otherwise, the teachers were left to their own devices as to topic, content, lesson structure and organisation of each lesson. Families of all except two students gave written consents for the video-recording. These students were withdrawn from the class during these lessons in accordance with ethical requirements.

In each lesson, four video cameras were used to record the interactions and expression of the three case study students and their teacher. The teacher's interactions and verbal expression throughout each lesson were video recorded using medium range, wide angle shots, and each case study student was video recorded using mainly close-up shots. Remote control lapel microphones were worn by each case study student and the teacher. Every effort was made to be as unobtrusive as possible in video recording the lessons, and no undue distraction and interference was noted in any of the lessons at Time 1 and Time 2. The students in particular took the presence of cameras and the research team in their stride.

Table 2.
Curriculum areas of lessons

	School A	School B	School C	School D
Time 1	Reading groups Topic: Dinosaurs Mathematics	Reading: Greedy cat Religious Education: The Holy Spirit Topic: Role models	Reading: Shared book Mathematics Topic: Managing Self	Reading: Shared book Topic: Hot and Cold Mathematics
Time 2	Dialogic reading Topic: Stewed apples Mathematics	Dialogic Reading Retell: The poor sore paw Topic: History of Mary MacKillop School	Dialogic Reading Mathematics Reading groups: Dialogic reading	Dialogic Reading Topic: Planes and Flight Mathematics

Filter 5 – Case study student lesson sampling

In each of the two selected classes, three lessons at each of Time 1 and Time 2 were videoed – twelve lessons in total. Using four cameras in each lesson, four video data files were created – one of each of the three case study students' capturing their interaction and verbal expression during each lesson, and one data file of the teacher. Thus, there were 48 video data files created across the twelve lessons – 36 case study student files, and twelve teacher files. All twelve teacher video files were micro-analysed. However, in keeping with the study focus on the particular, it was decided to put the 36 case study students' video data files through a fifth filter so that a representative sample would be micro-analysed without compromising investigative evidence.

For each of the case study students, one Time 1 and one Time 2 lesson was selected for micro-analysis. Because lessons were identified and planned by the teachers independent of the researcher, in that sense they were not comparable. However, the study sought to investigate the quality and quantity of students' expression during classroom lessons, not to compare specific, pedagogical differences and so purposive systematic sampling and comparison of selected samples was valid. The sample Time 1 lesson was numerically different to the Time 2 sample lesson. For example, in Ara's case, at Time 1 lesson 1 was selected, and at Time 2 lesson 3. These two lessons were separately micro-analysed using Observer XT as the analysis tool, to become a comparative pair in the interpretation of the data. A similar process was used for each case study student.

The micro-analysed video files of the three Time 1 and three Time 2 lessons of each teacher were matched in correspondence to the case study students' lesson pairings for the interpretation of the data. For example, in parallel with Ara's paired lessons, the School A teacher Time 1 lesson 1 was compared with Time 2 lesson 3, so as to be able to examine the extent of optimizing interactional and discourse conditions executed by the teacher and the effect on the quality and quantity of Ara's interaction and expression in the same lessons.

Final selection of six case study students and two teachers for micro-analysis

While all twelve case study students and all four teachers were of potential importance and interest, the aim of this study was to capture and analyse in-depth, complete and continuous data on the particular – individual students, teachers, lessons and instances, their experiences, their expression. It was decided six case study students and two teachers was manageable within the time constraints, and would provide rich insights into the interactional and discourse realities of the subjects.

The six case study students came from two classes, two *Yes* students, two *Sometimes* students, and two *No* students. Of the four classes, the two selected classes, School A and School B, were most different in terms of Year level, one class comprising Year 1 to 3 students, the other all Year 1 students. Of the twelve case study students, the six case study students represented the greatest difference between the *Yes* and *No* students. For example, the School A *Yes* student, Ara, was well above cohort in vocabulary and expressive confidence and fluency as measured by BPVS and oral text production, while the *No* student, Rana, was well below, lowest across the range of twelve students. In the School B class, the *Yes* student, Api, was a Year 2 student, the *No* student, Palo, a new entrant-Year 1 student.

Micro-analysis procedures and measures

Three data streams were micro-analysed to provide research evidence about the quality and quantity of Year 1 and 2 students' language use in the classroom, and the interactional and discourse conditions operating in the Year 1 and 2 classrooms. The first, the video recorded oral text production

samples of the six case study students, the second, the video recorded three 'typical' lessons at Time 1 and Time 2 with the lens in each of the case study students, and the third, the video recorded three 'typical' lessons at Time 1 and Time 2 with the lens on the teacher.

Video recording

The advantage of video recording is the density of data potentially available (Alton-Lee, Nuthall, & Patrick, 2000; Dufon, 2002; Nuthall, 2004). It provides more contextual data than audio-only recordings. Well-managed video recording has the potential to more accurately capture density of linguistic information - who is speaking and what is said; about the non-verbal features of interaction and discourse; and information on directionality and intensity of attention. There are of course limitations. That which is recorded is but a snapshot of reality, constrained by the technology itself, the camera user, and interpretations made on analysis. Multiple camera use, triangulation of recordings, and field notes, serve to increase the validity of interpretations of data and information.

To a greater or lesser extent, audio-video recordings are an unnatural intrusion into the classroom. However, modern audio recording technology such as mini lapel microphones allows for more discreet and minimally intrusive recordings to be made, thus lowering participant reactivity levels. In two studies, one by Alton-Lee et al. (2000) and the other by Alton-Lee, Diggins, Klenner, Vine, and Dalton (2001), multiple cameras and audio microphones worn by the students were used to capture insights into students' public and private domains. In the Alton-Lee et al. (2001) study, a mobile camera and broadcast microphone were used to obtain teacher actions, and all students wore broadcast microphones, only four of which were alive - those of the case study students - to obtain detailed individual audio and video records.

In this study, only the case study students and the teacher wore mini lapel microphones, the students aware of but not distracted by this. While cost and technological complexity is a key consideration here, weighed against the benefits of obtaining rich data and information as in this study, it is well worth striving for optimal recording conditions. For this reason, in recording each lesson, there were four cameras used, one of three trained on each case study student, and the fourth on the teacher.

The researcher took field during the lessons to complement audio-video recorded data and information. In order to give structure, the field notes were organised along the lines of that suggested by Mutch (2005, p. 156), namely, descriptive, reflective and analytic field notes. These organisational categories remained open-ended enough to allow for considerable flexibility, yet kept the field notes focused.

Analysis Procedures and Tools

Observer XT 9.0 (Noldus, 2009) human behaviour analysis software offered a number of advantages over other digital analysis tools investigated, and so was selected to be used in this study. Its

capabilities included second-by-second analysis; complex analytical potential to extract comparative information about subject/s, behaviour/s and lesson/s at any point in time and across time, for type, frequency, and relational analysis; being able to handle complex coding schemes; data and information visualization as well as exportation into statistical programmes; and utterance transcription co-occurring with utterance analysis. Micro-analysing and transcribing vast streams of audio and video data are exacting, time consuming tasks, regardless of the tools used. However, by using sophisticated analysis software such as Observer XT 9.0, analysis is less error prone than human-only or less sophisticated coding and analysis software, increasing analysis possibilities and reliability. Cost and the initial challenge of mastering the software are its biggest drawbacks.

The coding schemes

Three different but not dissimilar coding schemes were developed to micro-analyse the three videoed data streams using Observer XT (Appendix 1). The purpose of the first coding scheme was to identify aspects of each of the six case study student's expressive complexity and fluency of expression in oral text production, thereby providing evidence about the student's expressive realities. Coding scheme components included clause level analysis, syllable count, and propositional and hesitancy judgement, and grammaticality judgements.

The purpose of the second coding scheme used to analyse the student's interactions and expression during the lessons was to identify aspects of complexity and fluency of expression, and interaction. Coding scheme components included clause analysis, word count, text processes, utterance directionality and volume, and relevancy and hesitancy judgements, thereby providing evidence about the student's quality and quantity of expression during class lessons.

The purpose of the third coding scheme used to analyse the interactions and discourse of the teacher was to identify aspects of teacher discourse extent and type, and the interactional patterns operating throughout the lesson, thereby providing evidence about how optimising are the conditions to enhance the cognitive and expressive quality and quantity of students. Coding scheme components included clause analysis, word count, text processes, utterance form, types of questions, and utterance directionality and relatedness. Frequency and type of each component included in each of the three coding schemes could be coded and tracked per utterance and across utterances throughout each lesson analysis.

Transcriptions

The oral text production samples of the six case study students at Time 1 and Time 2, the utterances of the case study students in focus in each of the lessons, and the utterances of the teacher, were transcribed. Observer XT software does not have an in-built transcription tool so the comments column was adapted for this purpose. This allowed for the coding and transcriptions of each utterance

expressed to be carried out simultaneously. This synchrony was particularly advantageous as it integrated analysis data and information to offer a cohesive view of expression and interactions.

Reliability checks

All video files were coded and transcribed by the researcher, and 5% of the same files were checked by a research assistant. The research assistant was trained by the researcher over a period of four weeks to a 95% level of inter-rater reliability. Checked files resulted in a 98% agreement average. Discrepancies were discussed and resolved by consensus.

The intervention

An intervention was conducted over five consecutive weeks in the second half of Term 3 of the school year for the four participating teachers in the study, with one six hour workshop per week, a total of 30 hours across five workshops. The purpose of intervention was to provide the four participating teachers with theoretical and practice knowledge as related to optimising classroom interactional and discourse conditions to enhance the quality and quantity of students' expression. The intervention was relatively complex in terms of content, compensated somewhat by the iterative, scaffolded nature of the workshops (Appendix 2). The workshops were informal in structure, the interactional and discourse patterns used in the workshops modelling optimising interactional and discourse classroom conditions. Dialogue and discussion were central.

Core workshop components included purpose and content identification, attention to underpinning theories and principles, practice implications and demonstrations, and cycles of review. Workshops 1, 2, 3 and 4 included live demonstrations, the researcher modelling specific linguistic and interactional classroom practices and teacher attentions. The demonstrations were with like Year 1 and 2 students to those in the four participating classes, each modelling session was videoed to allow teachers to revisit and review immediately after the completion of the workshop. The interactional and discourse model (Figure 1) was a central reference point throughout all workshops, complemented by in-depth focuses on specifics in each workshop. Explanatory notes were made available to the teachers as handouts and in the core resource text, Expanding oral language in the classroom (van Hees, 2007).

Fidelity of implementation

'Fidelity of implementation is the delivery of instruction in the way in which it was designed to be delivered,' (Johnson, Mellard, Fuchs, & McKnight, 2006, p. 4.2). Factors that may reduce fidelity of implementation include the complexity of the intervention, access to materials, the teachers' perceived effectiveness of the intervention, and expertise and motivation of the person delivering the intervention (Reschly & Gresham, 2006). In this study, the highest risk factor was the first, as the core content of the intervention, the theory and practice of optimising interactional and discourse conditions in the classroom, was relatively complex. Offset against this were the high levels of teacher

motivation to make a difference to the quality and quantity of their students' expression, the ready access to materials and resources, and the expertise and accessibility of the interventionist.

Indirect assessment was the selected tool to measure fidelity of intervention in this study, taking the form of teacher self reports alternating between a fortnightly rating scale and a semi-structured implementation commentary (Johnson et al, 2006; Gresham, 1998). A five point balanced rating scale was used - *Never* to *Always* (Friedman & Amoo, 1999) to respond to 10 linguistic teacher indicators, 11 interactional teacher indicators, and 10 interactional and linguistic student indicators (see Table 12, page 93). The indicators were derived from the optimising conditions model (Figure 1, page 7) developed by the researcher based on a review of the literature. A semi-structured form was used by the teachers to guide their fortnightly intervention implementation self-reports. Immediate feedback was given by the researcher in response to the intervention implementation self-reports, and by consensus, shared with the other three participating teachers. The feedback was valued by the teachers, their willingness to share a mark of their professional openness and cohesion as a group.

Phases of the study

The study was conducted over one school year, divided into five main phases – Set up, Time 1, Intervention, Implementation and Time 2.

Set up

At the commencement of the school year, the Principals of ten representative low-socio-economic schools in the Tamaki and Manukau districts were invited to participate in the study. Four schools responded positively and so no further selection process was needed. One volunteer Year 1 or Year 2 classroom teacher in each of the four schools was identified by the Principal to participate in the study. The Principal and the volunteer teacher in each school were given full details about their involvement in the study during two information meetings carried out at each school. The participating teachers were prepared to be able to complete the CombiList on each of their students towards the end of Term 1 after 6-8 weeks of observing their students.

Four research assistants were recruited to manage the videoing of the Time 1 lessons in all four classrooms across the first four weeks of Term 2, and the Time 2 lessons across the first four weeks of Term 4. They and the participating teachers signed a confidentiality agreement in accordance with ethics requirements.

Time 1

By the commencement of Term 2, the CombiList assessments had been completed by the participating teachers, and three randomly selected case study students had been identified in each class. Further consent was sought from the families of these students for their involvement as case study students, with a 100% positive return. Basic information about each of the case study students

was gathered from their class teacher and their families. Prior to videoing the Time 1 lessons, one day was spent in each of the participating schools to meet the participating class, administer the BPVS to each of the case study student and gather their 2-3 oral text production samples, and conduct as semi-structured interview with each of the participating teachers from which a basic information profile was compiled about their teaching experiences, and their theoretical and pedagogical knowledge and practices as related to interactional and discourse patterns in the classroom. In the following weeks three lessons were videoed in each of the four classrooms of the participating teachers.

The Intervention

During the second half of Term 2, the four teachers participated in an intervention (Appendix 2) consisting of five workshops, (a total of 40 hours), designed to provide theoretical and practice knowledge as related to optimising classroom interactional and discourse conditions to enhance the quality and quantity of students' expression. These workshops, conducted by the researcher, were held one week apart, at a centrally placed school. Between each workshop, the teachers were encouraged to trial what they had learned and share outcomes.

Implementation

The implementation phase took place across the ten weeks of Term 3, each of the teachers focusing on optimising interactional and discourse conditions in the classroom, particularly during class lessons. A weekly self-report was submitted to the researcher via e-mail, the format alternating weekly between a ratings report and a semi-structured implementation report designed to track fidelity of implementation.

Time 2

At the commencement of Term 4, the CombiList assessments of all students in the four classes was repeated by each of the four teachers, the researcher re-administered the BPVS to the each of the selected twelve case study students, and gathered and videoed 2-3 oral text production samples from each. A semi-structured interview was conducted with each of the participating teachers to re-identify their theoretical and pedagogical knowledge and practices as related to interactional and discourse patterns in the classroom, followed by the videoing of three lessons in each of the four classrooms of the participating teachers.

Children as subjects

Careful attention in the design and implementation of the study was given to children as subjects (Alton-Lee et al., 1993). Two sets of students aged between 5.5 and 7.0 years participated in the study: 1) all students in the four participating classes who were in class during videoing of the Time 1 and Time 2 lessons, and 2) the twelve case study students passed through Filters 1-4. Young children are vulnerable subjects and so close attention was paid to maximising their understanding of purpose

and processes of the study and their involvement in it. The school management staff and case study teachers approached the case study students' families to inform them about the research project and their child's possible involvement. Using written information supplied by the researcher, school staff and the teachers involved in the study, who knew their families well, explained and clarified the research before formal consent was sought. Every effort was made to ensure families fully understood their child's involvement, with an invitation to clarify through a bilingual support people should they wish or need to. No families requested this.

Summary

Investigating the complex nature of interactional and discourse patterns operating in Year 1 and 2 classrooms, and the quality and quantity of students' language use and acquisition potential requires the pulling together of a number singular perspectives into an integrated perspective on reality. The design of the study reflects this. The selected methods and technologies used in the study draw on previous research studies, combined with a drive to reveal valuable insights into the largely hidden and unknown realities of the students and teachers.

Chapter 4: Findings 1

Students' quality and quantity of expression

Introduction

Each of the three study research questions overlap and need to be examined at two points in time - at Time 1 prior to the intervention, and six months later at Time 2, post intervention and the implementation phase. Of the two major participant groups in the study, eighty students and four teachers, the students were filtered to identify twelve case study students, and further filtered to identify six case study students and their teachers to become the subject of micro-genetic analysis. The findings are presented in three findings' chapters. Chapter 4 reports on summative macro and micro findings as related to the students' quality and quantity of expression at Time 1 and Time 2. Chapter 5 reports on the teacher implementation findings (post intervention), and on the interactional and discourse conditions operating in two Year 1 and 2 classrooms during three lessons at each of Time 1 and Time 2 with the lens trained on the teacher. Chapter 6 reports on the effects of these conditions on students' expressive capacities viewed through the lens of six case study students at Time 1 and Time 2.

Participatory and expressive behaviours - all students (Filter 1)

The participatory and expressive behaviours of the eighty students in the four participating classes were assessed by their teachers using the CombiList criteria (Filter 1) [see Table 1]. All students in each of the four classes in the study had been at school for at least six weeks, giving teachers adequate time to observe their participation and discourse behaviour in class. Teachers received initial training on how to use and complete the CombiList, reporting it to be unproblematic and not overly time-consuming. Deeper analysis of each student's strengths and gaps in regard to participation and discourse behaviours had the potential to be formatively and summatively useful to teachers - for example, identifying criteria trends for individual students and across the class group of students would allow for targeting particular strengths and needs based on each behaviour and set of criteria. For the purposes of the study, no further work in this regard was done using the CombiList ratings and criteria.

An overall best-fit for the 16 CombiList criteria into *Yes, No, Sometimes* was found, and one case study student was then randomly selected from each of the four classes at Time 1 - one student rated best-fit *Yes (Y),* one *Sometimes (S)*, and one *No (N)*. Over time, 50% of the students stayed at the same classification including the four Y students and two of the four S students. Excluding the Y

students who maintained their high scores and one S student who remained static, all other students' scores improved. Altogether 80 students across the four classes were assessed. Table 3 present a cross-tabulation of the classifications at Time 1 and Time 2. The mean age at Time 1 was 69 months (sd=7.5) and at Time 2 was 74.9 (sd=7.6) months – a difference of 5 months. The 12 students chosen for closer analyses (the case study students) are listed in Table 4. There were seven females and five males, three from each of the four classes, 4 No, 4 Sometimes, and 4 Yes at Time 1.

Table 3.
CombiList best fit ratings summary at Time 1 and Time 2 – all students

	Time 2 best fit						
	Not		No/		Sometimes/		
Time 1	classifiable	No	Sometimes	Sometimes	Yes	Yes	Total
Not classifiable	0	0	0	2	0	0	2
No	3	9	0	1	1	2	16
No/Sometimes	1	0	1	1	0	0	3
Sometimes	0	0	0	11	1	8	20
Sometimes/Yes	1	0	0	0	1	5	7
Yes	2	0	0	3	0	27	32
Total	7	9	1	18	3	42	80

Table 4.
CombiList best fit ratings summary at Time 1 and Time 2 – case study students

		Time 1					Time 2				
				Some		Best			Some		Best
Class	Students	Age	Yes	times	No	fit	Age	Yes	times	No	fit
A	**Rana**	**5.02**	**5**	**10**	**1**	**S (N)**	**5.10**	**10**	**6**	**0**	**Y**
B	**Palo**	**5.02**	**6**	**7**	**3**	**S (N)**	**5.09**	**7**	**9**	**0**	**S**
C	**Aqa**	**6.02**	**1**	**3**	**12**	**N**	**6.08**	**5**	**9**	**2**	**S**
D	**David**	**5.03**	**3**	**12**	**1**	**N**	**5.09**	**12**	**4**	**0**	**Y**
A	**Alo**	**5.06**	**4**	**8**	**4**	**S**	**6.01**	**9**	**7**	**0**	**Y**
B	**Mele**	**5.11**	**5**	**8**	**3**	**S**	**6.05**	**12**	**3**	**1**	**Y**
C	**Ata**	**6.02**	**3**	**6**	**7**	**S**	**6.08**	**3**	**6**	**7**	**S**
D	**Susi**	**5.04**	**0**	**16**	**0**	**S**	**5.10**	**12**	**6**	**0**	**Y**
A	**Ara**	**5.04**	**16**	**0**	**0**	**Y**	**5.10**	**16**	**0**	**0**	**Y**
B	**Api**	**6.00**	**13**	**1**	**2**	**Y**	**6.06**	**14**	**1**	**1**	**Y**
C	**Ine**	**6.09**	**12**	**4**	**0**	**Y**	**7.03**	**16**	**0**	**0**	**Y**
D	**Bava**	5.01	16	0	0	Y	5.07	15	1	0	Y

In School A, the *No* selected case study student's best-fit rating was *Sometimes* at Time 1**.** The three students rated at *No* were either special needs students or a student unlikely to attend school regularly and thus deemed unsuitable to be case study students. Further assessments of the selected *No* student (Rana) indicated that at Time 1 she was very low in vocabulary and expressive competency, and so designating her as a *No* case study student seemed appropriate. At Time 2, the percentage of students rated *Y*, had increased from 46% to 75%, and conversely, the percentage of students rated S had decreased by 19.5 % to 25%. There was a significant shift by students based on teacher evidence towards more effective participation and discourse between Time 1 and Time 2. The other three case study students either maintained their criteria rating or made a positive shift towards more effective

participation and discourse. The *Y* student could not improve her score, already at maximum at Time 1. She maintained that position across the six months of the study. The *S* and *N* students made substantial shifts towards more effective participation and discourse. Analysis of the oral text assessment data aligns with this result.

In School B, there were no students with CombiList best-fit ratings as *No.* Two students' best-fit rating was *Sometimes/No.* As one of these students was a special needs student and deemed unsuitable for the study, the other *Sometimes/No* student was selected as the *No* case study student. At Time 2, the number of students rated *Y* increased by one – thus between Time 1 and Time 2, from 61% of the students in the class to 67%. There was a small shift by students, based on teacher evidence, towards more effective participation and discourse between Time 1 and Time 2. Of the three case study students, the *S* student made the greatest positive shift between Time 1 and Time 2, gaining seven *Y* criteria, and losing five *S* criteria and two *N* criteria. The *Y* and *N* students made a slight positive shift towards more effective participation and discourse. The *Y* student gained one *Y* criteria and lost one *N* criteria, while the *N* student gained one *Y* criteria, gained two *S* criteria, and lost three *N* criteria.

In School C, just over half the students in the Year 2-3 class at Time 1, as rated by their teacher had an *N* best-fit. At Time 2, the number of students rated *Y* increased by two, thus overall, there was a small shift by students, based on teacher evidence, towards more effective participation and discourse between Time 1 and Time 2. Of the three case study students, the *N* student made the greatest positive shift between Time 1 and Time 2, gaining four *Y* criteria and six *S* criteria, and losing nine *N* criteria. The **S** student neither gained nor regressed. The *Y* student shifted positively, whereby at Time 2 she rated *Y* for all criteria.

In School D, there were no students rated at best-fit *N***,** so a *S* case study student was selected to be a *N* student in the student identified by the teacher to be at the extreme negative end of the class in terms of participatory and expressive behaviour. Just over half of the students in this Year 1 class at Time 1 were classified as best-fit *Y* and no students rated *N.* At Time 2, the number of students rated *Y* increased by three. Of the three case study students, the *S* and *N* students both made significant positive criteria gains between Time 1 and Time 2. The *S* student gained twelve Y criteria, and lost ten *S* criteria, with no *N* criteria at both time points. The N student gained nine *Y* criteria, and lost eight *S* criteria and one *N* criteria. The *Y* student shifted positively, whereby at Time 2 she rated *Y* for all criteria.

Summary of results across the four classes

In all classes, between Time 1 and Time 2, there was a positive shift in the participation and discourse of students, most students showing positive gains. Similarly, the case study students in each class, with two exceptions – the S student in School/class C, and the Y student in School/class D, all made positive direction shifts reflecting an increase in effective participation and discourse across six

months (Time 1 to Time 2). The Y student in School/class A could not improve, staying stable with sixteen Y criteria at both Time 1 and Time 2.

Three case study students, Aqa, Mele and Susi in particular made dramatic positive Time 1-Time 2 gains as rated by their teacher. These students were either rated *S* or *N* at Time 1, and so like all four *N* and four *S* students across the four classes, they had the greatest potential to make a positive shift. The three students who made these large positive gains were the *N* student in School / class B, and the *S* and *N* students in School/class D. Two other students, the *S* and *N* students in School/class A (Alo and Rana) also made significant positive gains between Time 1 and Time 2, although not as great. There were two students who made no shift - the *Y* student in School/class A (Ara) who could not improve, rated at maximum at Time 1 and Time 2, and the *S* student in School/class C (Ata) who could have improved but didn't. Of the remaining four students, the *Y* and *N* students in School/class B (Api and Palo) and the *Y* student in School/class 3 (Ine), made modest positive shifts, and the *Y* student in School/class D (Bava) lost one *Y* criteria. Of these four students, the *N* student had the greatest potential to improve, but did not to any great extent.

The trend in all four classes towards increased effectiveness in participation and discourse by students between Time 1 and Time 2 could be due to a number of factors. Two major factors to be considered are: the effect of maturation and thus confidence and fluency growth of students over six months; or effects of the intervention on teacher practice.

Of the four classes involved in the study, two were Year 1 classes, School/class A and School/class D, with students' ages ranging at Time 1 from 5.00 years to 5.08 years. In School/class B, a Year 1-3 class, there were Year 1 students of similar age to the students in Schools/classes A and D. Also in this class were students aged between 5.11 years and 6.10years at Time 1. School/class C was a Year2/3 class, with students between 3 months and up to 14 months older than the students in the Year 1 classes at Time 1. As all schools/classes trended towards a positive gain in ratings for most students, maturation as a key influential factor might be dismissed.

This leaves the effect of the intervention on teacher practice. The focus of the intervention was primarily on expanding the quality and quantity of students' oral expression, under optimising environmental conditions that support and enhance such expression. The teachers' weekly self-reports throughout the ten weeks of the implementation phase of the intervention reflected their attention to the core aspects of the intervention. They reported increasing implementation effectiveness of core aspects in focus across the ten weeks of the implementation phase. The corollary of this would mean that the students' quality and quantity of oral expression was enhanced by the teachers' increasing implementation effectiveness. It might be concluded that in terms of the CombiList ratings designated to track students' participation and discourse in class, the intervention had an effect.

Twelve case study students vocabulary measures (Filter 2)

A psychometric measure of receptive vocabulary using the British Picture Vocabulary Scale (BPVS) was used to provide insight into each of the case study student's vocabulary resources at Time 1 and Time 2. The BPVS data is presented here as case study student group data, and examined again later as part of the six case study students' oral profiles, offering insight into their unique trajectories of vocabulary acquisition and development.

Group results hold significance in terms of the patterns and trends of a representative group of twelve students in Year 1 and 2 classes in low socio-economic schools.

Table 5.
Case study students' BPVS results at Time 1 and Time 2

Student	Combi rating	Time 1 BPVS ages	Time 2 BPVS ages	Time 1 BPVS % rank	Time 2 BPVS % rank	Shift direction	Time 1 age (mths)	Time 1 BPVS age (mths)	Chron-BPVS age diff.	Time 2 age (mths)	Time 2 BPVS age (mths)	Chron - BPVS age diff.	Chrono -BPVS change T1-T2
Rana	N	45	64	20	40	>>	65	**45**	-20	69	**64**	-5	19
Palo	N	48	42	28	12	<	62	**48**	-14	68	**42**	-26	-6
Aqa	N	59	60	22	16	>	76	**59**	-17	81	**60**	-21	1
David	N	39	58	9	28	>	64	**39**	-25	70	**58**	-14	19
Alo	S	39	46	8	13	=	66	**39**	-27	73	**46**	-27	0
Mele	S	48	52	13	13	=	72	**48**	-24	78	**52**	-26	-2
Ata	S	42	60	5	16	>	76	**42**	-34	81	**60**	-21	13
Susi	S	48	58	24	28	>	65	**48**	-17	70	**58**	-12	5
Ara	Y	87	91	91	90	=	64	**87**	23	70	**91**	21	-2
Api	Y	71	73	48	40	>	73	**71**	-2	79	**73**	-6	-4
Ine	Y	72	94	32	63	>>	82	**72**	-10	88	**94**	6	16
Brava	Y	52	51	30	24	<	63	**52**	-11	68	**51**	-17	-5

With the exception of three students, Palo (CombiList rating ***N)***, Bava *(Y)* and Ara *(Y),* all students made vocabulary gains between Time 1 and Time 2. Significant vocabulary gains were made by four students in particular: Rana *(N),* Ine *(Y),* Ata *(S),* and David *(N).* Moderate gains were made by five students: Alo *(S)*, Api *(Y),* Mele *(S),* Palo *(N),* and Susi*(S).* Using a paired t-test (T1 Mn=54.17, sd=15.12; T2 Mn=62.42, sd=16.25; ES =.18; t=3.10, df=11, p<.01).

It is noted that of the twelve case study students, only two students (Ara and Api) had a BPVS age close to, at or above their chronological age. Of the remaining ten students, each was below in BPVS age compared to chronological age by between 10 months to 34 months. Ara had a 23 month advantage in BPVS age compared to her chronological age, and this advantage she maintained over a period of six months. The most disadvantaged student, Ata, made significant gain in six months but was still 21 months below in PBVS age six months later. The ground he caught up still placed him

only at a moderately low average in percentile ranking. Five students were between 10 months to 17 months below, and four students as much as between 20 to 27 months below in BPVS age compared to their chronological age. Of the twelve students in this group, 83% had a significant gap in vocabulary age compared to an expected average for students of equivalent age.

Six case study students' expressive profiles – Filters 1, 2 & 3

Of the four classes in the study, the classes at School A and School B were identified as most different in terms of Year level, one class comprising Year 1 to 3 students, the other all Year 1 students. The six case study students in these classes represented the greatest difference between the Yes and No students and were thus selected for micro-analysis. These selected six case study students - Ara, Alo, Rana, Ara, Mele and Palo, were passed through three filters – CombiList (Filter 1), PBVS (Filter 2) and oral text production analysis using Observer XT 9.0 as the analysis tool (Filter 3). On a continuum from the most general to the most specific, BPVS might be described as a macro-analysis tool, identifying trends in the students' vocabulary resources and acquisition, oral text production analysis using Observer XT as the micro-analysis tool, identifying fine-tuned aspects of expressive behavior and competencies, and CombiList placed somewhere in between, specific but not fine-grained, identifying trends in participatory and expressive behaviours during classroom activities and lessons. Of interest is the value and contribution of each towards an informed and well-founded understanding of the expressive competencies and potential of each of the six case study students as examples of what might be 'typical' of Year 1 and 2 students in low-socio economic schools.

The micro-analysis of the six case study students' vocabulary and oral expression at Time 1 and Time 2 offers insights into the individual nature of vocabulary and language acquisition and expression, points towards trends across the group, and foregrounds a number of matters of interest around assessment measures. It provides evidence about the quality and quantity of these Year 1 and 2 students' oral expression, and the possible effects on their expressive language when their teachers focused attention on optimising interactional and discourse conditions in the classroom to enhance linguistic and cognitive expression.

Ara's analysis profile

Ara was a female Maori-European Year 1 student at School A School, aged 5.04 years at Time 1. She had delicate health and so was quite often absent from school.

Filters 1 and 2 – CombiList and BPVS

Ara was an outgoing, talkative and highly intelligent child as reflected in a maximum CombiList criteria score *(Yes)* for participatory and expressive effectiveness as rated by her teacher both at Time 1 and Time 2. Her expressive competency was advantaged by a BPVS vocabulary age 23 months above her chronological age at Time 1, Ara holding this advantage to 21 months at Time 2 (Table 6a).

Her standardised score of 120 and 119 respectively at Time 1 and Time 2 placed her in the moderately high band.

Table 6.
Ara's oral text analysis data

Table 6a.
Ara's CombiList & BPVS data

CombiList data	Time 1	Time 2
	32	32
BPVS data	Time 1	Time 2
Chronological age (mths)	64.0	70.0
BPVS age (mths)	87	91
Std score	120.0	119.0

Table 6b.
Ara's oral texts – number and length

Length /number of texts	Mean total time	Number
Time 1	O.30	3
Time 2	1.53	2
Number of utterances	Time 1	Time 2
Mean number of utterances	11.5	18.5

Filter 3 – Oral text production

Complexity and Fluency

Ara expressed three texts at Time 1 and two texts at Time 2. The mean duration of text expression at Time 2 was considerably longer than at Time 1, with a 68% increase in the number of utterances expressed at Time 2 from Time 1 (Table 6b).

The greatest shift in terms of complexity of expression as measured by clause level analysis from Time 1 to Time 2 occurred at the expanded clause and multi-clause levels (Table 6c).

Table 6c.
Clause analysis – Ara's oral texts

Clause analysis	Time 1	Time 2
below clause	4.0	5.0
minimal clause	2.5	4.5
expanded clause	1.5	3.5
clause complex	2.0	0.5
multi-clauses no complex	0.5	4.5
multi clauses - some complex	1.5	0.5

Table 6d.
Multi-clause utterances – Ara's oral texts

Multi-clause utterances	Time 1	Time 2
2 cl	1.0	3.0
3 cl	1.0	2.0
4 cl	0.0	0.0
5 cl	0.5	0.0

Table 6e.
Duration of utterances – Ara's oral texts

Clause analysis – duration	Time 1	Time 2
below clause	00:04.5	00:08.4
minimal clause	00:00.5	00:08.1
expanded clause	00:01.0	00:05.5
clause complex	00:09.2	00:12.4
multi-clauses no complex	00:08.2	00:06.9
multi clauses - some complex	00:16.8	00:15.2

Table 6f.
Mean number of silences – Ara's oral texts

Number of silences	Time 1	Time 2
Mean per text	4.0	11.0
Duration of silences		
Time - mins:secs	00:12.2	00:39.4

Table 6g.
Syllable per utterance – Ara's oral texts

Syllables count		
Mean number per utterance	28.1	9.2

Table 6h.
Fluency–hesitancy – Ara's oral texts

Hesitancy	Time 1	Time 2

fluid near NS	7.0	15.0
laboured	1.0	0.5
a little hesitant	4.0	3.0

Table 6i.
Grammaticality judgements: Mean number – Ara's oral texts

Grammaticality	Time 1	Time 2
standard English	11.0	11.0
minor error	1.0	7.5
major error	0.0	0.0

Table 6j.
Propositional judgements: Mean number – Ara's oral texts

Propositions	Time 1	Time 2
major idea	7.5	9.0
minor idea	1.5	4.0
combination - major-minor	0.5	0.0
outside idea	0.0	0.0
completing previous idea	2.0	2.5
incomplete idea	0.5	3.0
total own story	0.0	0.0
own story + major	0.0	0.0

The mean number of expanded clauses more than doubled, and multi-clauses with no clause complexes increased nine fold (Table 6c). Minimal clauses almost doubled at Time 2 reflecting her more thoughtful and controlled expression of utterances compared to Time 1. Overall, there was a significant shift in expressive complexity and extent by Ara from Time 1 to Time 2.

Example text utterances illustrate changes in Ara's expression between Time 1 and Time 2. The two longest utterances occurred at Time 1, the latter largely comprising of a list of items describing two boys with a soccer ball.

Time 1 example 1):

> *This castle is made of sand and the water is too gooey for the sand so they made it with their hands and then they made a roof for it and everything else..but I can't see any doors, or roofs, or any..What does that say?*

Time 1 example 2):

> *....and they have hair..they have fac..they have mouth, nose, even eyes and ears...and a shirt and some pants..shirt, pants, long hair with a ponytail..face, ears, mouth, nose, eyes, shirt and pants...That's all...and a ball..white and black.*

At Time 2, utterances were shorter, punctuated by more silences, with some utterances grammatically tighter than at Time 1 as in these examples:

Time 2 example 1)

01:20 That isn't milk
01:26 I think..I think that is not milk.... I think that is ...um....(thoughtful)
01:45 Maybe the Dad is gonna clean it up

Time 1 example 2)

00:10 *And they have hair..they have fac..they have mouth, nose, even eyes and ears...and a shirt and some pants..shirt, pants, long hair with a ponytail..face, ears, mouth, nose, eyes, shirt and pants...that's all...and a ball..white and black*

00:37 *Maybe that's it 'cause*

00:46 *She has white hair..he has white hair on that end..and he has white pants..he has a white shirt and a black one.. he has hands two hands and two feet*

Duration analysis at clause level indicates that the majority of utterances were longer in mean time than at Time 2 (Table 6e), supporting video evidence that she expressed in a more controlled and paced manner at Time 2 than at Time 1. This is further supported by an analysis of the mean number and duration of silences (Table 6f). In parallel with an increase in the number of utterances at Time 2 was an increase in the number of silences, these being longer in duration compared to Time 1. In Ara's case, this increase at Time 2 was not a matter of a decrease in fluency but rather an increase in her being more thoughtful with her expression compared to Time 1. The mean number of syllables per utterance decreased markedly between Time 1 and Time 2 in parallel with an increase the number of shorter, grammatically tighter utterances at Time 2 (Table 6g).

Hesitancy judgements

The mean number of native-like utterances increased markedly at Time 2 in parallel with an increase in the number of utterances. Both at Time 1 and Time 2, Ara expressed herself in native-like age-appropriate English the majority of the time (Table 6h).

Grammaticality of expression:

Ara expressed herself in age-appropriate standard English at both Time 1 and Time 2 most of the time (Table 6i). Minor errors featured more frequently in Ara's Text 2 utterances, as in these examples:

There is ears, nose
There is lots of cool things and I see botches....
I see no hair.

Content of expression: Proposition types

Ara's texts and utterances both at Time 1 and Time 2 were directly related to the photo context (Table 6j). Major ideas dominated at both times, with a number of minor ideas occurring at Time 2. Because of her more paced utterances at Time 2, more incomplete ideas also featured at Time 2.

Summary

Ara conveyed a sense of boredom when expressing these monologic oral text samples. Of high intelligence and extrovert in nature, used to rich dialogic exchanges with her mother, Ara displayed her expressive competency more when participating in stimulating dialogue than in these oral assessments. The depth and breadth of her vocabulary was evident in the BPVS scores, above norm and well above the eleven other case study students at both Time 1 and Time 2. Her teacher assessed her participatory and discourse behaviours at the highest rating at both points in time. At Time 1 she expressed very short, grammatically simple oral texts whereas at Time 2, her oral text production and expression was more thoughtful, sustained and grammatically complex.

Alo's analysis profile

Alo was a Samoan boy in Year 1 at School A School, aged 5.06 years at Time 1. He responded to classroom activities and lessons without fuss and with focus.

Filters 1 and 2 – CombiList and BPVS

Alo's participatory and expressive effectiveness according to the CombiList criteria placed him in best-fit rating group *Sometimes* (scores between numeric value of 11-20) at Time 1, and *Yes* rating group (numeric value of 21-32) at Time 2 (Table 7a).

Table 7.
Alo's oral text analysis data

Table 7a.
Alo's CombiList & BPVS data

CombiList data	Time 1	Time 2
	16	25
BPVS data		
Chronological age (mths)	66.0	73.0
BPVS age (mths)	39.0	46.0
Std score	79	83

Table 7b.
Utterance data – Alo's oral texts

Length /number of texts	Mean total time	Number
Time 1	1.52	2.0
Time 2	1.77	3.0
Number of utterances	Time 1	Time 2
Mean number	18.5	15.6

His score jumped by 9 criteria points to 25 over six months between Time 1 and Time 2. Alo's vocabulary age as measured by BPVS at Time 1 was a low 39 months. The chronological age-BPVS age score gap was 27 months, this large gap remaining at Time 2. Between Time 1 and Time 2 his standardised score increased by 4, not enough to significantly decrease the age-score gap (Table 7a).

Filter 3 – Oral text production

Complexity and Fluency

Alo expressed two texts at Time 1 with a mean time of 1.52 minutes and at Time 2 three texts with a mean time of 1.77 minutes. While the number of utterances reduced between Time 1 and Time 2, so also did the number and duration of silences (Table 7b). Alo struggled to express ideas at Time 1, found focusing challenging, and veered from the photo topic as he struggled to express meaningfully about them.

Alo's utterances at Time 1 were usually below clause, minimal clauses and expanded clauses, indicative of simple rather than complex grammatical expression (Table 7c).

Table 7c.
Clause analysis – Alo's oral texts

Clause analysis	Time 1	Time 2
below clause	5.0	3.0
minimal clause	4.5	3.0
expanded clause	3.5	3.3
clause complex	0.5	5.3
multi-clauses no complex	4.5	0.3
multi clauses - some complex	0.5	0.7

Table 7d.
Multi-clause utterances – Alo's oral texts

Multi-clause utterances	**Time 1**	**Time 2**
2 cl	3.0	0.3
3 cl	2.0	0.0
4 cl	0.0	0.3
5 cl	0.0	0.3

Table 7e.
Duration – clause analysis – Alo's oral texts

Clause analysis – duration	Time 1	Time 2
below clause	00:08.5	00:04.2
minimal clause	00:10.0	00:05.7
expanded clause	00:07.6	00:15.6
clause complex	00:02.2	00:29.1
multi-clauses no complex	00:22.5	00:04.0
multi clauses - some complex	00:02.4	00:09.3

Table 7f.
Mean number of silences – Alo's oral texts

Number of silences	Time 1	Time 2
Mean per text	17.5	14.7
Duration of silences		
Time - mins:secs	01:03.0	00:40.3

Table 7g.
Syllable per utterance – Alo's oral texts

Syllables per utterance	Time 1	Time 2
Syllables per utterance	6.56	12.46

Table 7h.
Fluency-hesitancy – Alo's oral texts

Hesitancy	Time 1	Time 2
fluid near NS	15.0	8.3
laboured	0.5	0.0
a little hesitant	3.0	7.3

Table 7i:
Grammaticality judgements: Mean number – Alo's oral texts

Grammaticality	Time 1	Time 2
standard English	11.0	10.0
minor error	7.5	5.7
major error	0.0	0.0

Table 7j:
Propositional judgements: Mean number – Alo's oral texts

Propositions	Time 1	Time 2
major idea	3.0	8.3
minor idea	4.0	0.7
combination - major-minor	0.0	0.0
outside idea	6.0	0.7
completing previous idea	2.5	3.3
incomplete idea	3.0	2.7
total own story	0.0	0.0
own story + major	0.0	0.0

At Time 2, the mean number of below clause utterances had decreased by 40% and minimal clauses by 33%. The expressive complexity of Alo's utterances at Time 1 and Time 2 as identified by the use of clause complexes increased nine-fold from Time 1 to Time 2. Multi-clause utterances decreased substantially at Time 2 from Time 1, however at Time 2 the multi-clause utterances contained more

clauses per utterance than at Time 1 (Table 7d). Example text utterances illustrate changes in the complexity of Alo's expression between Time 1 and Time 2.

Time 1 utterances:

a) *They are..I think the jungle*
b) *Jungle..jungle..where's a penguin?*
c) *Yeah...I don't .. I don't see a penguin inside..oh dear..the..the penguin died?*
d) *The penguin died?*
e) *They up the tree*
f) *and they fishing..they eat fish*

At propositional level at Time 1, Alo struggled to express ideas about the monkey family and substituted this gap with semi or non-related ideas. Alo chose the same photo at Time 2. Comparatively, his text utterances showed greater expressive complexity and propositional relevance.

Time 2 utterances:

a) *and they eat some*
b) *bananas..and they climb up on the big trees*
c) *and they do whatever they want to do and they go and do it ..by theirself*
d) *and they eat some bananas up in the tree*
e) *After it's dark they have to go to bed*
f) *and they have to sleep in the trees*

Duration of utterances data at clause level (Table 7e) combined with the number of syllables per utterance (Table 7g) and the number and duration of silences data (Table 7f) indicated Alo's fluency increased markedly at Time 2 compared to Time 1. At Time 1, Alo's utterances indicated a significant increase in mean time of clause complexes in particular, with a 205% increase for expanded clauses. Conversely, below clause and minimal clause utterances decreased in mean duration in parallel with the reduction of the mean number of these utterance types. The mean number of silences paralleled the mean number of utterances expressed by Alo at Time 1 and Time 2. The reduction of duration of silences at Time 2 compared to Time 1 was a significant indicator of more confident fluent expression, utterance by utterance. Time stamped consecutive utterances taken from Time 1 and Time 2 text examples illustrate this, utterances at Time 2 being longer in time and number of syllables. Length of silences between each utterance at Time 1 paralleled that of Time 2, yet his utterances were shorter and less complex than at Time 2.

Time stamp (mins: secs)	Time 1 Utterances
00:42	*There's a sun*
00:45	*there's a bike*
00:50	*Maybe we finish that...How how you spell 'the'?*
00:56	*The*
01:00	*Yep*
01:05	*Yeah*
01:18	*I don't know what...their legs*

Time stamp (mins: secs)	Time 2 Utterances
00:18	*and they were running to kick the ball*
00:31	*and...and the boy just kick the soccer ball in the corn..(?)..and he went*
00:39	*and he started again*
00:44	*the soccer ball was flying up to the air and he went...*
00:51	*Again*
00:57	*and he was...and he was really happy ..how...how...how he was clever to*

play soccer
01:13 and he is the winner and he get a trophy

The mean number of syllables per utterance expressed by Alo increased by 92% from Time 1 to Time 2 (Table 7g), a further indicator of increased expressiveness and fluency across six months.

Hesitancy judgements

Because Alo's utterances at Time 2 were grammatically more complex and longer as measured by the mean number of syllables, he became a little more hesitant with the increased linguistic demand of construction (Table 7h). With shorter, less grammatically complex utterances at Time 1 and thereby less construction demand, his utterances were judged to be more fluent. Thus, from Time 1 to Time 2, near native speaker fluency almost halved as his utterances became more complex, and a little hesitant utterances more than doubled.

Grammaticality of expression

The grammaticality of Alo's utterances at Time 1 and Time 2 stayed more or less the same (Table 7i). At the word group level, Alo was prone to some minor errors typical of English language learners, the dominant language of home and family being Samoan, but in most part, even with more complex utterances his expression in English was standard.

Content of expression: Proposition types

A comparison of text utterances analysed for the mean number of proposition types at Time 1 and Time 2 (Table 7j) showed a marked increase in photo related ideas, and conversely, a marked decrease in non-related ideas (coded 'outside idea'). Minor ideas, such as a penguin, possibly triggered by thoughts about animals, also decreased markedly at Time 2.

Summary

Based on CombiList and BPVS assessments, and oral production analysis evidence, Alo made significant gains in expressive competency and fluency between Time 1 and Time 2. As assessed by his teacher, his participatory and expressive competency in class greatly improved. The complexity and fluency of his expression markedly changed. At Time 2, he expressed ideas of greater lexical and grammatical complexity than at Time 1, and with more fluency and confidence. At Time 1, Alo struggled to express ideas closely related to the photo context due to limitations in vocabulary and linguistic structural expression. At Time 2, his utterances were propositionally relevant and cohesive. There was an increase in utterance hesitancy at Time 2 due primarily to Alo more consciously and carefully constructing elaborative text. However, the length of silences between utterances did not increase, indicative of more fluent mental shaping of text. Grammatical error at the word group level in particular, typical of second language learners, was evident at both Time 1 and Time 2, however, overall he expressed using comprehensible standard English.

Rana's analysis profile

Rana was a female Year 2 student of mixed Tongan-Samoan ethnicity at School As, aged 5.02 years at Time 1. She was one of a twin, her special needs sister in the same class of whom she was very protective.

Filters 1 and 2 – CombiList and BPVS

Rana's participatory and expressive effectiveness as measured by teacher-assessed CombiList criteria placed her in best-fit rating group *Sometimes* (scores between numeric value of 11-20) at Time 1, and *Yes* rating group (numeric value of 21-32) at Time 2. She made a substantial shift towards more effective participation and discourse over six months between Time 1 and Time 2, her score improving by 6 criteria points. Her vocabulary age as measured by the British Picture Vocabulary Scale increased significantly between Time 1 and Time 2, gaining 19 months in BPVS age and 9 standard score points (Table 8a).

Table 8.
Rana's oral text analysis data

Table 8a.
Rana's CombiList & BPVs data

CombiList data	Time 1	Time 2
	20	26
BPVS data		
Chronological age (mths)	63.0	69.0
BPVS age (mths)	45.0	64.0
Std score	87	96

Filter 3 – Oral text production

Complexity and Fluency

At Time 1 Rana struggled to produce any coherent text. Her utterances were minimal and halting, the task of expressing proving overwhelming. Her two texts consisted largely of single words followed by extended pauses. At Time 2 her confidence, fluency and complexity of expression of three oral texts had increased significantly. The mean time of texts at Time 2 was slightly less than at Time 1 (Table 8b), the number of silences almost the same, but the duration of silences markedly decreased, indicative of her increased fluency and confidence at Time 2 (Tables 8c).

At Time 1, Rana's utterances were primarily below clause level, dominantly single word utterances. There were a small number of minimal clause utterances and one clause complex: *(Dad) said, 'Look out sandcastle.'* At Time 2, below clause level utterances were five times less, minimal clauses decreased by 1.8, while expanded clauses and multi-clause utterances increased from nil to 4.3 and 1.4 respectively, and clause complexes increased by 4.6 (Table 8d). While multi-clause utterances

were confined to no more than 5 clauses per utterance, Rana's complexity of expression at Time 2 was in stark contrast to her expression at Time 1 (Table 8e).

Table 8b.
Number of texts - Rana's oral texts

Length /number of texts	Mean total time	Number
Time 1	3.65	2.0
Time 2	2.24	3.0

Table 8c.
Number of silences - Rana's oral texts

Number of silences	Time 1	Time 2
Mean per text	4.7	4.5
Duration of silences		
Time - mins:secs	03:04.8	01:20.8

Table 8d.
Clause analysis - Rana's oral texts

Clause analysis	Time 1	Time 2
below clause	21.5	4.3
minimal clause	5.5	3.0
expanded clause	0.0	4.3
clause complex	0.5	2.3
multi-clauses no complex	0.0	0.7
multi clauses - some complex	0.0	0.7

Table 8e.
Multi-clause utterances - Rana's oral texts

Multi-clause utterances	Time 1	Time 2
2 cl	0.0	0.7
3 cl	0.0	0.3
4 cl	0.0	0.3
5 cl	0.0	0.0

Table 8f.
Duration – clause analysis - Rana's oral texts

Clause analysis – duration	Time 1	Time 2
below clause	00:26.0	00:07.6
minimal clause	00:10.6	00:07.1
expanded clause	00:00.0	00:16.3
clause complex	00:04.3	00:20.3
multi-clauses no complex	00:00.0	00:04.5
multi clauses - some complex	00:00.0	00:09.9

Table 8g.
Syllables per utterance - Rana's oral texts

Syllables count	Time 1	Time 2
Mean number per utterance	1.8	7.2

Table 8h.
Hesitancy judgements -

Hesitancy	Time 1	Time 2
fluid near NS	2.5	8.7
laboured	25.0	6.7
a little hesitant	0.0	0.0

Table 8i.
Grammaticality judgements: Mean number - Rana's oral texts

Grammaticality	Time 1	Time 2
standard English	25.5	7.0
minor error	2.0	7.0
major error	0.0	1.3

Table 8j.
Propositional judgements: Mean number - Rana's oral texts

Mean number of utterances	Time 1	Time 2
	27.5	15.3
Propositions		
minor idea	0.5	0.0
combination - major-minor	0.0	0.7
outside idea	0.0	0.7
completing previous idea	10.5	1.7
incomplete idea	15.5	2.7
total own story	0.0	0.0
own story + major	0.0	0.0

Time 1 and Time 2 text examples illustrate the change in complexity of Rana's utterances. Along with this change was a change in fluency, content of expression and vocabulary.

Time 1 example:
a) *girl*
b) *climbing*
c) *up*
d) *little girl*
e) *there's a little boy*

Time 2 example:
a) *She's beautiful*
b) *but she's playing by herself*
c) *Dad was putting the sand into..the castle..and is..girl was climbing up in the castle*
d) *Four boys was wearing the..Two girls was wearing ..red..but the two..All the the kids was wearing they shoes and they riding the bike..and*

As was expected from the mean number clause analysis data, the mean duration of utterances at simple clause and below clause level decreased considerably between Time 1 and Time 2 (Table 8f). In contrast, at Time 2, there was an increase in duration for all clause types above minimal clause, especially expanded clauses and clause complexes. The mean number of syllables per utterance increased four times, with a mean difference of 5.8 syllables per utterances between Time 1 and Time 2 (Table 8g). These examples are indicative of the extent of fluency and complexity gain by Rana between Time 1 and Time 2.

Time 1 example:
02:20 *riling the bike*
02.40 *and*
02.47 *they*
02:49 *riding the bike*
03:07 *they riding the bike*
03:23 *on*

Time 2 example:
00:01 *The..two kids is playing with the castle and the sand*
00.10 *off They climbing up ..in the castle*
00.18 *Dad was putting the sand into..the castle..and is..girl was climbing up in the castle*
00.38 *The wave came towards the castle*
00.46 *and they made...and the two kids was made it*
00.53 *and the dad was looking at the sea*

Hesitancy judgements

The number of utterances expressed by Rana was reduced by 44.4% from Time 1 to Time 2 as a result of her more fluent and sustained expression per utterance at Time 2 compared to the many one or two word consecutive utterances at Time 1. At Time 1 Rana's utterances were predominantly laboured (Table 8h). While dysfluency was not calculated numerically, the high incidence of laboured utterances suggests a high level of dysfluency. At Time 2 laboured utterances were minimal and the majority of utterances were of near native speaking quality.

Grammaticality of expression

The grammaticality data needs to be interpreted in Rana's case in light of her minimal utterances at Time 1, dominated by single word utterances (Table 8i). These utterances were judged to be standard English, not error prone as are word group or clause structures. The few errors that occurred at Time 1

were at word level, either mispronunciation or misuse of a word, (it was difficult to differentiate which), which were comprehensible contextually and thus deemed minor. At Time 2, Rana's standard English constructions decreased and the number of minor errors increased, in line with the greater number of expanded clauses, clause complexes and multi-clause utterances she expressed, placing greater demand on her grammatical resources with greater potential for grammatical error. Thus the shift from more to less standard English utterances in Rana's case needs to be seen as a gain.

Content of expression: Proposition types

The majority of Rana's utterances at Time 1 were either completing a previous utterance, haltingly constructing ideas on a word by word basis, or incomplete, non-elaborated ideas (Table 8j). There was a change in propositional quality from Time 1 to Time 2, with almost all utterances at Time 2 being relevant to the photo context. Conversely, there was a marked reduction in incomplete ideas or completing previous ideas.

Summary

Rana's linguistic competency improved significantly between Time 1 and Time 2. At Time 1, her vocabulary and expressive resources were severely limited. At Time 2, she had closed the vocabulary chronological-BPVS age gap from 20 months to 7 months. On all scored complexity and fluency indicators based on oral text assessment coding, Rana's utterances significantly increased in complexity and fluency. This combined evidence suggested a significant leap in expressive competency over six months. This was further supported by teacher observational assessment data using CombiList criteria ratings, moving from an overall rating of *Sometimes* to *Yes* in terms of participatory and expressive effectiveness in the classroom.

Api's analysis profile

Api was a female Tongan Year 2 student at School B School, aged 6.01 years at Time 1. She was a quiet and conscientious student, especially considerate of other students in her class.

Filters 1 and 2 – CombiList and BPVS

Api's participatory and expressive effectiveness as measured by teacher-assessed CombiList criteria placed her in best-fit rating group *Yes* (scores between numeric value of 21-32) at both Time 1 and Time 2. Her score slightly increased at Time 2. Api's vocabulary age as measured by BPVS did not progress commensurate with her age at Time 1 and Time 2 (Table 9a). Her BPVS standardised score decreased slightly between Time 1 and Time 2 moving her from the close-to-mid average band at Time 1 to low average at Time 2.

Complexity and Fluency

At both Time 1 and Time 2 Api was quite reserved although she appeared more confident and at ease at Time 2. She produced three oral texts at Time 1, and two at Time 2. The mean time of texts at Time 2 was slightly longer than at Time 1 indicative perhaps of a number of competency gains (Table 9b).

Table 9.
Api's oral text analysis data

Table 9a.
Api's CombiList & BPVS data

CombiList data	Time 1	Time 2
	27	29
BPVS data		
Chronological age (mths)	73	79
BPVS age (mths)	71	73
Std score	99	96

Table 9b.
Text number & length – Api's oral texts

Length /number of texts	Mean total time	Number
Time 1	2.66	3.0
Time 2	3.65	2.0

Filter 3 – Oral text production

Api's expression analysed at clause level showed a considerable shift in complexity between Time 1 and Time 2 (Table 9c).

Table 9c.
Clause analysis Api's oral texts

Clause analysis	Time 1	Time 2
below clause	8.0	5.0
minimal clause	6.3	3.0
expanded clause	4.3	2.5
clause complex	3.7	2.5
multi-clauses no complex	0.0	0.5
multi clauses - some complex	0.0	1.5

Table 9d.
Multi-clause utterances - Api's oral texts

Multi-clause utterances	Time 1	Time 2
2 cl	0.0	0.5
3 cl	0.0	0.0
4 cl	0.0	0.0
5 cl	0.0	0.0
6 cl	0.0	0.0
7 cl	0.0	0.0
8 cl	0.0	0.0
9 cl	0.0	0.5
10 cl	0.0	0.5

Table 9e.
Duration – clause analysis - Api's oral texts

Clause analysis – duration	Time 1	Time 2
below clause	00:13.1	00:12.9
minimal clause	00:18.0	00:07.7
expanded clause	00:20.8	00:31.5
clause complex	00:15.2	00:22.8
multi-clauses no complex	00:00.0	00:08.7
multi clauses - some complex	00:00.0	01:32.4

Table 9f.
Syllables per utterance - Api's oral texts

Syllables count	Time 1	Time 2
Mean number per utterance	5.7	13.9

Table 9g.
Hesitancy judgements - Api's oral texts

Hesitancy	Time 1	Time 2
fluid near NS	11.7	1.5
Laboured	10.7	2.5
a little hesitant	0.0	11.0

Table 9h.
Fluency – number and duration of silences - Api's oral texts

Number of silences	Time 1	Time 2
Mean per text	21.3	14.0
Duration of silences		
Time - mins:secs	01:48.8	01:22.9

Table 9i.
Grammaticality judgements: Mean number - Api's oral texts

Grammaticality utterance judgements: Mean number	Time 1	Time 2
standard English	18.0	13.5
minor error	3.7	1.5
major error	0.7	0.0

Table 9j.
Propositional judgements: Mean number - Api's oral texts

Mean number of utterances	Time 1	Time 2
	22.3	15.0
Propositions	Time 1	Time 2
major idea	12.0	6.5
minor idea	1.3	1.5
combination - major-minor	0.0	0.0
outside idea	0.7	0.0
completing previous idea	8.0	4.0
incomplete idea	0.3	3.0
total own story	0.0	0.0
own story + major	0.0	0.0

The high number of below clause utterances at Time 1 reduced 1.6 times, minimal clauses by 2.1 times and expanded clauses by 1.72 times. Conversely, while Api expressed fewer complex clauses at Time 2 than Time 1 (reduced by 1.48), she produced more multi-clause utterances, a mean number of three multi-clause utterances at Time 2, indicative of increased fluency in ideas shaping and expression. These Time 2 multi-clause utterances (Table 9d) included one 2-clause, 9-clause and 10 clause utterances respectively indicative of a degree of complexity and sustainability not evident at Time 1.

Api's more sustained expression at Time 2 was reflected in the mean duration of utterances, indicative of more sustained and complex expression (Table 9e). The duration of clause complexes at Time 2, albeit fewer in number than at Time 1, was 0.67 times longer than at Time 1, suggesting more complex and sustained clause complexes expressed. Time 1 and Time 2 text examples illustrate Ana's more sustained expression at Time 2 at the clause complex level.

Time 1 example:
a) *... and they know how to ride a bike*
b) *It's look like they trying to get the score.*

Time 2 example:
a) *They have red..colourful and blue helmets and..are riding it..ready to ride it on the road.*
b) *...and ..the two girls are wearing white shorts and the boys are wearing white and blue...blue pants*

The greater mean number of syllables per utterance at Time 2 compared to Time 1 supported clause level data in regard to Api's marked increase in expressive complexity and fluency (Table 9f). Examples from Time 1 and Time 2 illustrate this.

Time 1 example:

02:13 *skin colours are kind of white*
02:21 *they have smiles on their face*
02:27 *they have wheels on their bikes*
02:44 *and the wheel colours are white, black and blue....*
03:00 *and black and then black again*
03:05 *and they riding on the road road safely*

Time 2 example:

00:07 *They have helmets to keep them safe and bikes..The girl has a barbie pink bike and the boys have green, blue and grey bikes. They have red..colourful and blue helmets and..are riding it..ready to ride it on the road. They have smiles and have smiles..and have shoes and socks and pants and shirts..jumpers on them because they are cold ..it outside*

01:26 *They have tee shirt, blue shirt, black..blue, white, purple, pink tee shirts and are ready to ride on the road. They are so happy that they are ready to ride because they have smiles on their faces. They have black, blue, beautiful eyes and red..and yellow start on his helmet. They have pedals and shoes to. When they push the shoe on the pedal it moves.*

Hesitancy judgements

At Time 1 Api was initially quite hesitant and laboured as she tried to express her ideas (Table 9g). As she gained confidence and felt more comfortable with the process, she expressed with more fluidity and ease. At Time 2, native-like utterances significantly reduced, as did laboured utterances. At the same time, utterances with a little hesitancy became evident. Her decrease in native-like fluency at Time 2 was linked to Api expressing more complex utterances with greater conceptual and grammatical demand. The greater number of minimal clauses uttered by Api at Time 1 put less complex semantic and grammatical demand on her and thus her expression of these simple utterances was more fluent. She expressed more complex ideas, pushing her grammatically and lexically, yet seldom were her utterances laboured or dysfluent (Hilton, 2008), unlike her expression at Time 1.

The mean number and duration of silences in texts at Time 1 and Time 2 further indicated Api's increased fluency at Time 2 (Table 9h). There were fewer and less sustained silences at Time 2 than at Time 1. This reduction in silences was significant as an indicator of Api's capacity to shape and express more complex ideas with greater fluency and confidence.

Grammaticality of expression

Api's utterances were generally expressed in standard English, with but a few minor errors occurring at both Time 1 and Time 2 (Table 9i). The fewer number of standard English utterances at Time 2 reflected the fewer but more sustained utterances compared to Time 1. Considering Api's increased expressive complexity at Time 2, placing greater demand on her grammatical resources, the low occurrence of grammatical error is notable.

Content of expression: Proposition types

Unlike some other case study students, Api's text expression was consistently relevant to the context of the photo both at Time 1 and Time 2 (Table 9j), all her utterances either major ideas or completing major ideas of the previous utterance.

Summary

Overall, between Time 1 and Time 2, there was a significant shift in the grammatical and lexical complexity of Api's expression. Contrary to this trend, BPVS measures indicated a slight negative shift in vocabulary across six months. In the oral text samples, however, an increase in low frequency vocabulary was evident in the Time 2 texts compared to Time 1 texts, suggesting a gain in vocabulary across six months. Based on clause level analysis, Api's linguistic competency moved from less complex utterances at Time 1 to considerably more complex utterances at Time 2.

Overall she was more fluent and confident at Time 2, with a reduction in laboured utterances from Time 1. Because she expressed more complex and sustained utterances at Time 2, pushing her cognitive and grammatical resources, there was a slight increase in minimal hesitancy.

Mele's analysis profile

Mele was a female student of mixed Samoan and Tongan ethnicity in Year 2 at School B School, aged 5.11 years at Time 1.

Filters 1 and 2 – CombiList and BPVS

Mele's participatory and expressive effectiveness as measured by teacher-assessed CombiList criteria placed her in best-fit rating group *Sometimes* at Time 1 (numeric value of 11-20) and in the *Yes* group at Time 2, her teacher identifying a noticeable improvement in her participation and expression in class, with a rating change of 9 criteria points. At Time 1, Mele's chronological age-BPVS age score gap was 24 months, slightly increasing to 26 months at Time 2 (Table 10a).

Between Time 1 and Time 2 her standardised score remained the same at 83, putting her in the moderately low percentile band. Based on BPVS standard score measures, Mele made no progress across six months but neither did she regress.

Between Time 1 and Time 2 her standardised score remained the same at 83, putting her in the moderately low percentile band. Based on BPVS standard score measures, Mele made no progress across six months but neither did she regress.

Filter 3 – Oral text production

Complexity and Fluency

Mele was particularly quiet and reserved at Time 1 but was much more relaxed and confident at Time 2. Her teacher reported that she looked forward to the Time 2 oral assessment whereas at Time 1 she

was feeling nervous and somewhat reluctant. She produced three texts at Time 1 and two texts at Time 2 (Table 10b), with the mean time of texts slightly longer at Time 2 as she more fluently and confidently expressed her ideas. There was little change in the mean number of text utterances from Time 1 and Time 2. Mele's expression at clause level between Time 1 and Time 2 showed a considerable shift (Table 10c).

Table 10.
Mele's oral text analysis data

Table 10a.
Mele's CombiList & BPVS data

CombiList data	Time 1	Time 2
	18	27
BPVS data		
Chronological age (mths)	72.0	78.0
BPVS age (mths)	48.0	52.0
Std score	83	83

Table 10b.
Text number & length – Mele's oral texts

Length /number of texts	Mean total time	Number
Time 1	3.18	3.0
Time 2	3.81	2.0

Table 10c.
Clause analysis: Mean number – Mele's oral texts

Clause analysis	Time 1	Time 2
below clause	5.7	3.0
minimal clause	2.3	3.5
expanded clause	2.3	1.5
clause complex	1.3	4.5
multi-clauses no complex	2.0	3.0
multi clauses - some complex	0.7	1.0

Table 10d.
Multi-clause utterances – Mele's oral texts

Multi-clause utterances	Time 1	Time 2
2 cl	1.0	3.0
3 cl	0.0	0.0
4 cl	1.0	0.0
5 cl	0.3	0.5
6 cl	0.0	0.0
7 cl	0.3	0.0
8 cl	0.0	0.0
9 cl	0.0	0.5

Table 10e.
Duration – clause type – Mele's oral texts

Clause analysis – duration	Time 1	Time 2
below clause	00:18.3	00:03.1
minimal clause	00:16.4	00:15.3
expanded clause	00:35.4	00:17.6
clause complex	00:25.2	01:32.1
multi-clauses no complex	00:57.2	00:34.1
multi clauses - some complex	00:24.7	00:46.7

At Time 1 the majority of Mele's text sample utterances comprised below clause, simple clause or expanded clause utterances, with a low number of clause complexes or multi clause utterances. In contrast, at Time 2, while there remained a number of simple utterances, she expressed significantly more clause complex and multi-clause utterances, indicative of greater grammatical complexity of expression. She expressed a mean of 2.7 multi-clause utterances at Time 1, ranging from two 2-clause utterances to a 7-clause utterance, while at Time 2 she expressed a mean of four multi-clause utterances ranging from three 2-clause utterances to a 9-clause utterance indicating that Mele had

become more complex in her expressive competency (Table 10d). Based on this analysis, Mele had become more complex in her expressive competency at Time 2 compared to Time 1.

Table 10f.
Syllables per utterance – Mele's oral texts

Syllables count	Time 1	Time 2
Mean number per utterance	13.4	13.8

Table 10g.
Hesitancy judgements – Mele's oral texts

Hesitancy	Time 1	Time 2
fluid near NS	0.3	0.5
Laboured	9.7	7.5
a little hesitant	4.3	8.5

Table 10h.
Fluency – number and duration of silences – Mele's oral texts

Number of silences	Time 1	Time 2
Mean per text	13.3	15.5
Duration of silences		
Time - mins:secs	00:36.0	00:57.7

Table 10i.
Grammaticality judgements: Mean number – Mele's oral texts

Grammaticality	Time 1	Time 2
standard English	5.7	7.0
minor error	8.7	9.5
major error	0.0	0.0

Table 10j.
Propositional judgements – Mean number - Mele's oral texts

Propositions	Time 1	Time 2
major idea	4.3	10.5
minor idea	0.7	0.0
combination - major-minor	2.7	0.0
outside idea	0.0	0.0
completing previous idea	4.3	1.0
incomplete idea	2.3	5.0
total own story	0.0	0.0
own story + major	0.0	0.0

Analysis of duration of Mele's utterances at the clause level indicated more time spent on expressing in clause complexes and multi-clause utterances at Time 2 than at Time 1, indicative of expanded grammatical expression as well as greater fluency at Time 2 (Table 10e). The mean number of syllables per utterance changed little between Time 1 and Time 2 (Table 10f). This may appear contrary to clause level data in terms of length and complexity, but is explainable when utterances at Time 1 and Time 2 are examined and compared. For example, compare these two examples, the first at Time 1, the second at Time 2:

Time 1 example
00:29 and a brown hair and who...the boy who have blue tee shirt and a ..and a brown hair and a white pants
00:48 and they're playing ringa rosie in a circle at the park and the..They have..The boy have blue tee shirt and white....and white pants and brown hair

01:15 *The girl who have pink..pink..pink tee shirt and pink..and white sh...little shorts and shoes..pink shoes and dark brown hair....*
01:35 *and the one who have pink tee shirt and a short and socks and chucks and the...and she have black hair tied up and the girl who have butterfly pink chucks and..and short jeans and..and white shoes with socks*

Time 2 example
03:23 *I can see the girl have a tatoo on her hand and there's flowers on her stocking and I can see her teeth is white and shining and her lip is pink*
03:53 *I can see her eyes are black and her tielaces are red like her shoes*
04:11 *I can*
04:26 *Her ribbons are pink and she...tie them up is like a pon...like two ponytails and her leg ...and her...her whole body is white*

A complete analysis of all Mele's texts indicated the balancing out of longer and shorter utterances at Time 1 against fewer short utterances and most utterances lengthier at Time 2, explaining the largely unchanged mean number of syllables from Time 1 to Time 2.

Hesitancy judgements

Analysis of Mele's fluency based on qualitative hesitancy judgements of utterances at Time 1 and Time 2 indicated less laboured expression at Time 2, but an increased number of utterances a little hesitant compared to Time 1 (Table 10g). With an increase in complexity and duration of utterances at Time 2, greater demand was placed on Mele's grammatical resources, resulting in some hesitancy as she formulated more complex ideas into utterances. Taking dysfluency qualitatively as 'laboured', Mele decreased the number of dysfluent utterances at Time 1 compared to Time 2, and increased the number of more fluent utterances (a little hesitant) at Time 2. The mean number of silences is directly related to the mean number of utterances expressed at Time 1 and Time 2 (Table 10h). The duration of silences increased at Time 2 as Mele took more time to mentally construct her thoughts into utterances before expressing.

Grammaticality of expression

Mele's expression contained no major grammatical structural errors but numbers of minor errors occurred both at Time 1 and Time 2 (Table 10i). These minor errors comprised primarily of verb agreement, plural endings, omission of structural words in some word groups, and misconstrued vocabulary items, however, these minor errors did not interfere with text and utterance comprehensibility.

Examples of Time 1 minor grammatical error:
a) *the boy who have blue tee shirt and a ..and a brown hair and a white pants*
b) *and she have black hair tied up and the girl who have butterfly pink chucks and they're holding hand like a woggly monster*
c) *the kids is playing on the grass sunshine*
d) *They can pad-al their bike*

Examples of Time 2 minor grammatical error:
e) *There's ...there's a hard trees*
f) *There some bird land on the um…*
g) *I can see the girl have a tatoo on her hand*
h) *The girl is wearing a dress and no shoes on. She have long..she have short hair and white...and white sleeve.*

Considering that Mele's utterances were more complex and fluent at Time 2, and thus more grammatically demanding, a minimal rise in the mean number of minor errors is not unexpected.

Alongside this was also a small increase in standard English utterances from Time 1 to Time 2. Her grammatical errors typify those of an English language learner, influenced by the tri-lingual nature of language use at home with Samoan and Tongan being predominantly used by adults in her family.

Content of expression: Proposition types

At Time 1, descriptions of colours, clothes and facial features dominated Mele's propositions, and she struggled to express depth of ideas related to action. At times she began an idea which she was not able to sustain, accounted for in the higher mean number of completing previous ideas and incomplete ideas at Time 1 compared to Time 2 (Table 10j). At Time 2, there was a marked increase in major ideas from Time 1 and while incomplete ideas also more than doubled, notable was the more thematically rich utterances Mele expressed. Mele's propositions changed in depth and conceptual breadth from Time 1 and Time 2, as in these two examples, the first from Time 1, the second from Time 2, illustrate:

Time 1 example

00:04 *Everybody was riding their bikes..One who have barbie..They have ....they had hat on at the playground*
00:28 *shirt and a black pants and a white ...white singlet*
00:29 *The boy he have white tee shirt and a hat and a blue boke and black pants and a black shoe. The girl have flowers purple and stocking..and a white one she have..she have sandals and a pants and a hat and a barbie bike. The girl she have a ..a jumper, tee*
01:34 *and her shoes and her pants*
01:43 *and the boy ..he have white ..He have black..black sleeve and black pants and black shoes and black shoes and white socks*
02:08 *and the blue*
02:16 *and the blue..who have blue sleeves and blue..blue short..and a shoes and a blue hat and a bike*

Time 2 example

02:10 *There are...there's*
02:15 *sticks on the ground and I can see a ..pets and....piece of...back of.....pets near the tree and the pet is eating the ...grass*
03:01 *There some bird land on the um.....the ground and.....*
03:14 *and singing*
03:23 *I can see the girl have a tatoo on her hand and there's flowers on her stocking and I can see her teeth is white and shining and her lip is pink*
03:53 *I can see her eyes are black and her tielaces are red like her shoes*
04:11 *I can*
04:26 *Her ribbons are pink and she...tie them up is like a pon...like two ponytails and her leg ...and her...her whole body is white*

Summary

Based on CombiList and BPVS assessments, and oral production analysis evidence, Mele made significant gains in expressive competency and fluency between Time 1 and Time 2. As assessed by his teacher, her participatory and expressive competency in class improved and the complexity and fluency of her expression changed in significant ways. This was not reflected in the BPVS scores contrary to other expressive evidence indicating significant gains. At Time 2, Mele expressed her ideas with increased lexical and grammatical complexity compared to structurally and lexically simpler utterances at Time 1. Overall, she was more fluent and confident in expressing her ideas at Time 2, although there was some increase in minimal hesitancy as she consciously sought to express more complex text and ideas. The duration of silences reflected the cognitive effort required. At both

Time 1 and Time 2, Mele's propositions were directly related to the photo context, however, there was greater propositional and vocabulary depth and breadth at Time 2. Although Mele's expression at Time 1 and Time 2 included minor grammatical errors typical of second language learners, her expression was completely comprehensible.

Palo's analysis profile

Palo was a new entrant male Samoan student in Year 1 at School B School, aged 5.02 years at Time 1. Attendance records showed Palo was frequently absent from school, according to his teacher kept home by his doting grandparents who were significant caregivers in his life.

Filters 1 and 2 – CombiList and BPVS

Palo's participatory and expressive effectiveness as measured by teacher-assessed CombiList criteria placed him in best-fit rating group *Sometimes* at Time 1 (numeric value of 11-20) and in the *Yes* group at Time 2, his teacher identifying some improvement in his participation and expression in class. At Time 1 Palo had been at school only two months and was still adjusting to the culture of learning and classroom routines and practices. He was quiet in class but seemed at ease during the assessment sessions. Because the only best fit *No* student in the class were special needs, on discussion with the teacher, Palo was identified as the closest best fit *No* student (Table 11a).

At Time 1, Palo's chronological age-BPVS age score gap was 16 months, increasing markedly to 26 months at Time 2. His standardised scores also decreased in parallel from 91 at Time 1 to 82 at Time 2. Based on BPVS standard score measures, Palo's vocabulary markedly regressed, not making the gains needed to minimise or close the gap at Time 1.

Table 11.
Palo's oral text analysis data

Table 11a.
Palo's CombiList & BPVs data

CombiList data	Time 1	Time 2
	19	23
BPVS data		
Chronological age (mths)	62.0	68.0
BPVS age (mths)	48.0	42.0
Std score	91	82

Table 11b.
Text number & length – Palo's oral texts

Length /number of texts	Mean total time	Number
Time 1	1.21	3.0
Time 2	2.21	2.0
Utterances per texts	Time 1	Time 2
Mean number	4.8	5.5

Filter 3 – Oral text production

Complexity and Fluency

Palo produced three texts at Time 1 and two texts at Time 2, with an increase in mean time of texts at Time 2 (Table 11b). At Time 1 his longest text was 1.41 minutes; at Time 2 3.40 minutes. In parallel, there was an increase in the mean number of utterances at Time 2.

An analysis of Palo's expression at clause level between Time 1 and Time 2 presented a mixed picture (Table 11c). There were fewer below clause and simple clause utterances, and more clause complexes at Time 1 than at Time 2, suggesting a decrease in expressive complexity. Where complexity gains were evident at Time 2 was at the multi-clause level (Table 11d).

Table 11c.

Clause analysis: Mean number – Palo's oral texts

Clause analysis	Time 1	Time 2
below clause	0.3	1.0
minimal clause	0.0	1.5
expanded clause	0.3	0.0
clause complex	3.3	1.5
multi-clauses no complex	0.3	0.0
multi clauses - some complex	1.3	1.5

Table 11d.

Multi-clause utterances: Mean number – Palo's oral texts

Multi-clause utterances	Time 1	Time 2
2 cl	0.0	0.0
3 cl	0.3	0.0
4 cl	0.7	0.0
5 cl	0.0	0.0
6 cl	0.0	0.0
7 cl	0.7	0.0
8 cl	0.0	0.0
9 cl	0.0	0.0
10 cl	0.0	0.5
11 cl	0.0	0.5
12 cl	0.0	0.0
13 cl	0.0	0.5

Table 11e.

Duration – clause type – Palo's oral texts

Clause analysis – duration	Time 1	Time 2
below clause	00:00.3	00:02.8
minimal clause	00:00.0	00:04.7
expanded clause	00:01.3	00:00.0
clause complex	00:43.2	01:09.2
multi-clauses no complex	00:05.8	00:00.0
multi clauses - some complex	00:37.1	01:30.1

Table 11f.

Syllables per utterance – Palo's oral texts

Syllables count	Time 1	Time 2
Mean number per utterance	38.5	57.1

Table 11g.

Hesitancy judgements – Palo's oral texts

Hesitancy	Time 1	Time 2
fluid near NS	4.3	1.0
Laboured	0.0	2.0
a little hesitant	1.3	2.5

Table 11h.

Fluency – number and duration of silences – Palo's oral texts

Number of silences	Time 1	Time 2
Mean per text	4.7	4.5
Duration of silences		
Time - mins:secs	00:14.3	00:25.1

Table 11i.

Grammaticality judgements: Mean number – Palo's oral texts

Grammaticality	Time 1	Time 2
standard English	1.3	3.0
minor error	4.3	2.5
major error	0.0	0.0

Table 11j.

Propositional judgements – Mean number - Palo's oral texts

Propositions	Time 1	Time 2
major idea	3.0	0.5
minor idea	0.3	0.0
combination - major-minor	2.0	0.0
outside idea	0.0	0.0
completing previous idea	0.0	0.5
incomplete idea	0.3	2.0
total own story	0.0	0.0
own story + major	0.0	2.5

At Time 2, Palo expressed multi-clause utterances with a greater number of clauses than at Time 1. For example:

Time 1 multi-clause utterance examples:

a) *Luka and me ..um playing soccer with my friends and I was playing with the ball and the grass and I shout ..to ..with the gate to ...let you play with something else*
b) *That's what he said and he wants ...to the water to go beach..with his brother and his sister if you like to go in the water to play ..End of the story*

Time 2 multi-clause utterance examples:

c) *feeding the horsie ..let him eat the ..the grass..and the horsie came and licked her all the time and the horsie played with her and the..the horsie..and the girl play with her hide and seek with his horsie horsie..and the girl said 'Ready' and*
d) *The doggie was sitting and the man came and get some food for him and he ate some..and the doggie went outside to play with his friend and..and..the..um ..and the cat came and play with him..with the ..with the pool and the doggie and the cat went to the*

Palo's multi-clause utterances at Time 2 suggest he was more willing and able to express more complex ideas than at Time 1. Mean duration of utterances at the clause level indicated Paul's below clause and minimal clause utterances increased in duration at Time 2 compared to Time 1 (Table 11e), as did the duration of clause complex and multi-clause utterances. This increase in mean duration aligned with the mean number multi-clause and clause type data. With the exception of

expanded clauses, the mean duration of all clause types increased at Time 2 indicative of more sustained expression than at Time 1.

The mean number of syllables per utterance increased 140% from Time 1 to Time 2 (Table 11f), further supporting evidence of more sustained utterances at Time 2. Time 1 and Time 2 examples illustrate Palo's increase in sustained utterances.

Time 1 example

00:04 *'Can I go to the beach Dad?' ...That what he said..'Can I do this?'*
00:12 *That's what he said and he wants ...to the water to go beach..with his brother and his sister if you like to go in the water to play ..End of the story*
00:29 *sit on it*
00:35 *The water was ...was trying to wet the sister and the brother...um...to swim all the way to ...um...to mum...?because? He wants to go there ...and...and the brother was...um puttiing his hand in the house..with...a can house to um...go in if he can*
01:20 *and that's why the end of the story*
01:27 *and Dad*
01:30 *and Dad was looking over there ..um..He..he (l)use some ...um..um legs ..um..to um....look around there...That's the end of the story*

Time 2 example

00:00 *Pool to have a swim with...to the shower with..to clean his dog and the..and the man came and and the man came came in the water and he splash the water and the dog came and lick him*
00:04 *The doggie was sitting and the man came and get some food for him and he ate some..and the doggie went outside to play with his friend and..and..the..um ..and the cat came and play with him..with the ..with the pool and the doggie and the cat went to the*
01:14 *retire to get the ball and play*
01:16 *And the dog came in the house and he..he wash heself and he went to watch TV and he went to Manukau to buy..to buy some food for him to eat ..and he want to the ..the Manukau. He went to Pak n' Save to get um..ah..exercise for him..for him to um to*

Hesitancy judgements

An analysis of Palo's fluency based on utterance hesitancy judgements at Time 1 and Time 2 again presented a mixed picture (Table 11g). Native-like utterances decreased at Time 2, while utterances that were a little hesitant or laboured increased. It would appear that as Palo pushed his grammatical resources at Time 2 as he endeavoured to construct and express more complex and sustained utterances, his fluency was also affected. For example, compare two utterances, one from Time 1 and the other from Time 2:

Time 1 utterance:

and the monkey was..um..looking over there and the monkey was looking over there and the monkey was looking over there and the monkey was looking over there and the monkey was..and the man and the boy was looking for the monkey to..um..to see him..

Time 2 utterance:

and the girl ..was ..and the boy came and ..and the boy came and hug the girl and..and he ride on the horsie and the boy..The..the man came and ride on the horsie and the..the..all..and the all..and the all...and the all farm see came and lick her

The hesitancy evident in the final part of Palo's Time 2 utterance may be due to the complexity of idea he was trying to construct. In contrast, the Time 1 utterance was simply a repeat of word groups expressed fluently but not pushing Palo's grammatical resources as did the Time 2 text. The mean number of silences was directly related to the mean number of utterances expressed at Time 1 and

Time 2 (Table 11h). The duration of silences increased at Time 2 as Palo took more time to mentally construct his thoughts into utterances before expressing.

Grammaticality of expression

There were no major grammatical errors at Time 1 and Time 2 (Table 11i). Minor errors almost halved at Time 2 compared to Time 1, while the mean number of standard English utterances more than doubled. Palo's minor errors in English construction typify not only the fact that the major language of use in the home was Samoan, his early years of language experience and use, but also the developmental patterns of a young learner of English. Minor errors include the inaccurate use of prepositions, verb agreement, omission of words in word groups, seemingly favouring first language structures over standard English grammatical structures.

Examples of Time 1 minor grammatical error:

i) *and you can just play with yourself to*
j) *You can take picture like a monkey ..the end of the story*
k) *What animal he can do and the end of the story*
l) *and that's why he have to play rugby and that's it*

Examples of Time 2 minor grammatical error:

m) *the horsie came and find her and the horsie was sitting down and the ..girl came and lied on him*
n) *….and he splash the water and the dog came and lick him*
o) *and he..he wash heself*

Content of expression: Proposition types

Many of Palo's propositions were imaginative or beyond the photo context at both Time 1 and Time 2, including dialogue as part of the text at Time 1, and home and family contexts as part of Time 2 texts. These propositions were obviously triggered by his thinking about the photo context, but were judged to be 'own story'. The reduction in major ideas at Time 2 compared to Time 1 (Table 11j) and increase in ideas not directly related to the photo may reflect Palo's developmental stage when children are more attuned to 'here-and-now' contexts than vicarious contexts such as that portrayed in the photo. Examples of Time 1 and Time 2 texts illustrate these particular features of Palo's utterances.

Time 1 examples:

01:41 *and my friend tell me 'Can I play?' and he said, 'Yes, I can play with...um...you. Yep.' and he ...and that's the end of the story.*
00:04 *'Can I go to the beach Dad?' ...That what he said..'Can I do this?'*
00:12 *That's what he said and he wants ...to the water to go beach..with his brother and his sister if you like to go in the water to play ..End of the story*

Time 2 example:

00:00 *Pool to have a swim with...to the shower with..to clean his dog and the..and the man came and and the man came came in the water and he splash the water and the dog came and lick him*
00:04 *The doggie was sitting and the man came and get some food for him and he ate some..and the doggie went outside to play with his friend and..and..the..um ..and the cat came and play with him..with the ..with the pool and the doggie and the cat went to the*
01:14 *retire to get the ball and play*
01:16 *And the dog came in the house and he..he wash heself and he went to watch TV and he went to Manukau to buy..to buy some food for him to eat ..and he want to the ..the Manukau. He went to Pak n' Save to get um..ah..exercise for him..for him to um to*

Summary

Based on CombiList and BPVS assessments, and oral production analysis evidence, Palo made some gains in expressive competency and fluency between Time 1 and Time 2. As assessed by his teacher, there was some improvement in his participation and expression in class between Time 1 and Time 2. Using BPVS measures, Palo's vocabulary regressed by 10 months in the same period. This increased gap is puzzling in light of other evidence that indicated some expressive progress between Time 1 and Time 2. At Time 2 he was more willing and able to express his ideas in sustained utterances, and had more to say. At Time 1 he indicated numbers of times he had nothing more to say. Palo took more time to think and express at Time 2 as he pushed his grammatical and lexical resources to a greater extent than at Time 1 resulting in a slight increase in hesitancy. The grammaticality of Palo's expression increased markedly from Time 1 to Time 2, although minor syntactical errors persisted. The propositions of Palo's utterances were triggered by the photo context but were often related more directly to his personal experiences and associations, possibly reflecting a more concrete, 'here and now' stage of cognitive development. It would appear from the evidence that Palo had progressed expressively overall from Time 1 to Time 2, but not significantly.

Discussion

Vocabulary measure (BPVS) - Filter 2

Variability in rate of development and vocabulary acquisition patterns is well recognized (e.g. Baumann et al., 2003; Biemiller & Slonim, 2001; Jahn-Samilo, J., Goodman, J. C., Bates, E., Appelbaum, M., & Sweets, 2003; Singleton & Ryan, 2004). This is not surprising given also the variability in affective factors and environmental conditions across individual children. Analysis of the six case study students foregrounds this reality. The Time 1 BPVS standardised scores of the four youngest, put Alo (aged 5.06 years, CombiList *Sometimes*), 27 months below his chronological age; Rana (aged 5.05 years, CombiList *No*), 20 months below; Palo (aged 5.02 years, CombiList *No*), 14 months below; and Ara (aged 5.04 years, CombiList *Yes*), 23 months above. The Time 2 BPVS results could not have been predicted based on age, gender, or CombiList assessments.

The two *No* students, Rana and Palo, both well below chronological age in expected vocabulary age at Time 1, showed divergent vocabulary change over six months. Rana made a 9+ point BPVS standardized score gain while Palo a -9 point negative gain between Time 1 and Time 2. A loss is difficult to explain as status quo at the very least would be expected over six months. The macro-nature of BPVS as an assessment measure, and affective factors impacting on Palo at Time 2, might account for this negative gain. Rana's significant increase bodes well for a possible continuing exponential gain over time. Alo, a *Sometimes* student, also well below expected vocabulary age at Time 1, made a modest gain of 4 points in BPVS standardized score over six months, basically

maintaining the identified Time 1 gap at Time 2. Ara, a *Yes* student, scored was well above average at Time 1 and basically maintained her advantageous position over six months.

The Time 1 BPVS standardised scores of the two oldest of the six case study students, put Mele (aged 6.00 years, CombiList *Sometimes*) 24 months below her chronological age and Api (aged 6.0 years, CombiList **Yes**) 1 month below. Api made a -3 point negative gain while Mele remained static. The existent gap at Time 1 between Api's chronological and BPVS ages widened slightly at Time 2, while Mele's slightly narrowed.

A number of interpretations and implications arise. Longitudinal data from a study by Fenson, Dale, Reznick, Bates, Thal, and Pethick (1994) suggested vocabulary increases each month are determined not by age or learning ability but by the number of words added in the previous month (Dale & Goodman, 2005). This identified pattern cannot be seen in the BPVS scores six months apart, but on face value, also does not explain the vocabulary development trajectories of the six case study students. An interpretation of these based on a pattern of growth based on the student's previous month's vocabulary, makes no sense. Perhaps a more useful interpretation is that the six case study students' trajectories parallel growth curves identified by Jahn-Samilo et al. (2003). Based on vocabulary spurt mechanisms, they proposed five growth curve trajectories (Dale & Goodman, 2005) - 'typical shape: fast rate; typical shape: slow rate; hyperspurt; no spurt; and 2 spurts' (p. 56), pertaining to children between 8 and 30 months. Available data in this study does not illuminate which of the trajectories might best describe each of the students if at all, but these trajectories may offer an explanation of the unpredictable and variable nature of their BPVS scores across six months. For example, Rana could well have been in a hyperspurt phase, Mele, Api and Ara in a no spurt phase, and Alo in a slow spurt phase. Palo remains difficult to categorise but might be in a no spurt resulting in negative score gain at Time 2.

There remains a reality, however. For three students, Alo, Mele and Palo, the considerable gap between chronological and BPVS vocabulary age persisted. For Api, a needed exponential gain did not occur; for Ara, her vocabulary advantage predicting great vocabulary spurt potential, remained latent; but if Rana continued making progress at the same rate, she was set to not only close the chronological-BPVS gap but excel beyond it. The challenge to close the chronological-expected age gap for these students is substantial and challenges practitioners and researchers alike. Teachers in Year 1 and 2 classrooms such as the four in this study need to not only realize the vocabulary realities of their students, but find ways that trigger and support vocabulary spurts. Complicating matters is the realization that vocabulary and speech milestones are most predictable at early stages of acquisition, 'and that as age level and proficiency increase, individual differences become more and more prominent' (Singleton & Ryan, 2004, p. 27).

By using BPVS, this study was able to shed some light on the case study students' depth and extent of vocabulary about which the teacher knew little. Typically, Year 1 and 2 teachers in New Zealand schools have minimal information about their students' vocabulary and BPVS might well be considered as a useful tool to fill this gap. It is what Dale & Goodman (2005) termed a 'wide angle lens' approach 'not an examination of vocabulary size or even composition at a single moment in time, but the shape of change over time' (p. 69). To identify the acquisition of individual words, they suggested using a second microscopic zoom lens such as MacArthur-Bates Communicative Development Inventories (MCDI) [Fenson et al., 1994]. This parent report instrument designed to identify fine-grained information which a child's vocabulary understanding and use, is not practicable in the schooling context but the line of reasoning is to be taken notice of. A fine-grained vocabulary identification instrument or approach is needed if teachers and researchers are to illuminate the specific and individual realities of Year 1 and 2 students' vocabulary.

Participation, interaction and expression measures (CombiList) – Filter 1

All six case study students were assessed by their teacher at Time 1 and Time 2, based on observation and other available data and information, using the CombiList to rate 16 communicative and participatory behaviours. At Time 1, Ara and Api were rated *Yes,* 32 and 27 consecutively, Alo, Rana, Mele and Palo rated *Sometimes,* 16, 20, 18 and 19 consecutively. At Time 2, Alo, Rana and Mele made significant positive shifts, increasing their rating by 9, 6 and 9 points consecutively. Ara could not improve and maintained a maximum rating at Time 2, Api shifted 2 positive points, and Palo 4. Thus, based on teacher observation, all six students made marked progress towards or maintained high levels of participatory and communicative behaviours over six months.

CombiList is a user-friendly specific but not fine-grained assessment tool to identify key aspects of each student's participatory and communicative behaviours during class activities and lessons. The 16 criteria can be examined variously – per criteria per individual students, per criteria across all students in the class, and collapsed into 'best fit' categories to identify individual's macro change across time, or across the cohort. Assessments may be made at frequent or infrequent intervals, the first recommended as a valuable triggering device to raise teacher awareness of and knowledge about the participatory and communicative behaviours of their students in a guided and manageable manner, as well as offer valuable information about students' interactional and expressive behaviours. The teachers in this study had not previously systematically assessed their students in this way. The identified behaviours serve as an important on-going indicator about each student's quality and quantity of interaction and expression during class time, and for that reason, are extremely useful. CombiList could well be adopted by Year 1 and 2 teachers in low socio-economic schools as a step towards more informed interactional and discourse pedagogy.

Oral text production – Filter 3

At Time 1 and Time 2, each of the students was asked to express their ideas discursively, triggered by and related to a self-selected photo. These snapshots of non-dialogic, unassisted oral expression offered comparative macro and micro information about the grammatical and lexical quality and quantity of expression by each student at two points in time, providing insights into the fluency and complexity of each utterance, and across utterances. Individual differences in language acquisition and expression are not surprising, despite extensive research dedicated to identifying general acquisitional and expressive milestones in young children (Bloom, 1973; MacWhinney, 1999). Micro-analysis of the six case study students' oral text production is illustrative of this individuality.

Individual profiles

At Time 1, Rana was at the extreme end of expressive constraint, barely able to produce utterance of more than one or two words, she could be described as dysfluent. Alo was like Rana at Time 1 in that he was highly constrained expressively. Although a little less laboured than Rana, like her, his ideas were unsophisticated 'The limits of my language mean the limits of my world' (Wittgenstein, 1922/2010) was apparent.

At Time 2 there was significant change in confidence, fluency and complexity of expression by both students. Both were able to express longer, grammatically more complex utterances with considerable fluency and confidence relevant to the photo and context in hand. While by no means linguistically sophisticated, in Rana's case, this apparent grammatical spurt co-occurred with a vocabulary spurt. It would appear not to be the case with Alo. The strong interdependence of lexicon and grammar as identified by Bates and colleagues (e.g Bates & MacWhinney, 1987) suggests that an expressive spurt by Alo was yet to come. In the lesson analyses at Time 2 (see Chapter 6), the effort and attention Alo put towards potential uptake and acquisition of vocabulary and linguistic expression may predict an imminent expressive spurt. With on-going optimizing interactional and discourse lesson conditions as at Time 2, Alo and Rana looked set to extend the quality and complexity of their expression over time. Differences in the core framework sets of the two students, Alo quiet and reserved although not shy, and with Tongan as the dominant language of home and family, and Rana, more extrovert and spontaneous, and experiencing more English in family and home, must also have exerted an influence on the individual expressive trajectories of both these students. However, as confidence, fluency and grammatical quality builds, it could well be that framework set differences play a less influential part in uptake and acquisition overall, albeit that each student will continue to map a unique expressive pathway.

At Time 1, Api, Mele and Palo were more able to express utterances comprising of more words and slightly greater grammatical and lexical complexity than Rana and Alo. However, none could express with high levels of confidence and fluency, and their texts too were highly constrained linguistically.

Api's expression was repetitive in structure and lexica, her utterances snippets of language and ideas rather than cohesive, sustained, discursive text. Mele, on the other hand, expressed longer utterances than Api but these were loosely strung together ideas, limited propositionally and in grammatical complexity. In a similar way, Palo was quite expressively fluid, his text a flow of minimal ideas strung together with many conjunctives. His were the only texts where dialogue between photo participants was part of his text, shaping a more imaginative text than the other four already mentioned. Less severely than Rana and Alo, all three students were hampered by vocabulary and grammatical constraints. Their texts were neither grammatically complex nor lexically rich.

Both at Time 1 and Time 2, oral text and lesson analysis evidence of the younger of the six case study students suggested Palo and Rana in particular to be on the cusp of moving from grammaticalisation phase of language acquisition to the grammatical mastery phase (Berman, 2004), a drawn out and complex acquisitional period often beginning at age four or five. Alo, on the other hand, was operating more within the grammaticalisation phase, basic grammatical structures in English still very much developing and being internalised, but at Time 2, when offered supportive input and out opportunities, he increasingly tried expressing complex text, privately and publically. At Time 1, it was evident that Mele and Api were cognitively and linguistically ready to deal with greater quality and quantity of expression, their oral texts showing basic word group structural competence and inclusion of more low frequency vocabulary. This was borne out in their lexically richer Time 2 oral texts, and in their lesson expression, where quality and quantity of expression on offer was being acquired and used relatively speedily by them both.

Ara was difficult to fathom expressively. Information obtained from Ara's teacher pointed towards extensive semiotic experiences outside school, dialogically and interactionally rich, and elaborative expressively. Her expressive background predicted high levels of vocabulary knowledge and sophisticated oral text expression. At both Time 1 and Time 2, her expression was casual and playful, as if somewhat uninterested in expressing non-dialogic text. Her expression lacked the grammatical and lexical potential she so obviously had and she never appeared to push her current expressive resources. While at Time 2, there was some shift in grammatical complexity, she remained an enigma to a large extent. The full extent of her expressive repertoire was not evidenced in either oral text production samples or lessons.

Group profile

Between Time 1 and Time 2, for all six case study students there was a move towards more complex, fluent and confident expression as measured by the micro-analysis of oral text samples. There was more cohesion between utterances, and greater use of low frequency, context specific vocabulary. The students' expressive progress made over six months was significant but unremarkable if viewed from

where the students could or need to be, or highly significant and remarkable if viewed from where the students were and had come to and the possible impact of the intervention on this.

The three School B case study students, Api, Mele and Palo, were at Time 1 and Time 2 more expressive than the School A students, Ara, Alo and Rana. Particularly at Time 2, there was a deliberateness about the School B students' utterance constructions, their expression appearing more thoughtful and careful than the other three students. Expressive elaboration had received much metacognitive and practice emphasis in the School B classroom during the implementation phase of the study and appeared to be influencing their composition of utterances. The noticeable effect of metacognitive attention given to students' expressing with quality and quantity suggests its importance in language acquisition.

An unknown is to what extent the slow, steady pace of expressive change was a direct result of interactional and discourse pattern changes made in the classroom and whether, with continued attention to providing optimising conditions for quality and quantity of expression in the classroom, there would be a significant gains in the students' expressive quality and quantity. The six case study students' expressive competencies were transitioning towards increased cognitive and grammatical complexity, and extended lexical depth and breadth, identified as occurring somewhere between ages 4-7 years. The future challenge would be to capitalise on this potential in order to trigger and support their individual grammatical and lexical spurts.

Summary

By examining the lexical and expressive resources of each of the six case study students selected for micro-analysis through macro and fine-grained lenses, a cumulative representation has been made of each student's independent expressive competencies and capabilities. As examples of Year 1 and 2 students in low socio-economic schools, their identified lexical and expressive strengths and limitations suggest urgent attention needs be paid by teachers to identifying these as early on in the school life of each student as possible, gathering regular and on-going information and data so as to keep abreast with the unique lexical and grammatical trajectories of each of the students.

Chapter 5: Findings 2

Optimising interactional and discourse classroom conditions: Implementation and lesson analyses: School B and School A teacher

Introduction

Chapter 5 reports on the teacher implementation findings (post intervention), and on the interactional and discourse conditions operating in two Year 1 and 2 classrooms during three lessons at each of Time 1 and Time 2, with the lens trained on the teacher.

Intervention implementation: Teachers School B and School A

The methodology chapter outlined the methods of the intervention for the four teachers. In order to monitor fidelity of implementation, the teachers were asked to rate their effectiveness of implementation every fortnight throughout the ten weeks of implementation, based on the key attentions related to the interactional and discourse variables in Figure 1, and their effects on student outcomes, using a five point scale (*Never* to *Always*). On alternative weeks, teachers communicated with the researcher via e-mail, describing examples of implementation, noticed student outcomes, and raising issues and queries. Feedback was provided by the researcher via e-mail and shared with all four teachers. No further intervention occurred during the implementation phase and no class visits were made.

Figure 4 presents the means across the four teachers for the three major forms of data collected. There was very low variance across all measures at all five occasions (sd=.75), although there was a trend upwards across the five fortnights of data collection for all three forms of evidence. The more detailed data is provided in Table 12.

Figure 4: Teachers' fidelity of implementation ratings

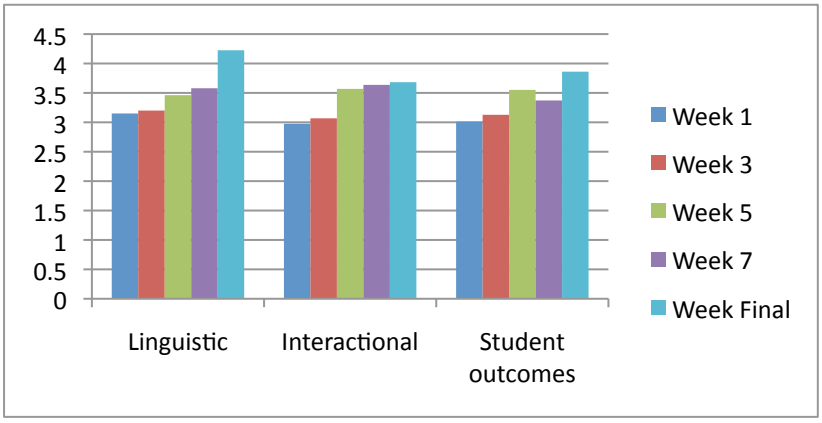

Table 12.
Teachers' self-reports - fidelity of implementation of variables – all students/whole class

	School A					School B					School C					School D				
Linguistic	Wk1	Wk3	Wk4	Wk7	Final Wk10	Wk1	Wk3	Wk5	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk10	Wk1	Wk3	Wk5	Wk7	Final Wk
a) input	4	4	3		4	3	3	4		4	3	3	4	4	5	4	4	4	3	4
b) output	4	4	3		4	3	3	4		4	2	3	4	4	5	3	3	3	3	5
c) fullness exp	4	4	3		4	3	4	4		4	2	2	4	4	5	2	3	3	3	4
d) recycle	4	4	3		4	3	3	4		4	3	3	4	4	2	3	3	3	3	4
e) foF/foM	4	4	3		4	3	3	3		4	2	2	3	4	3	2	3	3	3	5
f) feedback	4	4	3		4	3	3	4		5	3	3	4	4	5	3	3	3	3	5
g) noticing	4	4	3		4	3	3	4		4	2	2	4	4	5	3	3	3	3	4
h) valuing	4	4	3		4	3	3	4		4	3	3	4	5	5	3	3	3	3	4
i) vocab attn	4	4	3		4	3	3	4		4	4	3	4	5	5	3	3	3	3	4
j) text variety	4	4	3		4	3	3	4		4	4	2			5	2	3	3	3	4
AVERAGE	4.0	4.0	3.0		4.0	3.0	3.1	3.9		4.1	2.8	2.6	3.9	4.2	4.5	2.8	3.1	3.1	3.0	4.3

Interactional	School A					School B					School C					School D				
Inter -Tchr	Wk1	Wk3	Wk4	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk
a) control	4	4	3		4	3	3	4		3	2	2	4	4	2	2	2	3	3	4
b) elaboration	4	4	3		4	3	3	4		4	3	3	4	4	5	3	3	3	3	4
c) dialog	4	4	3		4	3	3	4		4	3	3	4	4	3	3	3	4	4	5
d) questions	4	4	3		4	3	3	4		4	2	2	4	4	4	2	2	3	3	3
e) IRE patt	4	4	3		4	3	3	4		4	2	3	4	4	2	2	3	3	3	2
f) hands up	4	4	3		4	3	3	4		4	2	2	3	3	2	2	2	3	3	3
g) think-wait	4	4	3		4	3	3	4		5	2	2	4	4	2	3	3	4	4	4
h) scaffolding	4	4	3		4	3	3	4		4	3	3	4	4	2	2	3	3	3	4
i) interact opp	4	4	3		4	3	3	4		4	3	3	4	4	4	3	3	4	4	4
j) formats	4	4	3		4	3	3	4		4		3	4	4	4	2	3	4	4	5
k) co-construc	4	4	3		4		3	4		4		3	4	4	2	2	2	3	3	4
AVERAGE	4.0	4.0	3.0		4.0	3.0	3.0	4.0		4.0	2.4	2.6	3.9	3.9	2.9	2.4	2.6	3.4	3.4	3.8

Student outcomes	School A					School B					School C					School D				
Linguistic Interactional	Wk1	Wk3	Wk3	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk	Wk1	Wk3	Wk5	Wk7	Final Wk
a) think-say	4	4	4		4	4	4	4		4	2	4	4	4	4	3	2	3	3	4
b) initiate	4	4	4		4	3	3	4		4	2	4	4	4	4	3	2	3	3	4
c) turn-take	4	4	4		4	3	3	4		4	3	4	4	4	4	2	3	3	3	4
d) pr, grp, class	4	4	4		4	3	3	4		5	3	4	4	4		3	3	3	3	4
e) express/listen	4	4	4		4	3	3	4		5	3	4	3	4	5	2	2	2	2	4
f) control	4	4	4		4	2	3	4		4	2	2	4	3	4	3	2	3	3	4
g) enquiry	4	4	4		4	3	3	4		4	3	2	3	3	2	3	2	3	3	4
h) expnd expr	4	4	4		4	3	4	4		4	2	2	4	4	2	2	2	3	3	3
i) dial-mono	4	4	4		4	3	3	3		4	2		3	4	4	2	2	2	3	4
j) relevance	4	4	4		4	3	3	4		4		2	3	4	2		2	2	3	3
AVERAGE	4.0	4.0	4.0		4.0	3.0	3.2	3.9		4.2	2.4	3.1	3.6	3.8	3.4	2.6	2.2	2.7	2.9	3.8

The self-report ratings suggest that each of the four teachers focused steadily and reflectively across the ten weeks of implementation on the linguistic and interactional attentions. In large part they did so with growing confidence and consistency based on their ratings across the weeks. Two teachers in particular, in Schools B and D, reported a steady increase in implementation effectiveness and

observed student outcomes across time, culminating in the majority of attentions and outcomes being rated ‘mostly’ or ‘sometimes’. The teacher in School A rated teacher attentions consistently at ‘mostly’ across the weeks, except for a dip midway where all attentions were rated ‘usually’. Student outcomes were consistently rated as ‘mostly’ across the term. In School C, the teacher rated linguistic attentions steadily towards full and consistent implementation, so that at Week 10 most attentions were rated as ‘always’. In contrast, interactional attentions ratings varied across the weeks, trending upwards up to week 7 then dipping for some attentions at week 10, while not for others. A similar pattern is evident for student outcomes ratings.

The School A teacher mainly reported ‘mostly’ across the implementation period. Her anecdotal feedback on alternative weeks reflected focused attention to endeavouring to optimise implementation and moments of great excitement as she saw individual students, and the class as a whole, progress. She always raised questions and was often worried about the differentiated progress of her students. The School B teacher’s self-reports reflected her growing confidence and sense of effectiveness across the ten weeks of implementation. At week 3, she reported ‘usually’ for all linguistic and interactional implementation elements. Student outcomes gradually trended upwards from ‘sometimes’ to ‘mostly’ or ‘always’ by Week 10. The School C teacher tended to use ‘Sometimes’ for the first three weeks, then began to claim more frequency for the behaviours. By week 10, she rated ‘always’ for all but two linguistic elements, compared to the interactional elements with considerable variability in rating. The School D teacher tended to rate ‘Usually’ up to Week 7, then moved more to ‘mostly’ or ‘always’. By Week 7 all but one student outcome was rated ‘usually’, and by Week 10, all elements were rated ‘mostly’ except for *relevance of expression* and *expanded expression,* rated ‘usually’. By the end of the intervention, all four teachers reported implementing the twenty one linguistic and interactional attentions with effort and effect, and in most part became more consistent and effective with their implementation as rated by themselves, with resultant positive effect on their students.

Accompanying the ratings at Week 10, the teachers were asked to make a comment to accompany each rating. An analysis of the teachers’ comments about linguistic and interactional attentions’ implementation fell broadly into nine themes (Table 13). Comments were most often multi-thematic and analysed accordingly. It appears there was a high degree of consciousness about their pedagogy and practice as related to the linguistic and interactional attentions in focus by all four teachers. This substantiates the teachers’ self-report ratings for linguistic attentions, which gradually tracked upwards towards ‘mostly’ or ‘always’ for the majority of attentions across the ten weeks, for all four teachers. Self-report ratings for interactional attentions similarly tracked upwards, with the exception of teacher C who rated some much interactional attentions downwards over time. Teacher A expressed a high level of attention to the positive outcomes she observed in the students, as well as their needs, indicating a high level of awareness as to the effects of implementation. Teacher C

commented reflectively more often than the other three teachers, and commented numerous times on her students needs. Teachers A and D commented on their efforts to implement more often than Teachers B and C.

Sample comments for teacher effort included: *I try hard to maintain working in the students' 'goldilocks zone' in vocabulary; I try to ensure rich linguistic input is available as often as possible and makes sense; I learnt to work round topic school-wide demands*; *I continually tried to release control;* and *I'm trying my best not to question, rather to make use of prompt cues.*

Sample comments for knowledge and understandings included: *This strategy helps to ensure that all children have the opportunity to contribute by giving them plenty of time to think*; and *meaningful utterances have been an important part of my learning this term (and the children's).*

Table 13.
Linguistic and interactional themes: Teacher self reports

	Linguistic/interactional	Teacher A	Teacher B	Teacher C	Teacher D
	Themes	*N= 21*	*N= 16*	*N=21*	*N =11*
1	*Effort*	10	2	2	10
2	*Knowledge/ understandings*	2	7	7	6
3	*Pos. student comments*	24	4	11	4
4	*Student needs*	14	4	15	4
5	*Neg. student comments*	4	0	3	0
6	*Pedagogy*	53	19	37	34
7	*Reflection/analysis*	3	0	10	3
8	*Celebratory comments*	2	0	3	2
9	*Resources used*	6	1	3	3

Positive and constructive comments about the students: *Students have begun to independently share the connections they have made*; *I had a few less capable children who would excitedly give our clever word meanings a go and get them partially correct, which for them was a big and positive step as they were able to retain some information*; *some children never need help once they understand what is wanted*; *they have made connections that are meaningful*; *by all of us valuing the sayer their confidence grew and they became more willing to share - small steps but three children grew immensely during this time*; *the children in my class know what recycling means, they are aware that they shouldn't be using the same utterances but need to change it and make it interesting, meaning making and sense making*; and *the top half dozen are good at initiating and sustaining talk.*

Sample comments for student needs included: *we encountered many words that needed to be discussed and put into context*; *I still had three or four students who had no idea and were not able to contribute*; *unfortunately this means they often say things that are not relevant or a repetition of what someone else has already said - the "me too" factor*; *some students have to be reminded all the time to*

keep it going; and *some children were engaged while some children (the same ones each time) were disengaged*.

Negative comments about the students included: *I had to reel in the class and take control when the class behaviour just became too difficult*; *dialogicity in the whole class group always became too unruly*; and *at the whole class level, behaviour problems took control*.

Comments on pedagogy included: *I always have in my mind how can I make conversation and experiences meaningful for my students*; *I've been making connections between lessons, like maths, literacy, topic, not only in planning but in the incidentals that arise*; *working within that 'goldilocks zone' so to stretch they to make connections, and meaning, but so that it is available to as many students as possible*; and *we had numerous encounters with form and meaning especially throughout our topic and writing time and new word generation onto a permanent word wall*

Teacher analysis and reflections: *children switching off could possibly be a feature of having had a longer time at school (Yr2 instead of Yr 1) and so they get bored with recycling*; *sometimes it can be hard to find the point that pushes but doesn't go over their heads; I consider that to consistently change what a child has said or written is discouraging for the child and is not good practice;* and *I consider that the caring classroom environment that I have fostered also has a bearing on this improvement*.

Celebratory comments included: *I get excited about the fact that they are trying; wow, they know what it means; small groups have been rewarding for me; there are two boys, both naughty, who have become very good at this and I am so pleased with them*.

Comments about resources included: *often we use a dictionary to clarify meaning*; *I also have my new table horseshoe table for my small groups*; and *many topic associated books, pictures, word groups and games available for use*

The teachers appear to have a good understanding of the linguistic and interactional attentions in focus. Teacher C in particular, in some instances, challenged some of these attentions and made an explicit decision not to implement them. An example can be seen in her remark accompanying feedback at Weeks 1 and 2: *'(Dialogicity without hands up) leads to shouting each other down which is not constructive in any way, It does not work and I will not try it again.'* She elaborated further however, with: '*I will continue with dialogicity with the smaller reading groups. The calling out lends itself to a small group where confidence is not such a factor and I have had success with the lower groups already.'*

Overall, teachers noticed student gains at whole class, small and individual levels. Whether these noticed gains were supported by classroom observational evidence is examined later. The number of student outcomes' comments were categorised into the seven themes (Table 14).

With the exception of teacher B, three teachers made predominantly positive comments about their students. These related to whole class, small group and individual student observations. The degree of specificity varied, the teachers endeavouring to summarise transitional changes across the implementation period, as well as changes noted in specific contexts. The three teachers who supported their rating with detailed comments particularly conveyed an awareness of gain and positive change in students, alongside student needs, across the ten weeks of implementation and at the end (Time 2).

Teacher B responded minimally at Week 10, either with no comment, or with a simple 'yes' and no further elaborative. She was unavailable to elaborate further on these at the time and so regrettably her minimal responses had to be accepted as is. However, throughout the implementation period, on a fortnightly basis, she described in great detail her interactional and linguistic attentions' implementation in the context of the specific lessons. These descriptions indicated a high level of attention to implementation by her, as exemplified in her summary at Week 4: *'The class as a whole (is making) slow and steady improvement linguistically and cognitively. The students in small groups seem to be more effective. I can definitely see improvement with the students' talk…with oral language expansion ...on a casual one to one basis. I have to keep reminding them to elaborate. There is both cognitive...and vocabulary expansion (going on). I make an effort to (attend to) this in all subject areas. I am getting better at the prompts and making a good effort to explain new words that come up on the spur of the moment.'*

Table 14.
Linguistic and interactional student outcome themes: Teacher self reports

		Teacher A	Teacher B	Teacher C	Teacher D
	Student outcome themes	*N=10*	*N=5*	*N=10*	*N=8*
3	*Pos. student comments*	20	0	20	18
4	*Student needs*	5	0	11	6
5	*Neg. student comments*	1	0	1	0
6	*Pedagogy*	4	5	12	5
7	*Analysis / reflection*	2	0	3	3
8	*Celebratory comments*	1	0	2	0
9	*Resources used*	2	0	2	3

Sample comments related to the student outcome themes illustrate the teachers' thinking behind their ratings. Positive comments by the four teachers about the students included: *'Students are expressing their ideas and opinions, and feelings better than at the beginning of the year'; 'The class as a whole seems to be more keen and capable of asking about things they don't know or have difficulty understanding'; 'all the expression of the students is meaningful, sometimes even when it sounds that it is not relevant'; 'with guidance, many students are able to share using expanded expression'; 'they*

are much better at turn-taking than they were, particularly if I have just talked about it'; 'the bottom few have improved in small group situation'; 'they became skilled at finding words they needed, transferring this knowledge into other stories within the topic and also directing their peers to words they needed'; and *'there is much relevant and meaningful discourse taking place between the children'.*

The teachers identified continuing student needs, as in these comments: '*At the beginning I noticed many children were self-focussed and when asked to report back had no idea what the other child had told them';* '*others lose it before they can pass it over*'; S*ome are better in a small group*'; *'one student ....while giving her time to share/speak ... has forgotten*'; and *'sometimes there are students who don't want a turn*'. Very few negative comments were made by the teachers. One such comment was: *'One (student) in particular does not seem to care about the feelings of others'.* Some student related comments were pedagogical in nature, such as: *'New pictures on the wall also brought lots of talk and feedback about their knowledge and much of this was done peer to peer'; 'after much practice they became a lot more attuned to what their partner was telling them';* and *'I use think-pair-share often and the children know the routine well'; 'I always give them specific instructions'.*

Comments such as, *'This improvement is repeated to a lesser degree in less able children, culminating in the bottom few who, while they seem to understand, cannot express themselves well at all'* and *'It is so much easier ....if they have something exciting to talk about',* were indicative of the teachers' self-reflective and analytical perspectives on their students' expressive behaviours. One teacher celebrated the evident progress of her students by commenting thus: *'I find it very exciting'.*

Teachers' comments about student progress and sticking points were honest and suggested a raised awareness about their students' quality and quantity of expression and interactions. Overall, they were encouraged and spurred on by the evidence in front of them.

Lesson analysis: Teachers School B and School A

An analysis of the teacher's discourse and interactions during the same lessons as each of the six case study students in micro-focus offers further insights into how the students were positioned cognitively and linguistically, impacting directly and indirectly on the quality and quantity of their expression. It also provides evidence about whether classroom discourse and interactional conditions throughout the Time 1 and Time 2 lessons were more or less optimising, and what expressive changes occurred as a result. This section presents findings with the lens trained on the teacher. Chapter 6 presents findings with the lens trained on the six case study students.

Comparing School B teacher Time 1 Lesson 2 and Time 2 Lesson 1: Focus case study student - Api

The lesson stages for both lessons are provided in Appendix 3.

Utterance analysis

The School B teacher expressed 151 utterances at Time 1 and 205 utterances at Time 2, but the utterances were longer at Time 1 compared to the shorter and more frequent prompting and supporting utterances in the Time 2 lesson (Table 15a).

Table 15.

School B teacher – Comparison between Time 1 Lesson 2 and Time 2 Lesson 1

Table 15a.
Number of words per utterance

	T1 Les 2	T2 Les 1
1-2	13	60
3-5	24	47
6-8	18	24
9-12	30	17
13-15	10	11
16-20	8	15
21 + longer	48	31
<Any Modifier>	151	205

Table 15 b.
Duration of words per utterance

	Les 2 T 1	Les 1 T 2
1-2	00:11.4	01:11.1
3-5	00:31.9	02:02.2
6-8	00:43.9	01:40.3
9-12	01:18.7	01:13.6
13-15	00:46.1	01:39.7
16-20	01:03.3	01:59.9
21 + longer	14:18.3	08:55.3
<Any Modifier>	18:53.5	18:42.2

Table 15 c.
Clause type per utterance

	T1 Les 2	T2 Les 1
below clause	12	56
minimal clause	27	47
expanded clause	22	15
clause complex	15	33
multi clauses (complex clauses)	51	38
multi clauses	24	16
<Any Modifier>	151	205

Table 15 d.
Duration of clause type per utterance

	Les 2 T 1	Les 1 T 2
below clause	00:10.7	01:23.5
minimal clause	00:43.1	01:53.9
expanded clause	00:47.2	00:59.0
clause complex	00:47.9	03:22.2
multi clauses (complex clauses)	14:26.9	09:32.4
multi clauses	01:57.7	01:31.2
<Any Modifier>	18:53.5	18:42.2

Table 15e.
Clauses per utterance

	T1 Les 2	T2 Les 1
0 cl	11	53
1 cl	53	62
2 cl	20	31
3cl	14	14
4cl	13	14
5cl	5	8
6cl	9	6
7 cl	3	1
8 cl	5	2
9 cl	1	4
10 cl	3	2
11cl	2	3
12 cl	1	-
13 cl	3	1
14 cl	2	1
15 cl	-	1
16 cl	-	-
17 cl	-	-
18 cl	1	-
19 cl	-	-
20 cl+	4	-
<Any Modifier>	150	203

Table 15f
Duration of clauses per utterance

	Les 2 T 1	Les 1 T 2
0 cl	00:09.8	01:18.4
1 cl	01:48.0	02:47.7
2 cl	01:01.9	02:24.8
3cl	01:07.2	01:39.2
4cl	01:09.0	02:08.4
5cl	00:39.0	01:34.4
6cl	01:47.4	01:38.5
7 cl	00:36.6	00:08.7
8 cl	01:12.6	00:34.3
9 cl	00:21.1	01:10.6
10 cl	00:44.3	00:27.6
11cl	00:48.9	01:03.5
12 cl	00:16.6	-
13 cl	00:59.0	00:31.3
14 cl	00:56.9	00:30.6
15 cl	-	00:36.4
16 cl	-	-
17 cl	-	-
18 cl	00:31.3	-
19 cl	-	-
20 cl+	04:36.5	-
<Any Modifier>	18:46.5	18:34.6

Table 15g.
Processes per utterance

	T1 Les 2	T2 Les 1
question	86	24
explain	36	20
prompt	59	168
feedback	19	-
instruct	5	1
comment	4	-
direct	34	43
praise	3	4
criticise	2	-
thank	-	-
describe	7	1
inform	38	96
confirm	41	14
musing	1	-
<Any Modifier>	151	205

Table 15h
Duration of processes per utterance

	Les 2 T 1	Les 1 T 2
question	11:37.3	03:49.4
explain	10:55.8	05:20.5
prompt	03:51.6	12:27.9
feedback	04:52.3	-
instruct	00:37.4	00:07.4
comment	02:35.4	-
direct	02:24.1	07:32.3
praise	00:23.6	00:49.0
criticise	00:04.7	-
thank	-	-
describe	02:01.8	00:14.6
inform	11:49.1	12:31.5
confirm	04:33.4	01:23.9
musing	00:02.4	-
<Any Modifier>	18:53.5	18:42.2

Table 15i.
Question type per utterance

	T1 Les 2	T2 Les 1
pseudo question	3	9
zero	59	181
nw-kn-op-cl	9	-
known -closed	37	6
new-closed	18	1
open - known	16	7
open-new	9	1
<Any Modifier>	151	205

Table 15j.
Direction of utterance

	T1 Les 2	T2 Les 1
self	-	-
partner	-	-
teacher	1	-
other peers	**1**	**-**
whole class	**79**	**75**
group	**27**	**-**
child	**36**	**93**
combination	**14**	**37**
<Any Modifier>	**151**	**205**

At Time 1, almost a third (32%) of the teacher's utterances were 21+ words in length (Table 15a), some of which were extended monologues. An extreme example occurred towards the end of the lesson when the teacher realised the extent of the students' confusion and misunderstanding related to the topic and learning intention of the lesson. Utterances of between 1-12 words tended to occur in clusters when the discourse and interactional pattern was typical IRE, the teacher posing many questions, seeking from the students the answer she sought. Other shorter utterances occurred when the teacher was directing the students in some way, or in response to students expressing their

thinking and perceptions. For example, *"So once you put the date you need to colour in these words, colour the picture and colour all the circle pictures as well. Okay. You're not scribbling..the little people, you're not scribbling. I want to see some nice colouring done. Okay, Now you may go."*

Utterances of between 1-12 words tended to occur in clusters when the discourse and interactional pattern was typically IRE, the teacher posing many questions probing the students to arrive at the answer sought. Other shorter utterances occurred when the teacher was directing the students in some way, or in response to students expressing their thinking and perceptions. For example:

Time 1 example
07:47 *Put your hands up.*
07:50 *What would happen if we don't get water. Tom, yes?*
07:58 *If we didn't get water for one day, would we die? No, not for one day. What would happen to us?*
08:06 *Yes, we could have dry skin. Okay. Yep.*
08:11 *What else..what else could happen?*
08:22 *Dirty. What else could happen?*
08:28 *If we don't have water, will it get clean?*

The concepts and understandings of the Time 1 lesson topic and focus were complex, and the teacher's endeavour to use analogous examples to assist students resulted in confusion rather than clarity. Somewhat thrown by this, the teacher expressed extended and repetitive utterances in an effort to clarify and retrieve the situation, as in this transcript example:

Time 1 example
05:22 *Okay. Now what I'm looking at..Can you see the water is filled inside this cup? Can you see the water's filled inside? It's right up to the top...and can..if I put more water, what's going to happen?*
05:35 *It will.. tip. It will fall out, it will overflow, isn't it? If I put more than this, what's going to happen? It will fall out. If I put..fill up right up here to the top in this bottle, it will fall out. If I fill up water right up here, it will fall out*
05:53 *And in the same way, you can see that the Holy Spirit - what we are learning about, the Holy Spirit, is just like this.*
06:03 *The Holy Spirit fills us just like all the waters filled in this container..and if I put more, it's going to tip over. In the same way the Holy Spirit fills us. We are filled with the Holy Spirit. Can you look at this plant here?*

Teacher utterances in Time 2 lesson 1 were predominantly short in word number and duration (Tables 15a & 15b), 64% within a range of between 1-8 words reflecting the lesson's structure and orientation, an involving, participatory, collaboratively co-constructed shaping of a story based on the pictures from the book, *The poor sore paw*. While the teacher had a text in mind, she prompted the students to contribute at all points along the way, incorporating their ideas and expressions into the story text. In this role, she deliberately refrained from being expressively dominating, although there were times when she expressed extended utterances by way of 'supplying' text to lead the story on and offer grammatical and lexical quality. These account for some of the longer utterances of between 16 – 21+ words expressed by the teacher especially in the early part of the lesson. Other longer utterances were instructing or directing students organisationally, or responding to student contributions, and on one occasion when the teacher told a short anecdote elaborating on a student contribution. Transcript excerpts of a series of short utterances as the teacher prompted and nudged the students' expression of the evolving story text, and of longer utterances, illustrate such utterances by the teacher.

Time 2 example

08:06 *...got stuck on...when he was walking on the bridge. Okay. Let's go to the next page. We're not looking at the words. We're going to tell the story by looking at the picture. Oh, look at this one now. Let's see what we could say over here. Come on. Yes?*

08:26 *The cute fluffy dog...*

There were 25 medium length utterances of between 13-20 words throughout the Time 2 lesson, primarily prompting and supporting utterances by the teacher as the students recalled parts of the co-constructed text (Table 15a). As the lesson progressed and the students expressed the story text with increasing confidence and fluency, shorter utterances by the teacher became more frequent as she gradually relinquished expressive control.

While the overall expressive time by the teacher was more or less equivalent in both lessons, the teacher's expressive dominance was demonstrably greater at Time 1 than Time 2. This is particularly evident in the duration of utterances 21+ words or longer. At Time 1, 48 long utterances absorbed 14.18 minutes of lesson time, while at Time 2, 31 utterances of 21+ words in length absorbed 8.55 minutes if lesson time, indicative of the sometimes extensive duration of utterances at Time 1. The teacher's expressive dominance was dense and extensive at Time 1, while at Time 2, her expression was more evenly spread throughout the lesson and significantly less dense and extended.

Clause type per utterance

The grammatical complexity of the teacher's utterances as measured by clause type at Time 1 revealed a concentration of multi-clause utterances, relatively few below clause utterances, with a significant but not high number of simple clause type utterances (Table 15c). The transcript illuminates the dominance, and cognitive and grammatical complexity, of the multi-clause utterances, as in these examples:

Time 1 example

03:36 *They're skinny and fat. Okay they're all different sizes and different shapes. They're different sizes and different shapes. This is a round like a cylinder. This is like it's a rect..sort of a long cylindrical shape..and this is..What is this? This looks like a triangle isn't it? So they're all different sizes and different shapes. But..what..Is the water filled in it right to the top? Has the water been filled in it? Yes, can it take all this water? Yes, it can take water right up to the top, isn't it? Okay.*

04:17 *Okay, turn around.*

As in the two other Time 1 lessons analysed, the teacher expressed at a fast pace, as in the above utterance when she expressed 157 words in 53 seconds. Compare this to the 21+ word, multi-clause utterance at Time 2, the teacher expressing 79 words in 40 seconds.

Time 2 example

13:28 *You know what, when I did this with my daughter yesterday and she said, 'Oh but Mummy the cow is so big and I'm sure the bridge is going to break too'. She said the same thing that you said Marvin. Yes because the cow is so big...and heavy.... absolutely and fat. Yes. So when the cow came...on.... came to the bridge what happened? What did she say? Move out of the way', yelled cow! 'I want to go...*

14:03 *I want to go..home...*

At Time 2, the majority of the teacher's utterances were below clause and minimal clauses. Because this lesson was building on the previous day's intended learning and expression, the teacher's

orientation was towards minimal expressive input from her, and maximal effort and expression by the students. Without the previous day's lesson, the teacher's minimal expressive input in this lesson would have resulted in minimal quality and quantity of expression by the students, reliant as they would have been on their own limited expressive resources. The teacher deliberately planned and staged this Time 2 lesson as a form of expressive consolidation, pushing the students' quality and quantity of expression, and their cognition. Collaborative saying occurred in the earlier stages, but the teacher gradually drew back expressively, nudging and supporting where needed, but offering increased opportunities for students such as Api to express independently of the teacher.

In line with the above analysis, the duration of multi-clause utterances in particular was disproportionate to the number of multi-clause utterances at Time 1 compared to Time 2, indicative of the extensive expressive time consumed by the teacher in the Time 1 lesson when expressing cognitively and grammatical complex utterances (Table 15d).

Number of clauses per utterance

There were 22 utterances with clauses ranging between 8 and 20+ at Time 1 compared to 14 utterances in the similar clause range at Time 2 (Table 15e). Notable at Time 1 were four utterances of 20+ clauses, consuming a total of 4.36 minutes of expressive time (Table 15f). At Time 2, the largest number of utterances and of longest duration in total ranged between 0 and 6 clauses per utterance, reflecting the teacher's deliberate orientation towards opening up and supporting the students' quality and quantity of expression, requiring her to step back expressively yet be poised to offer scaffolded support when and if needed.

Utterance processes

As with the previous School B teacher lesson comparisons, there was a significant shift in pedagogy from Time 1 to Time 2. The Time 1 lesson discourse and interactional patterns were dominantly IRE teacher-student exchanges and expressive monologues by the teacher as she sought to explain and clarify what proved to be cognitively challenging ideas and concepts for the students. The utterance text processes reflect this orientation (Table 15g), with 57% of the teacher's utterances involving some form of questioning with accompanying confirming utterances typical of IRE patterns of exchange, alongside a high number of explaining and informing text processes. At various times throughout the lesson, the teacher directed the students organisationally and interactionally, as in the following transcript example:

Time 1 example

01:54 *Okay. Did you think about what .. something about these three containers? Now I want you to share with your buddy what you think about these containers and I'm going to come around and I want to see..I want to hear what you are saying today. I want you to turn to a buddy ..um*
02:14 *Tom, you come here to Palo, please.*
02:17 *Samas, Peta and Jord.*
02:20 *Yep, you turn there.*
02:23 *Ah yep..and you take some Samas as well please.*
02:27 *Okay..and Samas there. Oh no, Tom's coming there.*

02:33 Okay Pasi..you turn there..You turn there. Okay.

Many times questions served as prompts as the teacher sought a preferred or expected response from the students, as in this example:

Time 1 example
12:14 What do you think about the Holy Spirit? How does the Holy Spirit ...ah..? How is the Holy Spirit important for us? What does it do for us? What does the Holy Spirit do for us?

Prompting was the dominant utterance text process in the Time 2 lesson, with 168 prompting utterances serving to trigger and further support the students' expression. In the earlier stages of the lesson, when collaborative co-construction and expression was more dominant, informing utterances occurred frequently and were more extended, the teacher leading the way and topic to a greater degree than later in the lesson. As the teacher relinquished control and the students took over greater expressive control and duration, informing utterances continued in the form of brief prompts, supplying the students with one or a few words only, as in this transcript example:

Time 2 example
22:24 ...got...
*22:30 ....big planks of...*listening to Mele*
22:37 ...and he...
22:40 pulled....
22:46 ...get his...
22:49 ...out...
22:54 a while... a...
23:03 ...and said...
23:06 ....out...
23:20 ...eat...

The Time 2 lesson moved markedly away from IRE and didactic discourse, and the interactional exchanges dominant at Time 1, towards collaborative co-construction of text and expression. This deliberate pedagogical shift resulted in a greatly reduced number of questioning and confirming text processes, replaced by prompting and informing text process utterances. In line with differences in the reduction or increase of specific utterance text processes in the Time 1 and Time 2 lessons, was a parallel reduction or increase in duration of text processes.

At Time 1, the majority of utterances included some form of questioning (Table 15i), known-closed questions dominant as the teacher sought 'correct' or preferred answers in IRE exchange patterns, or embedded in long explanatory and informing utterances. The expressive dominance and strict interactional control of the teacher offered few if any opportunities for students to respond to teacher posed questions elaboratively or extensively, compounded by the cumulative cognitive confusion as the lesson progressed. The students' responses were short, grammatically and conceptually minimal. Open ended type questions were primarily the teacher seeking a more elaborative 'correct' or preferred response. At Time 2, the overwhelming majority of utterances contained no questions. Some utterances contained more than one question accounting for the higher number of questions in the text process data compared to the number of types of questions, as in this transcript example where the questions served as recall or support-to-peer prompts:

Time 2 example

01:32 That's what we've been doing in the last term, isn't it? So you know what this means? What does this mean? Probably you'll be able to tell me, isn't it? Beja, you can you tell me what this sign means?

01:55 Somebody can help him? What does it mean when we are just adding? You can help him?

Direction of utterances

To whom the teacher directed her utterances reflects the structure and orientation of the Time 1 and Time 2 lessons. In the Time 1 lesson, for example, questions were directed to individual students when in buddy pair groups, as well as to the class as a whole (Table 15j). On three occasions, students were in buddy pairs and each time the teacher joined one or more of these groups, thus controlling what, when and who expressed. In Time 2 lesson 1, the teacher's utterances were evenly distributed between whole class and individual students, or in combination. In the later part of the lesson the students were given an opportunity to independently express in buddy pairs. The teacher worked with Mele alone, offering her expressive support based on what Mele was able to express of the collaboratively co-constructed text from the early part of the lesson. At several points throughout the lesson the teacher selected individual students to express parts of the evolving text, in which case her responses were directed to that student as well as to the class in general, the students poised ready to offer peer support if and when needed. Api frequently took on this role.

Summary

As with the other School B Time 1 and Time 2 lesson analyses, there was a significant shift in pedagogy from IRE and didactic discourse and interactional exchange patterns at Time 1, to collaborative co-construction of text and expression with the teacher in the role of scaffolding informant and co-contributor. In the Time 1 lesson, minimal opportunities were available for students to express, nor was there on offer accessible expression of grammatical quality. The teacher's utterances were unduly complex and lengthy, reducing the potential for acquisition and uptake, and highly directive, with frequent and tightly controlling IRE exchanges. The students' expressive potential was highly constrained by the complexity of the concepts in the lesson, the lack of opportunity to express, and the unavailability of effectively scaffolded text and expression that pushed but did not over-stretch the students' expressive resources.

In contrast, in the Time 2 lesson, IRE patterns of exchange were replaced by the teacher's deliberately planned lesson structure and staging of collaborative co-construction. This orientation offered students meaningful text and expression of grammatical quality and quantity, at the same time supportively pushing their expression to the edge of their grammatical and lexical potential. The students were engaged, supportive, contributory and genuine expressive partners throughout. The lesson was staged calmly and deliberately, the teacher open to spontaneous contributions by students, incorporating these into the evolving story text. While conversational exchanges occurred infrequently throughout, they did occur, the teacher relaxed, responsive and encouraging.

Lesson analysis of both teacher and case study student expression and interaction in Time 1 lesson 2 and Time 2 lesson 1 indicates a convergence, that is, a pedagogical shift by the teacher from Time 1 to Time 2 directly influenced the quality and quantity of Api's expression, and that of all students.

Comparing School B teacher Time 1 Lesson 1 and Time 2 Lesson 3: Focus case study student – Mele

The lesson stages for both lessons are provided in Appendix 4.

Utterance analysis

The School B teacher expressed 254 utterances at Time 1 and 160 utterances at Time 2, with many more short utterances 1-12 words in length at Time 1 compared to Time 2 (Tables 16a & 16b).

Table 16.
School B teacher – Comparison between Time 1 Lesson 1 and Time 2 Lesson 3

Table 16a.
Number of words per utterance

	T1 Les 1	T2 Les 3
1-2	46	27
3-5	51	18
6-8	35	21
9-12	33	16
13-15	19	14
16-20	16	16
21 + longer	54	48
<Any Modifier>	254	160

Table 16b.
Duration of words per utterance

	Les 1 T 1	Les 3 T 2
1-2	00:43.4	00:19.6
3-5	01:24.1	00:34.4
6-8	01:17.5	01:15.5
9-12	01:51.1	01:19.4
13-15	01:26.9	01:37.0
16-20	01:33.1	02:11.3
21 + longer	10:33.4	14:37.2
<Any Modifier>	18:49.5	21:54.4

Table 16c.
Clause type per utterance

	T1 Les 1	T2 Les 3
below clause	50	26
minimal clause	43	22
expanded clause	28	13
clause complex	39	24
multi clauses (complex clauses)	59	56
multi clauses	35	19
<Any Modifier>	254	160

Table 16d
Duration of clause type per utterance

	Les 1 T 1	Les 3 T 2
below clause	01:02.5	00:34.7
minimal clause	01:12.6	00:32.1
expanded clause	01:05.6	00:53.1
clause complex	02:09.8	02:27.7
multi clauses (complex clauses)	10:13.3	14:58.1
multi clauses	03:05.7	02:28.7
<Any Modifier>	18:49.5	21:54.4

Table 16e.
Clauses per utterance

	T1 Les 1	T2 Les 3
0 cl	53	25
1 cl	71	36
2 cl	42	21
3cl	27	22
4cl	15	20
5cl	10	4
6cl	9	6
7 cl	8	8
8 cl	5	1
9 cl	4	4
10 cl	3	1
11cl	-	3
12 cl	3	2
13 cl	2	1
14 cl	-	1
15 cl	1	2
16 cl	-	1
17 cl	1	-
18 cl	-	-
19 cl	-	-
20 cl+	-	2
<Any Modifier>	254	160

Table 16f
Duration of clauses per utterance

	Les 1 T 1	Les 3 T 2
0 cl	01:08.6	00:35.8
1 cl	02:20.0	01:35.2
2 cl	01:54.4	01:46.4
3cl	02:09.5	02:46.9
4cl	01:50.2	02:58.9
5cl	01:24.5	00:44.0
6cl	01:28.8	01:34.2
7 cl	01:26.5	02:13.4
8 cl	00:57.0	00:13.3
9 cl	00:44.6	01:08.7
10 cl	00:42.2	00:37.1
11cl	-	01:07.1
12 cl	01:05.2	00:54.8
13 cl	00:48.0	00:19.0
14 cl	-	00:35.7
15 cl	00:24.4	00:53.1
16 cl	-	00:19.1
17 cl	00:25.5	-
18 cl	-	-
19 cl	-	-
20 cl+	-	01:31.8
<Any Modifier>	18:49.5	21:54.4

Table 16g:
Processes per utterance

	T1 Les 1	T2 Les 3
question	126	21
explain	15	28
prompt	101	85
feedback	12	1
instruct	6	1
comment	10	2
direct	85	62
praise	14	5
criticise	-	1
thank	1	-
describe	1	-
inform	96	90
confirm	72	10
musing	-	-
<Any Modifier>	254	160

Table 16h.
Duration of processes per utterance

	Les 1 T 1	Les 3 T 2
question	11:13.6	04:10.5
explain	02:30.4	06:40.5
prompt	06:06.4	09:38.8
feedback	01:17.2	00:06.8
instruct	00:40.7	00:53.9
comment	00:54.9	00:05.5
direct	09:01.0	12:14.3
praise	01:26.4	01:44.4
criticise	-	00:14.3
thank	00:05.1	-
describe	00:05.6	-
inform	10:44.4	16:09.4
confirm	04:47.8	01:33.7
musing	-	-
<Any Modifier>	18:49.5	21:54.4

Table 16i.
Question type per utterance

	T1 Les 1	T2 Les 3
pseudo question	19	10
zero	114	138
nw-kn-op-cl	8	1
known -closed	67	5
new-closed	17	-
open - known	19	6
open-new	10	-
<Any Modifier>	254	160

Table 16j.
Direction of utterance

	T1 Les 1	T2 Less 3
self	-	-
partner	-	-
teacher	1	-
other peers	5	-
whole class	117	102
group	4	9
child	105	35
combination	30	19
<Any Modifier>	254	160

Many parts of the Time 1 lesson followed typical IRE discourse and interactional patterns of exchange, with teacher posed questions, student display responses, and follow-up question or evaluative comments. These were interspersed with a number of long instructional and explanatory utterances and several confirming, elaborative comments in response to a student's expression of an idea or use of a word in a sentence as in these examples:

Time 1 example

09:21 *What did mum bring next? Number five.*
09:29 *We're not answering together, thank you.*
09:32 *Sit down on your bottom. You had a turn Luci.*
09:36 *Yes, Peta..*
09:38 *Come on.*
09:54 *And what was the last one?*
09:57 *Thank you Peta. Stop snapping. You had a turn, Mele.*
10:02 *You had a turn, Pasi.*
10:06 *And the last one was ice-cream.*
10:09 *Yes. Good girl.*
10:12 *Good girl.*

Time 1 example

10:53 *Now, quickly what we're what I'm going to do ..since we did the sequencing the first two weeks which I just did a brush up with it..just to see if you remembered the order. Now today what we're going to do is we're going to look at the story and we're going pick up the nouns from the story. We're going to pick up the nouns from the story. Thank you Luci, sit up straight please. Okay. who can tell me...?*
11:21 *What do you think a noun is? What is a noun? Do you know what a noun is? We have done it before.*
11:28 *And every time we do shared reading remember we pick up a language feature..and we go through it. So give ..you thinking time..Think about what a noun is. What is a noun?*
11:52 *Okay when you have finished I would like you to fold your hands just like Ela.*
12:00 *Okay. I want you to turn to your buddy and tell your buddy what do you think a noun is.*

At Time 2, the lesson structure and contents was orientated towards offering the students text and expression of grammatical and cognitive quality and quantity about the history of their school. To achieve this, the teacher led the way linguistically, expressing a sequential and descriptive narrative-like history text accompanied by quick drawings on the white board. At times her utterances were extended in terms of the number of words and duration of what she expressed (Tables 16a & 16b) as she built up an evolving text. The students were offered multiple opportunities to co-express the text with peers and the teacher, and try out expressing independently in an iterative process of expression with in-built expressive redundancy, heightening their acquisition and uptake potential. IRE patterns seldom if ever occurred, the teacher prompting and supportively scaffolding the students instead. For example:

Time 2 example

19:52 *...and she was a Josephite sister. Saint Joseph sisters. So I'm just going to put the J. So she was a Josephite. You know Josephite nuns, they have this little logo. So she was a Josephite sister. Okay. In those days when the school was started it was an*
20:18 *open plan school*
20:18 *That is ..open ...an open plan school is ah... they have ...they have.. big classrooms with two classes in one big space. So there were two classrooms*
20:35 *in one big space. So that's the teacher there and these are the children.*
20:43 *It was an open plan school..*
20:46 *that is*
20:51 *...it had two classroom and one big space and there were no closed doors like we have today. Okay. So let's go so far. Let's start from here. Mrs Papa said..*
21:06 *here. She said Mary MacKillop School opened its*
21:14 *...for the...*

Utterances were slightly longer in duration at Time 2 compared to Time 1, particularly in the 21+ word utterances (Table 16b). Total duration of teacher utterances in the Time 1 lesson was 50%, and 60% in the Time 2 lesson. In this regard, available expressive time for Mele and other students to contribute to classroom discourse and try out their own and potentially available 'new' text and

expression had not increased between Time 1 and Time 2. At Time 1, the teacher's speed of expression was at a fast clip, while at Time 2 her words were much more deliberate, delivered more slowly in an effort to increase the cognitive and uptake potential of her text and expression. For example, at Time 1 the teacher expressed a 66 word utterance in 17.9 seconds compared to a 37 words utterance in 24 seconds at Time 2. The change in pace and speed between Time 1 and Time 2 was a deliberate pedagogical shift by the teacher designed to set up optimising conditions for students' potential acquisition and uptake.

Clauses per utterance

The teacher's utterances at Time 1 were spread evenly across the range of clause types, from below clause to multi-clause utterances. There were 133 clause complex and multi-clause utterances, and 121 below clause, minimal and expanded clause utterances (Table 16c). At Time 2, there were far fewer grammatically simple utterances, the greatest proportion of the teacher's expression comprising grammatically complex utterances. The teacher deliberately offered the students text expression of greater grammatical complexity at the cutting edge of their expressive resources, but made such expressions available in more favourable acquisition and uptake conditions than at Time 1, carefully and supportively scaffolding the students as she built up the text and offered them opportunities to try out and practise collaboratively and individually. The greatest amount of time in both lessons was spent on expressing multi-clause utterances, these generally also containing more words per utterance than clause complexes and expanded clauses (Table 16d).

The number of clauses per utterance of 4 or fewer clauses at Time 1 was 208 compared to 124 at Time 2 (Table 16e). Utterances with clauses ranging from 5 clauses up to 20+ clauses were more evenly distributed at Time 2 than Time 1, reflecting the gradual scaffolding of text expression on offer to the students in Time 2 lesson 3 compared to Time 1, when text for potential acquisition and uptake was minimally on offer and ineffectively scaffolded. In general, the more clauses per utterance, the longer the utterance time, however, extended utterance time at Time 2 was also affected by the more deliberate and slower expression by the teacher than at Time 1. This is exemplified in the 7 clause and 9 clause utterances. At Time 1 and Time 2 there were 8 and 4 of each consecutively, yet at Time 2 the duration of each was considerably longer (Table 16f).

Utterance processes

There were a number of significant differences between the Time 1 and Time 2 utterance processes (Table 16g), indicative of a shift from dominant IRE and didactic discourse and interactional exchanges at Time 1 to scaffolded, discursive patterns of expression at Time 2. Questioning and confirming utterances typical of IRE exchanges were greatly reduced at Time 2, with the majority of utterance processes prompting and informing. In lesson 3, Time 2, the informational text and expression was gradually rolled out by the teacher for eventual acquisition and uptake by the students,

accompanied by scaffolded opportunities to collaboratively and independently try out and express. In line with this was a shift in duration time of these utterances. For example, as the number of questioning utterance reduced so also was there a dramatic decrease in duration of these utterances (Table 16h). Throughout Time 1 lesson 1, teacher-posed questions abounded, at times utterances as questions coming one after the other. For example:

Time 1 example
25:14 You have a present. So, is that what we're talking about? Is it present or is it about the cake?
25:20 So, did she make a sentence with cake?
25:22 What did she say with cake?
25:25 What did she say?
25:28 Hmm..?
25:30 You forgot. What did you tell her? Can you tell her again?

Significant at Time 1 was the number of known-closed questions posed by the teacher, again typical of IRE teacher-student exchange patterns (Table 16i). In contrast, at Time 2 only five utterances were known-closed questions.

Direction of utterances

In the Time 1 lesson, questions were directed to individual students and to the class as a whole. Informational utterances were predominantly to the whole class but at times to individual students when the teacher worked with one particular buddy pair. At Time 2, with the lesson orientated towards slowly building an informational narrative-like history text so that all students would eventually be able to understand and express such a text independently, partially or wholly, the majority of the utterances were directed to the whole class (Table 16j).

Summary

There was a significant shift in the discourse and interaction patterns between Time 1 and Time 2, the teacher's orientation at Time 2 towards offering students carefully scaffolded text whereby each student would potentially be able to understand and express a relatively complex partially or wholly. She supportively pushed Mele, the case study student in focus in Time 2 lesson 3, towards greater quality and quantity of expression and potential acquisition and uptake. In so doing, the teacher moved completely away from IRE patterns of discourse and interaction that were dominant in Time 1 lesson 1. With that came a marked reduction in questioning and confirming utterances, a high number of which were known-closed question types, and a parallel decrease in utterances of minimal word length, a feature of IRE teacher-student utterance exchanges.

At Time 1 the teacher expressed at a fast pace, the students' acquisition and uptake potential minimalised as a result. At Time 2, the teacher expressed more deliberately and slowly alongside depicting text and meaning through quickly sketched pictures. Her explicit orientation was towards optimising discourse and interactional conditions, and pushing students to heightened acquisition and uptake potential. As a consequence, at Time 2 prompting and informing utterance processes were at the fore, whereas at Time 1 questioning and confirming utterance processes were dominant. These

were interwoven with informing processes in long, fast paced utterances, minimising the students' acquisition and uptake potential. The significant pedagogical shift made by the teacher between Time 1 and Time 2 was intentionally and explicitly executed so as to provide optimising discourse and interactional conditions that would push the students' quality and quantity of expression grammatically and lexically. As a result, Mele as an example, was offered greater acquisition and uptake potential at Time 2 than at Time 1, and was engaged and participatory to a degree not possible when the general pedagogical orientation thrust was IRE teacher-student exchanges and didactic discourse, as in Time 1 lesson 1. At Time 2 the teacher deliberately built in expressive redundancy, scaffolding the students so they could express the evolving informational text with increasing independence.

Neither lesson was dialogic in nature, offering the students almost no opportunities to engage in dynamic informal conversation with the teacher and peers. In the Time 1 lesson the teacher took strict control of the topic and the way, with discourse and interactional patterns unsupportive of dialogic exchanges, and in the Time 2 lesson, the teacher was so focused on making available the informational text discursively, that conversational exchanges were not factored in. Lesson analysis of both teacher and case study student expression and interaction in Time 1 lesson 1 and Time 2 lesson 3 indicates a convergence, that is, a pedagogical shift by the teacher from Time 1 to Time 2 directly influenced the quality and quantity of Mele's expression.

Comparing School B teacher Time 1 Lesson 3 and Time 2 Lesson 2: Focus case study student - Palo

The lesson stages both lessons are provided in Appendix 5.

Utterance analysis

Both the Time 1 and Time 2 lessons were building on the topic and focus of one or more previous lessons. Time 1, lesson 3 was a continuance of a focus on role models begun a week or so earlier, consisting of a recap of what a role model is, followed by a description and discussion around family role models. Time 2, lesson 2 flowed out of the previous day's lesson in which the students and teacher collaboratively co-constructed an evolving story based on the book, *The poor sore paw*. In both lessons the teacher was orientated towards capturing previous understandings and building on these, but a key difference in the Time 2 lesson was the availability of carefully scaffolded quality and quantity of expression built up in the previous lesson. In the Time 1 lesson, the students had not been supportively scaffolded to express with grammatical and lexical quality, nor been offered extended opportunities to practise and say and thus their expression in the lesson drew primarily on the students' existent competency. Differences between the discourse and interactional patterns of each lesson impacted significantly on how, what, why and when ideas and meanings were expressed.

The School B teacher expressed 157 utterances at Time 1 and 151 utterances at Time 2 (Table 17a).

Table 17.
School B teacher – Comparison between Time 1 Lesson 3 and Time 2 Lesson 2

Table 17a.
Number of words per utterance

	T1 Les 3	T2 Les 2
1-2	18	32
3-5	14	28
6-8	30	13
9-12	21	14
13-15	10	14
16-20	16	17
21 + longer	48	33
<Any Modifier>	157	151

Table 17b.
Duration of words per utterance

	T1 Les 3	T2 Les 2
1-2	00:22.7	00:33.8
3-5	00:33.9	00:54.2
6-8	01:27.8	00:39.2
9-12	01:28.7	01:01.6
13-15	00:45.4	01:30.7
16-20	01:53.4	02:14.5
21 + longer	14:20.5	09:49.5
<Any Modifier>	20:52.4	16:43.6

Table 17c.
Clause type per utterance

	T1 Les 3	T2 Les 2
below clause	14	29
minimal clause	27	27
expanded clause	19	9
clause complex	12	16
multi clauses (complex clauses)	61	44
multi clauses	24	26
<Any Modifier>	157	151

Table 17d.
Duration of clause type per utterance

	Les 3 T 1	Les 2 T 2
below clause	00:20.5	00:42.0
minimal clause	01:04.2	00:46.5
expanded clause	00:54.8	00:29.2
clause complex	01:06.4	01:35.8
multi clauses (complex clauses)	15:19.0	10:45.3
multi clauses	02:07.6	02:24.8
<Any Modifier>	20:52.4	16:43.6

Table 17e.
Clauses per utterance

	T1 Les 3	T2 Les 2
0 cl	15	30
1 cl	45	34
2 cl	25	27
3cl	18	20
4cl	11	10
5cl	9	9
6cl	6	6
7 cl	2	3
8 cl	4	2
9 cl	3	2
10 cl	2	1
11cl	3	-
12 cl	1	2
13 cl	3	-
14 cl	1	-
15 cl	1	1
16 cl	-	-
17 cl	3	-
18 cl	1	1
19 cl	2	-
20 cl+	3	2
<Any Modifier>	157	150

Table 17f:
Duration of clauses per utterance

	T 1 Les 3	T2 Les 2
0 cl	00:22.5	00:44.0
1 cl	01:57.7	01:07.5
2 cl	01:42.3	02:14.6
3cl	01:49.9	02:23.6
4cl	01:09.5	01:11.7
5cl	01:10.7	01:22.1
6cl	01:07.4	01:26.6
7 cl	00:26.9	00:36.9
8 cl	00:53.5	00:38.1
9 cl	00:59.8	00:31.0
10 cl	00:41.3	00:13.5
11cl	01:17.5	-
12 cl	00:15.1	01:15.4
13 cl	01:31.7	-
14 cl	00:20.9	-
15 cl	00:30.8	00:29.6
16 cl	-	-
17 cl	01:40.8	-
18 cl	00:26.6	00:32.3
19 cl	00:22.5	-
20 cl+	02:05.1	01:34.2
<Any Modifier>	20:52.4	16:21.5

Table 17g.
Processes per utterance

	T1 Les 3	T2 Les 2
question	92	28
explain	14	16
prompt	66	107
feedback	7	8
instruct	8	3
comment	13	3
direct	41	88
praise	5	5
criticise	-	1
thank	1	-
describe	2	-
inform	23	39
confirm	49	19
musing	-	-
<Any Modifier>	157	151

Table 17h
Duration of processes per utterance

	T1 Les 3	T2 Les 2
question	10:45.1	04:24.9
explain	04:38.4	04:12.9
prompt	05:24.6	10:14.3
feedback	01:10.3	01:00.2
instruct	02:40.1	00:59.0
comment	03:03.5	00:14.5
direct	07:27.7	12:46.8
praise	00:29.5	01:19.8
criticise	-	00:10.4
thank	00:16.8	-
describe	00:47.9	-
inform	07:28.4	06:49.6
confirm	06:23.9	02:18.5
musing	-	-
<Any Modifier>	20:52.4	16:43.6

Table 17i.
Question type per utterance

	T1 Les 3	T2 Les 2
pseudo question	5	4
zero	64	121
nw-kn-op-cl	1	1
known -closed	47	14
new-closed	7	7
open - known	2	2
open-new	31	2
<Any Modifier>	157	151

Table 17j.
Direction of utterance

	T1 Les 3	T2 Les 2
self	-	-
partner	-	-
teacher	-	-
other peers	-	-
whole class	25	22
group	3	2
child	108	99
combination	24	31
<Any Modifier>	157	151

The total duration of utterances was proportionately less at Time 2 (16.44 minutes) than at Time 1 (20.52 minutes) [Table 17b], with a resultant increase in available expressive space for the students at Time 2. In Time 1 lesson 3, the teacher went to great lengths to explain and describe role models and examples from her family. This accounts for the majority of the 48 21+word utterances, the others either when the teacher was giving detailed instructions to the students or responding to or querying students in regard to what they were trying to express, as in these examples:

Time 1 example

12:43 *Okay. So today what I've done is ..I've brought you...I'm gonna I'm gonna give you example of my family. Okay. This is my family. This this is my dad. This is my mum. That's me of course. This is my ..This is my eldest brother and this is my second brother. So my my mum, my dad, my big brother and my second brother and me.*

13:15 *Okay..so that was when I got married. That's a good family picture and I always keep it on my dressing table so I can look at them because they were far, far away.*

13:26 *Okay...now I've got..I'm ..I've named...That's my family. I'm going to name my role model. I'm giving you an example so you need to look..listen carefully because you're going to do it after me. So my role model is my mum. That's my mum, and you know what, my mum was a teacher too. She taught ..she taught for 32 long years and she was a Principal too..so I learnt lots and lots of things from my mum. Now, I'm going to show you something on the ..on the active board.*

Time 1 example

18:14 *Okay, I'm going to go back to the learning intention. So I am learning to name a role model in my family and now.. next thing that I'm going to do is say why, if it's a gent .it would be he, why is he, maybe dad or grandpa, why is he or why is she, maybe your mum or dad or grandma your role model, or why is um maybe an aunty who stays with you a role model. Anybody in your family who is in your family is a role model to you. Name them then I want you to think of three things about why they are a role model. I gave you mine remember. Look at mine. This is my role model and I've said why she is my role model. She is my role model because I could look up to her at any time. She was hardworking, she was always busy from the time she got up to till the time she went to bed and...*

The complexity and extent of these utterances placed considerable listening demand on a student such as Palo, the case study student also in focus in this lesson. There were fewer utterances of between 1-5 words than at Time 2, and considerably more of utterances of between 6-12 words, but little difference in the number of utterances of between 13 and 21+ words in length (Table 17a).

In Time 2 lesson 2, the teacher consciously and explicitly focused on capturing the students' known, cognitively and linguistically, and offering them further opportunities to consolidate and expand the quality and quantity of their expression. She did this by using word group strips to build in expressive redundancy, by prompting the students to draw on their own resources as much as possible while nudging peers to offer needed support and input to each other. For example:

Time 2 example

17:18 *Help him. Api you can help him. Let's see how you can help him. Ah, put that away please. Go on Tom. I know you can do it. Who can help Timmy?*

17:34 *Yes Vonyae. You can help Tom? Api you can help Tom, I'm sure. Go on the, go.*

17:45 *I'm sure you can talk Tom. Go.*

17:50 *Loudly please.*

17:52 *Help.. help Tom to come up with a sentence for 'Stuck in the bridge'.*

18:10 *Go Tom. You can say it as well.*

The teacher mediated much of this without becoming overly dominant. The number of words per utterance reflected this orientation, with a high number of utterances of between 1-5 words. For example:

Time 2 example

06:41 *....were....*

06:50 *....started....*

06:56 *Come on. They sat....*

07:02 *.....because they...*

07:12 *...because they couldn't go.....*

07:17 *.....because they couldn't go home. Okay. Come on, let's say that again Mele. Come on.*

The longer utterances of 21+ words were primarily instructional and explanatory utterances in regard to steps and stages of the lesson, or affirming utterances. A few longer informational utterances were expressed when the teacher was supporting the younger students to express detailed sentences using the various word groups. The following transcript excerpts are examples of each of these, the first an instructional, explanatory utterance, the second an affirming utterance, and the third a scaffolding informational utterance.

Time 2 example
11:40 *Now I want you to turn to your buddy. Turn to a buddy.*
11:44 *...and tell your buddy one clever sentence about 'Stuck in the bridge. Ah Palo you come to me. Palo come to me. Yeah. Ah..Beja you go to Colleena. Come. Palo. Come on. Let's say one sentence about 'Stuck in the bridge'. Let's see what you could say.*

Time 2 example
26:18 *Good girl Api. Well done. So that was a lovely long sentence and you really really thought about it. Now we're got a last strip left. Jord, I know you're waiting. Come.*

Time 2 example
19:27 *...two pieces of..or between the two planks of wood and he couldn't go home. The other animals who..who came after...Go on help her.*
19:48 *Kasi. You helping Chi. The other animals who came...Go on Chi. After the dog was sitting behind him and were stuck in the bridge because they .....*

The duration of words per utterance reduced overall from Time 1 from Time 2 (Table 17b), the greatest decrease in duration for utterances of 21+ words in length, an expected result considering some of the very long utterances in terms of word number expressed by the teacher at Time 1. The differences between Time 1 and Time 2 in duration in proportion to the number of words per utterance is indicative of the speed of expression by the teacher at Time 1 compared to Time 2 when she was more deliberate and slower in her expression overall. At Time 1 she often expressed at quite a pace and moved to a next utterance quickly, seldom providing students extensive thinking and processing time. In these two examples, the teacher expressed 129 words in 0.39 minutes at Time 2 compared to express 98 words in 0.32 minutes at Time 2.

Time 1 example
19:27 *Yes just like me. I know. And sh she was always warm and loving and she helped me in my studies. Anytime I had problems with my studies she helped me, she encouraged me to achieve my goals. In fact I am a here teacher because of my mum because she said, Oh you'd better do the teacher's training and I did my training because of my mum. And whenever I was sad and someone did something to me or I was really unhappy I used to go and talk to her and she would always listen to me. So ..I ..so I want you to think about why you have mum or dad or anybody as a role model. so what I want you to do now...Yes Jala?*

Time 2 example
04:12 *Oh good girl. Okay. That was really really nice to go back to the story to see what we remembered as well and it also tells us about this lovely picture we have up here. Now I've I've got groups of words here. I've got five groups of words. Okay. I'm going to call one person to come up. I'm going to pick up maybe five different people to pick up one strip. you're going to read it then you're going to put it up there and we're going to make a very clever sentence about it.Alright. Okay.*

Clauses per utterance

There were a high number of multi-clause utterances at both Time 1 and Time 2 (Table 17c). Alongside the number of clauses per utterance data, it becomes evident that the Time 1 multi-clause utterances contained more clauses in the range of between 8 to 21+ clauses than at Time 2, indicative of the extended and complex nature of many utterances at Time 1 (Table 17e). There was a decrease

in multi-clause utterances with clause complexes at Time 2 from Time 1 and an increase in below clause utterances as the teacher prompted and nudged the students' expression using economical expression herself. Because the Time 2 lesson was a follow up to the previous lesson when quality of expression had been supportively scaffolded throughout the lesson for potential student acquisition and uptake, the teacher's orientation in the Time 2 lesson was to scaffold the students' independent expression and push them to try out their potential acquisition from the day before. With minimal expressive modelling from the teacher, there were a higher number of grammatically and lexically simple utterances.

The duration of multi-clause utterances with clause complexes at Time 1 aligned with the Time 1 number data, that is, longer utterances took more expressive time, this counterbalanced by faster speed of expression. Conversely, at Time 2, with fewer multi-clause utterances with clause complexes and a more deliberate pace and slower speed of expression overall, there was a reduction in duration time.

The majority of utterances at Time 1 and Time 2 contained between nil to 3 clauses (see Table 9), as in the following two examples, the first from Time 1 lesson 3 when the teacher was collecting selected student's expression about their family role model in the whole class group; the second from Time 2 lesson 2 when the teacher was prompting and nudging the student's expression related to the word group and picture.

Time 1 example
24:47 *Nana. Okay why is nana your role model?*
24:53 *She helps you to..?*
24:59 *What does nana do for you?*
25:04 *Loudly darling.*
25:08 *She..What did she say? Did she say something about her nana?*
25:14 *You don't know. She was talking to you isn't it? So what did she say? Who was her role model?*
25:28 *Because she showers you. Okay. She gives you a shower. What else does she do for you? Good girl.*

Time 2 example
09:39 *....the goat...*
09:51 *Go on. Add more.*
09:54 *Add more Peta.*
09:55 *The goat sat down behind the dog and howled because...*
10:14 *to eat*
10:19 *Okay, let's take another one now. Um. Api, you'd like to come and pick one up?*
10:37 *Okay, going to read that first.*
10:42 *....'Stuck on the bridge'. Now I want you to think about the clever sentence for 'Stuck in the bridge'. Okay.*

Utterance processes

The marked reduction in the number of questions from Time 1 to Time 2 (Table 17g) was indicative of a shift from IRE and didactic discourse and interactional patterns dominant at Time 1 to a strong orientation at Time 2 towards prompting and nudging student expression. This was indicative of the deliberate orientation at Time 2 away from constraining IRE and didactic discourse and interactional patterns towards less expressive dominance by the teacher and more focus on supportively pushing the students to retrieve grammatical and lexical expression of quality and quantity from the previous

lesson - hence the high number of prompting and directing text processes at Time 2 compared to Time 1. On average, the teacher expressed just under two question utterances every minute of the 30+minute Time 1 lesson compared to about one question utterance per minute in the Time 2 lesson (Table 17h). The questioning in the Time 2 lesson often acted as a nudge and prompt while in the Time 1 lesson questions were often part of the IRE exchange pattern frequently occurring throughout this lesson**.** The differences in questioning text processes between the two lessons are illustrated in these two examples:

Time 1 example
27:02 Anything else?
27:05 Fold your hands Peta.
27:11 You got to play some game, isn't it? So who helps you with that?
27:17 Your uncle. So it is not your dad? Dad doesn't take you to the game, does he? Does dad take you?
27:24 Your uncle. Okay. Fine. Anybody else? Jord.

Time 2 example
12:30 There were lots of diff..different animals ..three different animals, isn't it? So th the dog, the goat and the ....and who's this? This is the ....This is the farmer...so
12:48 When they were walking along the bridge.....What happened first to the dog?
12:53 What.?... Look at the dog.What's happening to the dog here?

In Time 2 lesson 2, on a number of occasions students spontaneously offered an idea or elaboration. The teacher responded positively to these, prompting the student to elaborate further, opening up a dialogic exchange of several turns. At Time 2, there was an established classroom culture that spontaneous contributions by students were to be valued and included resulting in the students contributing more frequently and comfortably, and the teacher increasingly at ease with the students leading the way and topic at times and how best to respond. In contrast, at Time 1 the teacher was firmly in control and students were expected to put hands up and respond only when selected to do so by the teacher.

In line with the number of utterance text processes, the duration of utterance text processes data (Table 17h) indicated extensive time taken up with questioning and confirming utterances at Time 1. In the Time 2 lesson, there was a marked reduction in time taken for question and confirm utterances text processes, counterbalanced with an increase in time taken for prompting and directing text process utterances.

The majority of questions posed in the Time 1 lesson were known-closed questions (Table 17i), the teacher eliciting student display type responses in a typical IRE exchange pattern. However, there were also a significant number of open-new questions, the teacher posing questions in an effort to elicit from the students their own personal information as yet unknown to the teacher. Think, prepare and express time available to the students was often very limited, questions at times coming in a run without any response time or space available to the students, as in this example:

Time 1 example:
02:13 What is a role model?
02:19 Yeah, they love others. So why are we learning about role models? So that we can...?

02:31 *So that we can ....be...be each other ...be what? So that you can be a ..you can be a friend. Okay, so why are we learning? You know ..you know...what a role model is?*
02:48 *A role model is a person who..?*
02:52 *What is a role model? What is a role model? A role model is a person who does..?*

At Time 2, the vast majority of utterances were statements not questions, with the highest number of questions known-closed questions as the teacher prompted the students using question form to express a known text. For example:

Time 2 example
14:57 *Okay. Turn around and let's see if somebody can tell us a very clever sentence now. Oh Palo you think you can tell us? Yes? Okay. Good tell us.*

Direction of utterances

In the Time 1 lesson, the high number of teacher utterances directed to individual children reflected the orientation of the lesson towards querying many individuals in typical IRE exchanges (Table 17j), while in the Time 2 lesson utterances directed to individual children reflected the teacher's orientation towards pushing as many individual students as possible to express independently, or when nudging peers, to provide an evidently struggling student with needed text support.

Summary

As in the Time 1 lesson 1 and Time 2, lesson 3 comparison, there was a significant shift in the discourse and interaction patterns between Time 1, lesson 3 and Time 2, lesson 2. While the number of utterances overall changed little, the number and duration of utterances in terms of words per utterance and clause type changed in a number of significant ways resulting in an overall shift from extensive expressive dominance by the teacher at Time 1 to a less intrusive, nudging and prompting discourse and interactional role at Time 2. Many utterances at Time 1 were long in word number and duration, and complex grammatically and lexically, positioning Palo, the case study student, as a non-participatory, often disengaged expressive contributor. In the Time 2 lesson, while there were a large number of multi-clause utterances of 21+ words, these were not as extensive in word number and duration as at Time 1. Alongside these longer utterances were a relatively high number of below clause and minimal clauses, with between 1-5 words per utterance, reflecting the lesson structure and orientation towards prompting and nudging students to recall and expand previously scaffolded text expression. There was a deliberate move away from fast paced, complex, extended expression by the teacher and IRE dominant patterns of discourse and interaction at Time 1 towards creating optimal expressive conditions to encourage to express with grammatical and lexical quality and quantity, doing so with quite some confidence and fluency. Text and expression on offer and practised the previous day became the point of departure for students' expression in the Time 2 lesson.

As a result of the changed discourse and interactional patterns in the Time 2 lesson, Palo as an example student was not only engaged, attentive and participatory cognitively, but contributed expressive text that was both meaningful and comprehensible as he pushed himself and was pushed to

express with more quality and quantity than he otherwise would. Changes in lesson orientation and teacher discourse, including a strong move away from IRE exchange patterns and didactic, dominant expression by the teacher, opened up opportunities for students to express more, and to try out their expressive competency gains from the previous lesson. Spontaneous contributions by students were picked up by the teacher and included, the classroom discourse and interactional patterns orientated towards collaborative co-construction with the teacher as mediator. Palo's quality and quantity of expression was enabled as a result. While the teacher may not have fully executed optimising conditions at Time 2, it is evident she had moved a long way towards it. Teacher and student analysis of Time 1, lesson 3 and Time 2, lesson 2 indicates a convergence, that is, a pedagogical shift by the teacher from Time 1 to Time 2 directly influenced the quality and quantity of Palo's expression.

Comparing School A teacher Time 1 Lesson 1 and Time 2 Lesson 3[8]: Focus case study student - Ara

The lesson stages for Ara are provided in Appendix 6.

Utterance analysis

The School A teacher expressed 220 utterances in the Time 1 lesson, with a mean of 6.79 utterances per minute, and 232 utterances in the Time 2 lesson with a mean of 7.85 utterances per minute (Tables 18a & 18b).

Table 18.
School A teacher – Comparison between Time 1 Lesson 2 and Time 2 Lesson 3

Table 18 a.
Number of words per utterance

	T 1 Less 1	T 2 Less 3
1-2	24	26
3-5	46	51
6-8	37	47
9-12	49	37
13-15	25	13
16-20	18	16
21 + longer	21	42
<Any Modifier>	220	232

Table 18b.
Duration of words per utterance

	T 1 Less 1	T 2 Less 3
1-2	00:19.2	00:24.9
3-5	00:59.3	01:19.1
6-8	01:10.0	01:44.0
9-12	02:23.6	01:49.0
13-15	01:44.5	01:14.5
16-20	01:37.5	01:19.7
21 + longer	02:52.1	08:52.2
<Any Modifier>	11:06.3	16:43.4

[8] A technical hitch resulted in a premature finish to the Time 1 lesson videoing, and the videoing of the case study student was not synchronised with that of the teacher. The analysis of teacher utterances in the lesson was nonetheless useful, offering valid discourse and interactional insights into the interactional and discourse conditions in operation.

Table 18c.
Clause type per utterance

	T 1 Les 1	T 2 Les 3
below clause	29	36
minimal clause	39	47
expanded clause	25	26
clause complex	36	36
multi clauses (complex clauses)	35	56
multi clauses	56	31
<Any Modifier>	220	232

Table 18d.
Duration of clause type per utterance

	T 1 Less 1	T 2 Les 3
below clause	00:28.3	00:55.1
minimal clause	00:57.6	01:14.1
expanded clause	00:46.3	00:48.8
clause complex	01:55.3	02:27.0
multi clauses (complex clauses)	03:24.7	08:52.5
multi clauses	03:34.1	02:26.0
<Any Modifier>	11:06.3	16:43.4

Table 18e.
Clauses per utterance

	T 1 Less 1	T 2 Less 3
0 cl	29	36
1 cl	69	72
2 cl	61	45
3cl	28	29
4cl	19	11
5cl	6	11
6cl	2	9
7 cl	3	7
8 cl	2	6
9 cl	-	3
10 cl	-	-
11cl	-	1
12 cl	-	1
13 cl	-	-
14 cl	-	-
15 cl	-	-
16 cl	-	-
17 cl	-	-
18 cl	-	-
19 cl	-	-
20 cl+	-	1
<Any Modifier>	219	232

Table 18f.
Duration of clause per utterance

	T 1 Less 1	T 2 Less 3
0 cl	00:28.3	00:54.2
1 cl	01:56.5	02:00.9
2 cl	02:51.1	02:52.7
3cl	02:00.8	02:00.7
4cl	01:50.3	01:21.9
5cl	00:39.3	01:23.2
6cl	00:16.4	01:30.0
7 cl	00:33.4	01:22.2
8 cl	00:18.3	01:19.9
9 cl	-	00:48.8
10 cl	-	-
11cl	-	00:13.7
12 cl	-	00:20.5
13 cl	-	-
14 cl	-	-
15 cl	-	-
16 cl	-	-
17 cl	-	-
18 cl	-	-
19 cl	-	-
20 cl+	-	00:34.8
<Any Modifier>	10:54.4	16:43.4

Table 18g.
Processes per utterance

	T 1 Less 1	T 2 Less 3
question	91	106
explain	52	56
prompt	88	132
feedback	43	63
instruct	8	3
comment	40	5
direct	92	73
praise	13	6
criticise	3	1
thank	-	-
describe	4	6
inform	72	106
confirm	35	55
musing	-	-
<Any Modifier>	220	232

Table 18h.
Duration of processes per utterance

	T 1 Less 1	T 2 Less 3
question	04:42.2	08:11.3
explain	04:08.0	07:27.3
prompt	04:10.8	08:47.0
feedback	02:10.3	05:24.6
instruct	00:26.7	00:20.6
comment	02:20.4	00:26.0
direct	05:46.3	06:51.9
praise	00:33.8	00:29.9
criticise	00:20.2	00:01.2
thank	-	-
describe	00:15.8	00:56.1
inform	05:10.5	10:34.4
confirm	01:54.5	04:36.7
musing	-	-
<Any Modifier>	11:06.3	16:43.4

Table 18i.
Question type per utterance

	T1 Less 1	T 2 Less 3
pseudo question	21	24
zero	118	119
nw-kn-op-cl	3	7
known -closed	41	48
new-closed	28	22
open - known	1	2
open-new	8	10
<Any Modifier>	220	232

Table 18j.
Direction of utterance

	T 1 Less 1	T 2 Less 3
self	1	-
partner	-	-
teacher	1	-
other peers	-	-
whole class	3	31
group	100	127
child	109	45
combination	10	35
<Any Modifier>	220	232

At Time 1, the lesson was organised into group rotations, the teacher working with two consecutive groups at her teaching table in a micro-teaching situation. Ara, the case study student in parallel focus in the lesson, was in the second micro-teaching group, working independently for the first half of the lesson, and with the teacher for the second half. At Time 2, Ara was in direct contact with the teacher throughout the whole of the lesson time.

There are larger differences between the utterances ranging from 13-15 and 21+ words per utterance at Time 1 and Time 2 than in the utterances ranging from 1-12 and 16-20 words per utterance (Table 18a). At Time 1, there were fewer long utterances, the teacher's utterances primarily directed towards

the two micro-teaching students reading their level books with her at the teaching table. Each of the two micro-teaching reading sessions followed more or less the same format: identifying the book, contextualising the story, students reading the print text, a brief recap, and task setting. With the first group, the few longer utterances by the teacher were instructional as she guided the students to attend to and read text words. With the second pair of students, more advanced readers, the longer utterances were primarily informational. Utterances addressed to students working elsewhere in the classroom accounted for most of the remaining longer utterances, these mostly to direct or instruct students in some way. Examples in each of these situations illustrate these differences, the first and second examples when working the two micro-teaching groups, and the third example when addressing students around the classroom.

Time 1 example

07:19 *Now you stopped here on wheels..If you have a look at 'wheels'. what would you expect to see at the end? If that was 'wheel...s'*

Time 1 example

22:21 *And then Emma got the rug and Matthew started to run after Emma.*

22:26 *Oh my gosh. Look what she's done. She's put it over the table. And she's saying 'It's a big whale.' Remember the story is about a crocodile and a whale.*

22:38 *So here's her whale..and she says 'Come on..' and they're playing inside the big whale.*

22:48 *It's a funny little story, isn't it. These are brand new books. They are brand..You're the first people to get our brand new School A stories.*

Time 1 example

11:22 *You need to sit and maybe paint another picture, okay? Get out some more paper Alo and paint another picture*

11:31 *Ah Isa, where are you meant to be? Are you doing your stencils? Have you coloured your stencils in?*

At Time 2, the higher number of 21+ word utterances comprised mainly of instructional utterances as the teacher organised the few students not working directly with her in the small group, and informational utterances as the teacher set up a meaningful point of departure to give context to the Maths problem the students were to consider and solve. The latter captured the imaginations and interest of the students, sustained throughout the rest of the lesson. Spontaneous comments were forthcoming, with some lively dialogue occurring at times. The rich expression of the teacher's anecdotal utterances is illustrated in this example:

Time 2 example

09:05 *Do you know that yesterday.. last night, somebody broke into our kitchen in the hall? They did. They broke into the kitchen. They smashed the door in...*

09:18 *No probably with their feet, I think. and they took all of the chocolate milk...and I was going to use some of that chocolate milk today because I thought we could try sharing some of it but I couldn't because they've they'd taken it all. So I thought well....*

09:53 *Ooo I could try sharing some of our fruit but they'd kind of taken all the fruit as well. So I had to think and I said ..I said to Mrs Mrs F, I need fruit today for my maths but there's not enough because the robbers have come and taken it.*

09:54 *No they were just naughty people who broke in and took it. So she said, well, you know what Mrs G? You could take some of it and share it ...So I thought I might take some of the fruit and see if we can share it so all of you have the same amount ..*

The higher number of 13-15 word utterances at Time 2 reflected the on-going comments by the teacher as she scaffolded the students in the Maths group towards solving the sharing problem. During this stage of the lesson her utterances were enough to offer the students informational and querying input without becoming too dominant. For example:

Time 2 example

20:52 *Okay so I've cut our great big block of chocolate*
21:01 *Now Tavi, where did you think it was?*
21:05 *So you think it there..is there Jessica. Ara, where do you think it is? Where do you think the middle is so we can share it? Where's the middle?*
21:15 *Let..let her have a look at it so she can see how she'd share it.*
21:22 *Oh, so you'd go long ways down the centre? Down...right down the middle longways. Oh, now I hadn't thought of that so she's going to break it down the centre this way. Tavi's gonna break his down that way.*

21:40 *Okay. You guys are in luck 'cause I've got two big blocks of chocolate so let's see if they work, okay? Are you ready?*

Time 2 example

06:59 *No, ah Kaeya, can you have Rana as well? on...Okay. So Rana, you are with Alo on Millie's math house and Kaeya's coaching you. Okay. So you need to talk with her.. You can't. You're with me.*

The duration of words per utterance data (Table 18b) indicated that the almost double number of 21+ word utterances at Time 2 consumed fourfold as much time, these utterances being more sustained and elaborative than 21+ word utterances at Time 1. With most of the students working with the teacher in the Time 2 lesson, she was responsively more focused than in the Time 1 lesson when her focus oscillated between the two students with her at the teaching table and students on tasks elsewhere in the classroom. This affected the cohesion and flow of exchanges between her and the students directly in front of her. The Time 1 lesson appeared somewhat formulaic and dislocated, with many missed opportunities to exchange rich, quality expression and ideas with the reading students. The longer duration of expression at Time 2 compared to Time 1 was affected by the longer lesson time, some 6 minutes longer than Time 1, and the more frequent and sustained 21+ word utterances.

Clauses per utterance

The greatest complexity differences between the Time 1 and Time 2 lesson as measured by clause type and number (Table 18c) was in the multi-clause utterances. The higher number of multi-clause with clause complex utterances at Time 2 reflected the greater complexity of the teacher's expression. For example:

Time 2 example

16:20 *It is like a moon. You're right. It's like a moon. It's just like a moon. So we need to think about how we can share this so Sara...Tavi...We need to cut it so Sara has the same amount as me.*
16:37 *Can you show me with your hand what you just did? Show me again with your hand and how you...how you were going to share it. Ant.*
16:46 *Ho...Do you think she's right?*
16:48 *Shall we have a little look? Shall we look and see if she is right?*
16:58 *So Ant said we should cut it right through the middle. What if I cut it like that?*
17:06 *No... because that is a little bit flatter and that's got a little bit twist in it, hasn't it? So that person might end up getting a little bit more.*

In contrast, these two multi-clause utterance examples from the Time 1 lesson were at a much simpler level of grammatical complexity.

Time 1 example

04:13 *Yes, so you've got to turn the pages very carefully. It's called Round and round.*
04:21 *..and they're telling us all the things that go round and round. Can you say round and round?*
04:28 *..and they're all about the wheels that go round...It's like the wheels on the bus go round and round - you're right.*

Time 1 example

10:35 *(child wants to tell teacher something related to book - ignored)*

10:37 Can you have a look at your wheelbarrow page...Have a look at your wheelbarrow page...(folds open child's book)
10:44 and show me that word goes..Show me that word goes. (looking away but pressing page of book open)
10:48 (children reading page - teacher busy boards, tiles, books, note making)
11:03 Goes..Can you make that word for me, quickly? Make that word for me.

The high number of below clause and minimal clause utterances at Time 2 (Table 18c) were interwoven with more complex utterances by the teacher as she scaffolded the students into and through the Maths solving problem. The duration of clause type data (Table 18d) paralleled the number data, with multi-clause with complexes utterances more sustained in terms of time at Time 2 than at Time 1. This was not the case with multi-clause utterances at Time 1, almost double in number compared to Time 2 yet not in duration, reflecting the less elaborative nature of teacher utterances at Time 1.

The greatest difference in clause number per utterance between Time 1 and Time 2 was with utterances ranging from 6 to 20+ clauses per utterance (Table 18e). The higher number of these utterances was multi-clause with clause complexes utterances in the Time 2 lesson, with the teacher more elaboratively responsive in her exchanges with the students than at Time 1. In the carefully scaffolded structure of the Time 2 lesson, the elaborative narrative expressed by the teacher to contextualise the Maths problem drew lively conversational responses from the students, the teacher deliberately stimulating students' engagement and involvement expressively and cognitively. While she did not offer students opportunities to try out the narrative text she expressed, nor provide in-built redundancy by way of recycling the text, with the high level of noticing and engagement by the students, potential acquisition and uptake potential was enhanced. Had she layered in expressive retell opportunities by the students of the rich narrative text expressed her, the students' acquisition potential would have been further enhanced. Throughout the Maths staging of the lesson, the teacher was at ease with and encouraged rich dialogic exchanges, not evident in the Time 1 lesson. The students' thinking and ideas in response to the topic in hand was externalised expressively, valued and meaningfully responded to, a feature of optimal discourse and interactional conditions. In this example, as the teacher narrated the story of robbers breaking into the school tuck shop, the students were commenting and remarking, deeply engaged with the text. When Ara spontaneously suggested an idea, the teacher picked this up and further elaborated. This was not evident in the Time 1 lesson, where the teacher's tight control of the topic and the way offered little opportunity for students to engage in rich dialogic exchanges and spontaneously contribute.

Time 2 example
10:15 Miss.. Miss G, you should have been like a guard and standed there or something.
Teacher
10:21 Yes but I was in bed when it happened. So I got some fruits and I thought we might share it...but we've got to make sure that everybody gets the same amount so that it is fair. Do you know what it's mean to be fair?
Antonia
10:34 Yes, you share it then.
Teacher
10:36 You share it so everyone has the same..
10:39 Everyone has the same....

In both Time 1 and Time 2 lessons there were a high number of questioning, prompting, directing and informing text processes (Table 18g). However, proportionate to the total number of utterances, there was a reduction of directing utterances and an increase in prompting and informing utterances from Time 1 to Time 2. The questioning utterances in the Time 2 utterances were often tag and prompting questions (Table 18i) acting as scaffolds and links to further the students' thinking about the Maths problem in consideration, interwoven with informing and feedback utterances. Unlike in the Time 1 lesson, questioning utterances in the Time 2 lesson were not part of typical IRE exchanges with student display responses to teacher questions, but rather a means to stimulate the students' cognition and expressiveness. The question prompts resulted in many spontaneous contributions by the students, picked up by the teacher as a link to challenging and deepening their Mathematical thinking. In comparison, the question utterance at Time 1 followed typical IRE patterns of exchanges, with minimal expressive opportunities on offer.

Examples from each lesson illustrate these differences between Time and Time 2, the first an IRE exchange between the teacher and the two students in the first microteaching group, such IRE exchanges not occurring with the more advanced reading students in the second micro-teaching group; the second an excerpt example of the large number of enquiring utterances related to directed and guiding students behaviour and activities of the students elsewhere in the classroom at Time 1; the third an example from the Time 2 lesson illustrating the nature of questioning to prompt further thinking and expression by the students, interwoven by informing and feedback utterances.

Time 1 example

20:55 *And where's Mathew?*
20:56 *And Emma has a truck and Mathew has a ...?*
21:00 *Car..and they are going to play in..like a sandpit, aren't they?*
21:06 *And then Mathew looked at the rug ... Do any of you have a rug that you have at home that you sometimes take out for picnics and things?*
21:16 *I don't. I think you do. I think you brought yours to the picnic at..down at the river. And there's their rug. Can you say 'rug'?*

Time 1 example

15:36 *Oh my gosh, Sumi, that is amazing. What is it?*
15:41 *It's a forearm. Is that some kind of monster?*
15:44 *(children answer teacher - trying to explain)*
15:47 *Who is It?*
15:49 *Is that off a TV show?*
15:52 *What show is that off?*

Time 2 example

11:17 *Is that the same?*
11:20 *It's not the same, is it? So I can't...She needs a bigger one, does she? Okay. So what if I just did something like this?*
11:31 *It's not the same? It's not the same amount. It's not the same amount? Okay. So what if I ...?*
11:37 *interruption*
11:47 *So hmmmm so that was a bit of a waste of that apple, wasn't it? Jae?*
11:54 *So I .. I do have another apple so I could do another practice, couldn't I?*
11:57 *child shares how she likes apples*
12:01 *You like it whole don't you but I need.... I don't have enough so we have to have half. Millie's math house please.*
12:08 *I know but you can't because the robbers have taken them. So what...? How can we cut it so that Jessica and Mrs G gets the same amount?*

The Time 2 lesson was markedly more dialogic and engaging of students cognitively and expressively than the Time 1 lesson, with teacher-student discourse and interactional patterns of exchange opening up the students' mathematical thinking and opportunities to express. The teacher's utterance processes stimulated frequent and novel student responses, and there was rich informational narrative text and expression on offer, noticed and engaged with by the students. While the teacher's utterances processes in the Time 1 lesson were not vastly different in terms of type and number, they were significantly different in nature to Time 2 utterances, reflecting the Time 1 lesson's orientation towards didactic teaching and typical IRE patterns of exchange. As a result the students' quality and quantity of expression was highly constrained.

In line with the utterance processes number data, duration of questioning, prompting, informing, feedback and confirming processes were generally more extended at Time 2 than Time 1 (Table 18h), reflecting the lively exchange of ideas deliberately stimulated by the teacher in the Time 2 lesson. In comparison, the Time 1 lesson lacked dynamism and did not engage or stimulate the students' minds and expression to the anywhere near the same extent. While there were no significant differences in the number of question types at Time 1 and Time 2 (Table 18i), the known-closed and new closed questions at Time 2 were interwoven with prompting, feedback and informing utterances, serving to open up responses. In the Time 1 lesson, these same question types tended to be part of typical IRE exchanges between teacher and students, the students' utterances display or information giving in response to teacher enquiry. For example:

Time 1 example
14:27 You're on stencils, okay?
14:30 Put it in your pocket for now (in response to child). Pardon?
14:34 Your paper's right there. Okay?
14:40 Where ever you put it. Where did you put it?
14:45 It'll either be in your...in there...in the...it's not in there?
14:51 It's not in your schoolbag? It's not in the book box?

Direction of utterances

In the Time 1 lesson, a large number of utterances were directed to individual students both in the micro-teaching situations and when the teacher was interacting with students elsewhere in the classroom (Table 18j). In the Time 2 lesson, with the major part of the lesson dedicated to working with almost all the students in a small group on the mat considering the mathematical problem presented by the teacher, the teacher directed her utterances to all students as part of a collaborative pattern of expressive exchange. While individual students were responded to by the teacher throughout, these utterances were simply part of the to and fro nature of dialogic exchanges occurring in the lesson, involving and engaging the students most of the time and students frequently making spontaneous contributions to the discourse. With deliberate attention given by the teacher to create optimal conditions for high levels of engagement cognitively and expressively in the Time 2 lesson, she was highly focused with almost all her utterances were directly related to the topic in hand. In the

Time 1 lesson, her attention was frequently diverted from the students in the micro-teaching groups towards students elsewhere, and with more frequent distraction from the topic and task in hand at her teaching table, and her unavailability to many students throughout the lesson, there was a greater tendency for utterances to be less related than was the case at Time 2. For example in this Time 1 lesson, the teacher's consecutive utterances swung from one topic to another.

Time 1 example

15:13 You're on listening post. Off you go.
15:17 Harl, you're here. Sit down please.
15:21 Stencils, you are on the computer. Off you go...Computer.
15:36 Oh my gosh, Sumi, that is amazing. What is it?
15:41 It's a forearm. Is that some kind of monster?
15:44 (children answer teacher - trying to explain)
15:47 Who is It?
15:49 Is that off a TV show?
15:52 What show is that off?
15:56 Oh, it's a cartoon. Okay, I'm going to save that for you.
16:05 Um. You're on computer Isaac. I'll be right with you. Okay?
16:14 I'll be right there, okay.
16:21 Okay Sumi. We'll just save it and title. We'll come back to it.
16:27 Right, you up to the table.

Summary

The structure and orientation of the Time 1 and Time 2 lessons were vastly different, reflected in the discourse and interactional patterns of exchange in each of the lessons. In the Time 1 lesson, with two consecutive micro-teaching groups at the teaching table and the other students occupied on task elsewhere in the classroom, the teacher's attention was frequently diverted from the topic in hand. As a result, the teacher's expressive attention was also compromised, whereby opportunities to exchange rich and meaningful utterances with the reading students were minimal. In large part, the lesson typified IRE exchange patterns, with an orientation towards formulaic and didactic staging of lesson spent with the micro-teaching students. Quality and quantity of expression by students was largely unavailable, and acquisition and uptake potential was not on offer to any extent.

In contrast, in the Time 2 lesson, while the teacher did not explicitly focus on building in expressive redundancy and practice opportunities so that the rich, informational narrative text on offer had enhanced acquisition and uptake potential, the students noticed and engaged with this text intensely because of the dynamic nature of her delivery. Frequent dialogic exchanges between teacher and students occurred throughout this stage of the lesson, the students were stimulated and interested cognitively and expressively. Spontaneous contributions by students were forthcoming throughout, picked up and included into the ensuing discourse. As the lesson progressed to a closer focus on mathematical problem solving, the teacher further stimulated the students expressively and cognitively through continual dialogic interaction in a collaborative exchange of ideas. Students were scaffolded to expand their mathematical thinking in and through the exchange of ideas, triggered by question, feedback and informational utterances by the teacher.

Overall, the Time 2 lesson was dynamic, dialogic, cohesive and engaging, and as a result the students frequently expressed and were exposed to rich text along the way, offering enhanced acquisition and uptake potential. The Time 1 lesson offered little in this regard and the students' quality and quantity of expression remained highly constrained.

Comparing School A teacher Time 1 Lesson 2 and Time 2 Lesson 1: Focus case study student - Alo

The lesson stages for Alo are provided in Appendix 7.

Utterance analysis

The School A teacher expressed 257 utterances at Time 1 and 307 utterances at Time 2 (Table 19a), the fewer number of utterances at Time 1 influenced by the lesson staging comprising of approximately 20 minutes of mat time with all students together working on dinosaur identification and labelling, and 10 minutes with students colouring in a picture and the teacher interacting with students as she moved around the class.

Table 19.
School A teacher – Comparison between Time 1 Lesson 2 and Time 2 Lesson 1

Table 19a.
Number of words per utterance

	T 1 Less 2	T 2 Less 1
1-2	21	44
3-5	51	108
6-8	49	47
9-12	43	36
13-15	28	19
16-20	28	22
21 + longer	37	31
<Any Modifier>	257	307

Table 19b.
Duration of words per utterance

	T 1 Less 2	T 2 Less 1
1-2	00:24.0	00:51.0
3-5	01:30.2	03:03.2
6-8	02:11.1	01:49.4
9-12	02:30.7	02:33.7
13-15	02:16.0	02:05.4
16-20	02:56.3	02:23.9
21 + longer	06:31.9	05:47.6
<Any Modifier>	18:20.1	18:34.3

Table 19c.
Clause type per utterance

	T 1 Less 2	T 2 Less 1
below clause	29	68
minimal clause	46	74
expanded clause	23	42
clause complex	40	35
multi clauses (complex clauses)	66	61
multi clauses	53	27
<Any Modifier>	257	307

Table 19d.
Duration of clause type per utterance

	T 1 Less 2	T 2 Less 1
below clause	00:42.3	01:50.6
minimal clause	01:27.6	02:07.2
expanded clause	01:04.3	01:42.8
clause complex	02:25.9	02:20.7
multi clauses (complex clauses)	08:50.4	08:02.0
multi clauses	03:49.7	02:31.1
<Any Modifier>	18:20.1	18:34.3

Table 19e.
Clauses per utterance

	T 1 Less 1	T 2 Less 3
0 cl	29	36
1 cl	69	72
2 cl	61	45
3cl	28	29
4cl	19	11
5cl	6	11
6cl	2	9
7 cl	3	7
8 cl	2	6
9 cl	-	3
10 cl	-	-
11cl	-	1
12 cl	-	1
13 cl	-	-
14 cl	-	-
15 cl	-	-
16 cl	-	-
17 cl	-	-
18 cl	-	-
19 cl	-	-
20 cl+	-	1
<Any Modifier>	219	232

Table 19f.
Duration of clauses per utterance

	T 1 Less 2	T 2 Less 1
0 cl	00:40.7	01:50.0
1 cl	02:30.6	03:53.6
2 cl	04:24.7	03:05.7
3cl	02:44.7	02:27.7
4cl	02:10.2	01:53.5
5cl	01:34.8	01:51.1
6cl	01:17.6	01:17.8
7 cl	00:40.5	00:25.7
8 cl	00:34.2	00:43.6
9 cl	00:26.4	00:15.5
10 cl	00:42.2	-
11cl	00:33.4	00:17.7
12 cl	-	-
13 cl	-	00:31.2
14 cl	-	-
15 cl	-	-
16 cl	-	-
17 cl	-	-
18 cl	-	-
19 cl	-	-
20 cl+	-	-
<Any Modifier>	18:20.1	18:33.1

Table 19g.
Processes per utterance

	T 1 Less 2	T 2 Less 1
question	123	72
explain	49	24
prompt	78	247
feedback	36	28
instruct	3	-
comment	28	4
direct	91	45
praise	14	4
criticise	2	-
thank	-	-
describe	20	121
inform	89	223
confirm	55	58
musing	-	-
<Any Modifier>	257	307

Table 19h.
Duration of processes per utterance

	T 1 Less 2	T 2 Less 1
question	10:02.8	06:35.6
explain	05:40.4	03:43.8
prompt	04:46.3	13:42.1
feedback	02:04.1	02:17.6
instruct	00:20.8	-
comment	01:55.4	00:18.6
direct	08:20.0	03:27.7
praise	01:17.3	00:22.5
criticise	00:11.6	-
thank	-	-
describe	01:49.3	10:13.8
inform	08:32.6	14:39.5
confirm	03:24.9	04:34.3
musing	-	-
<Any Modifier>	18:20.1	18:34.3

Table 19i.
Question type per utterance

	T 1 Less 2	T 2 Less 1
pseudo question	21	27
zero	127	230
nw-kn-op-cl	4	5
known -closed	62	29
new-closed	13	7
open - known	15	-
open-new	15	9
<Any Modifier>	257	307

Table 19j.
Direction of utterance

	T 1 Less 2	T 2 Less 1
self	1	-
partner	-	-
teacher	1	-
other peers	-	-
whole class	79	297
group	11	-
child	120	8
combination	49	5
<Any Modifier>	257	307

The Time 2 lesson was dedicated to the collaborative co-construction of a narrative based on the pictures of a story book, the teacher expressing frequently as she led the shaping of the narrative and picked up on students' spontaneous contributions.

The high number of short utterances in the Time 2 lesson (Table 19a) was due to the scaffolding manner of the teacher in co-constructing the narrative with the students. Across the range of other word numbers per utterance, there were more 1-2 word utterances and fewer longer utterances of

between 9 to 21+ words per utterance in the Time 2 lesson than in the Time 1 lesson. The teacher's focus on language acquisition at Time 2 was explicit and deliberate, her approach being to break up the evolving narrative text into small text chunks of 3-5 words, with the perceived advantage of enhancing acquisition and uptake potential by placing less cognitive and linguistic demand on the students than with longer text chunks. There were high levels of in-built redundancy, with the teacher most often leading the way to expressively recycle the evolving narrative. For students such as Alo, the case study student in focus in this lesson, it became evident that shorter text chunks made the expression of the evolving text more manageable. With longer text chunks he struggled with the lexical and grammatical demand of expressing these. The disadvantage of breaking the text into small text chunks, however, was some loss of semantic cohesion, although this was counteracted by the students' high level of interest in the storyline, and the deliberate triggering and inclusion of their ideas as co-constructing narrative partners.

In contrast, the structure and orientation of the Time 1 lesson followed typical IRE interactional and discourse patterns, with the teacher's voice dominant and relative to student utterances, more extensive in word number and duration (Tables 19a & 19b). Students were positioned as question responders, the teacher posing a large number of questions, seeking known or preferred answers from the students. Examples illustrate the differences in orientation affecting length of the teacher's utterances, the first during the Time 1 lesson mat time, the second as the teacher moved around the class as the students coloured in their picture, and the third from the Time 2 lesson as the teacher and students collaboratively co-constructed and recycled the evolving narrative.

Time 1 example

12:34 *He likes to eat plants, doesn't he? Good*
12:38 *Just wait Kait. You can pick Ankylosaurus in a minute. Let's just find one more fact out, okay? Just sit down, just for one more minute and we'll find out one more fact about Ankylosaurus and then you can find him for me. I think he's going to be quite little though.*
12:53 *Okay sit down sweetheart. One more thing that we know about Ankylosaurus.*
12:59 *Who hasn't answered any questions? Sumi.*
13:03 *What do you know....? No just wait there. Tell me what you know about Anklyosaurus. Quickly.*
13:14 *He does have horns....*
13:16 *Can you tell me something about his back as well?*

Time 1 example

24:11 *It's kind of like him. It's just a little bit different..just a little bit different in shape. But we're look at him next week. Okay. So we'll do our T-rex today.*
23:08 *Right Alo do you have some where to sit?*
23:16 *That is green. Can you say green? Green. That's green. The colour...*
23:21 *That's green sweetheart. You can use the colour green on there. Enja, are you ok? You're going to go there.*
23:29 *Harl, are you here? What colour are you doing your fire?*
23:34 *Very good.*
23:37 *Yes it can be red and orange and yellow...all those colours. All those colours mixed.*
23:43 *I've got a um a dinosaur like that coming out of an egg. I'll have to show you it.*
23:50 *That looks like Tyrannosaurus Rex to me. Oh no, It's called a Trodon.*

Time 2 example

23:08 *Is it summer time? We wear our sun hats in the summertime so it must be summer time....and they wear their hats to protect their faces from the..*
23:21 *(students finish sentence)*
23:25 *Okay. (students chatting about what to call the baby)*
23:28 *No, I'm going to call the baby Zoe. It's going to be Zoe. Ara and Zoe..*

23:39 were in the garden..
23:42 ..in...s...summertime.
23:48 I'm going to say it again. Ara and..Ara and Zoe
23:54 ..were in the garden...
23:56 in summertime...
23:58 (Ant recalls re protecting their faces -picked up by teacher)
24:04 They wore their hats
24:05 (Students repeat the teacher's model)
24:07 ...to protect their face..
24:11 from the...

The duration of utterances overall and across the range of words per utterance by the teacher varied little between Time 1 and Time lessons (Table 19b). While there were markedly more 3-5 word utterances in the Time 2 lesson, the teacher did not consume large amounts of expressive time. In leading the text and the way, she activated the students as expressive partners so they consistently and frequently expressed alongside and with the teacher to construct the narrative. In both lessons the teacher led the way and topic strongly, the key difference being in how the interactional and discourse patterns were structured, at Time 1 resulting in few expressive opportunities of quality and quantity by the students, at Time 2, extensive quality and quantity of expression under optimising conditions for acquisition and uptake.

Clauses per utterance

Cumulatively, the teacher's consecutive utterances in the Time 2 lesson built up a grammatically complex narrative text, however,s because the teacher broke the text up into short word group utterances, the clause type data (Table 19c) indicated a high level of grammatically simple utterances. The sequence of utterances below is first represented as a series of consecutive utterances, and secondly cumulatively in which single utterances are combined to reveal the grammatically complex evolving text. The teacher pushed the students to express the grammatically complex text iteratively across the lesson, each time extending and pushing their cognitive and linguistic resources to express a text of grammatical and lexical quality and quantity.

Time 2 example

14:37 In the special garden..
14:41 a little...
14:53 ...a little plant is growing bigger. Shall we say that? A little plant is growing bigger. In fact that plant is looking like a little tr.. tree...
15:07 ...with some green leaves. Let's try that again. Okay, We'll go from, in the special garden. Rana are you listening? Move up sweetheart.
15:20 In the special garden..
15:24 made of bricks...
15:27 ..a little plant..
15:29 ..is growing bigger.
15:32 In fact...
15:35 that little plant..
15:38 is a
15:44 It can be an apple tree. We're going to say a tree. Okay. ....is a tree with green
15:53 ..with green leaves.

Time 2 example

In the special garden..a little.....a little plant is growing bigger. Shall we say that? A little plant is growing bigger. In fact that plant is looking like a little tr.. tree.....with some green leaves. Let's try that again. Okay, We'll go from, in the special garden. Rana are you listening? Move up sweetheart.

In the special garden.. made of bricks... ..a little plant..is growing bigger. In fact...that little plant..is a.....(It can be an apple tree. We're going to say a tree. Okay.) ....is a tree with green..with green leaves.

Longer utterances at Time 2 were primarily elaborations and explanations by the teacher scene setting or in response to ideas contributed by the students. For example:

Time 2 example

01:55 *So look mum is in the garden. Hhhh. There are two cats so our cat Dana has a friend. He's got a friend. So the cats are playing in the garden. Dana and her friend are playing in the garden. Let's have a look and see what mum's doing.*

02:15 *Is she digging or is she collecting leaves and woods? Have a little look.*

02:20 *I think she's collecting leaves and....she has right next to her something we call a hedge clipper. Can you say hedge clipper?*

02:29 *That's right and we...like this and we cut down all of the branches and all of the..all of the scrubby bits of the plant that we don't want....we cut them off and we pile them up and put them in the compost and I think that's what Mum's doing. So she's working in the garden with her hedge clippers.*

Time 2 example

16:05 *It is. It's looking more like a tree, isn't it? It doesn't have any leaves so it must be winter time because remember, trees, lots of tree lose their..John L*

16:18 *Listening John L. Lots of trees lose their leaves when it's cold ..when it's wintertime so this might tell us, especially with the rain, that it is wintertime.*

In the time 1 lesson, a high number of utterances were minimal clauses and clause complexes or multi-clause utterances. Unlike the Time 2 lesson, the majority of these utterances were not available as potential text for acquisition and uptake due to the dominance of IRE patterns of exchanges and an orientation towards eliciting display responses by the students. The following example illustrates the interwoven nature of grammatically simple and grammatically complex utterances expressed by the teacher throughout the first 20 minutes of the Time 1 lesson.

Time 1 example

04:00 *But what.?.The Triceratops. Can you say Triceratops?*

04:05 *So he's looking at the Triceratops.*

04:10 *Is he running fast? He's running fast so he can catch the Triceratops and have him for his dinner.*

04:18 *He's going to eat it.*

04:20 *He is..Look. Look how much bigger he is? He's a very big dinosaur, isn't he?*

04:30 *He's asleep. His tummy's full. You're right John L. His tummy is full.*

04:35 *Why's he fat?*

04:37 *Kama, why is he fat?*

04:41 *He ate the Triceeratops and so he's fat. He's having a little sleep.*

04:46 *Okay. Right.*

04:50 *So now, Mrs G has put up here four of the dinosaurs that we've looked at over the past week and a half. Do you see any names here?*

05:01 *There's no names is there?. So I've got some names.*

05:09 *I've got four names over here.*

05:14 *Hhh, I don't know. We're going to have to figure them out.*

05:22 *If you're sitting nicely I'm going to ask you to come and help me put the name next to the dinosaur.*

The duration of clause type utterances varied minimally between Time 1 and Time 2 (Table 19d). At Time 1, the multi-clause utterances were primarily utterances with between 2 to 4 clauses per utterance (Table 19e). The teacher tended to express a number of grammatically simple 'sentences' within the one utterance, not extended in duration (Table 19f), as in these two examples:

Time 1 example

11:18 *Tavi you need to come up and find Triceratops and put him over here. We'll put him here just for now. Find Triceratops. Really really quickly for me.*

11:37 *Hhhhh, good boy. Is that Triceratops?*

11:40 *Is he right? Do you see his three horns and his big fan around his head? Good boy.*

11:51 *I'd be very scared too. Why would you be scared of his horns?*

11:57 *They can stab. What did Harl tell us about his horns? They look like..? They do look like swords. Okay. Good boy. Thank you. Right.*
12:08 *Ankylosaurus. Tell me something...Who's got their hand up? Kaitl, about Ankylosaurus....*

Time 1 example
13:48 *Okay, let's see if we can find Ankylosaurus, Kait...and I have a feeling ...Oh I can see it. He's just a little dinosaur. I don't have a big one, just a little one. Sitting up beautifully. Just a little, little one.*
14:10 *He's just little. Stand up and show. He's just a little one but do you see the big club on the back of his tail? Say that...big club.*
14:21 *We could put it up there. Will he fit up there? Just on the top there.*
14:26 *He may not. He may just sit up there nicely.*
14:32 *No he's...Oh, look he looks like he's going to jump on you Harlem.*
14:37 *Lucky he doesn't eat little boys... He only eats plants, eh? He'd eat you for his dinner.*

In the Time 2 lesson, there were a significant number of utterances with between 5 and 12 clauses per utterance (Table 19e), the majority of which were elaborating utterances in response to contributions made by students or as the teacher expressed new parts of the narrative text. These more complex utterances in terms of clause structure and number consumed more time at Time 2 (Table 19f), whereby fewer multi-clause utterances were of almost equal duration to the higher number of grammatically simple multi-clause utterances at Time 1. For example:

Time 1 example
16:05 *It is. It's looking more like a tree, isn't it? It doesn't have any leaves so it must be winter time because remember, trees, lots of tree lose their..John L.*
16:18 *Listening John L. Lots of trees lose their leaves when it's cold ..when it's wintertime so this might tell us, especially with the rain, that it is wintertime.*

Utterance processes

There are significant differences between the utterance text processes at Time 1 and Time 2, notably the high number of questioning and informing utterances at Time 1 (see Table 11), a feature of typical IRE patterns of exchanges. Throughout the first 20 minutes of the lesson known-closed questions abounded (Table 19g), the students positioned as minimally expressive responders, as in this example:

Time 1 example
08:21 *Good girl.*
08:26 *Is she right?*
08:28 *Sara, how did you know that that was Stegosaurus?*
08:33 *It had the 's'. So what's that like? Your..?*
08:36 *It's like your name. Good girl. Very good. Right, last person. Harlem.... Hhhh, wait, wait, wait, wait. What is this?*
08:48 *What's the big name?*
08:54 *Let's say it together. Tyrannosaurus*
08:59 *Tyrannosaurus Rex. Good boy. Can you come and you the lucky last....Can you help me put this down here?*
09:08 *Put the name down on next to the dinosaur.*
09:12 *He's right, isn't he, because it was the last one?*
09:16 *Okay, so what's this one?*

Also frequently occurring at Time 1 were directing utterances as the teacher controlled the way and the topic interactionally and expressively, as in these examples during the first 20 minutes of the lesson:

Time 1 example
11:18 *Tavita you need to come up and find Triceratops and put him over here. We'll put him here just for now. Find*

Time 1 example
12:38 *Just wait Kait. You can pick Ankylosaurus in a minute. Let's just find one more fact out, okay? Just sit down, just for one more minute and we'll find out one more fact about Ankylosaurus and then you can find him for me. I think he's going to be quite little though.*

12:53 Okay sit down sweetheart. One more thing that we know about Ankylosaurus.
12:59 Who hasn't answered any questions? Sumi.
13:03 What do you know....? No just wait there. Tell me what you know about Anklyosaurus. Quickly.

In contrast, in the Time 2 lesson, while questioning utterances were also relatively high, these served to trigger or check out students contributions to the collaboratively co-constructed evolving narrative. At other times, questioning utterances were simply question tags or acted as prompts to stimulate and support text recall. Questions were unobtrusive, a naturally occurring discourse companion to the describing, informing and prompting utterances evident throughout entire lesson. The teacher's deliberate and explicit focus was on opening up opportunities for students to express quality and quantity of text and contribute meaningfully towards the evolving narrative text. Question-display IRE exchange patterns were non-existent in this lesson, teacher and students genuine expressive partners dialogically and discursively. Much of the narrative text structure and content was lead by the teacher, informing and describing, as well as prompting the students to express with grammatical and lexical quality and quantity beyond their independent capacities, thus accounting for the high number prompting, describing and informing utterance text processes in the Time 2 data. The duration of utterance text processes aligned with the number data (Table 19h), markedly more time consumed at Time 1 by question and informing utterance text processes, and conversely at Time 2, a significant reduction of time for these against an increase in duration of prompting, describing and informing utterances text processes.

At Time 1, 51% of teacher utterances were or included questions, 90 utterances of which were either closed or known, typically featuring in IRE teacher-student, question-display exchange patterns (Table 19i). In contrast, discounting pseudo-questions, only 16% of teacher utterances at Time 2 were or included questions, 9 utterances of which were open-new questions, typical found in 'authentic' dialogue. The interactional and discourse pattern shift from IRE dominant patterns at Time 1 to a lesson orientated towards collaborative, co-constructive and dialogic at Time 2 had a marked effect on the quality and quantity of expression by teacher and students. From minimal acquisition and uptake potential on offer in the Time 1 lesson, throughout the Time 2 lesson optimising conditions were such that students not only were contributory expressive partners with the teacher, but were offered frequent and supportive opportunities to tryout text of grammatical and lexical quality. The students were engaged in a meaningful exchange of ideas, their acquisition and uptake potential enhanced by the dynamic and involving structure of the lesson and topic.

Direction and relatedness of utterances

The direction of utterances data (Table 19j) reflected the differences in organisational structure between the Time 1 and Time 2 lessons. The Time 1 lesson was divided into a whole group, mat time component for 20 minutes of the lesson, and 10 minutes when students worked at tables while the teacher moved among them. In both situations, the teacher frequently addressed individual students to elicit a response, offer a comment or respond to a student in some way. In the whole group situation,

when individual students were singled out to respond, an evaluative culture was constructed. For example:

Time 1 example
10:24 How many horns does he have Jaylin?
10:32 Jayli.Jayl..He has three horns.
10:40 Ara what does Triceratops like to eat?
10:47 What does triceratops like to eat?
10:53 Meat I think. Tavi is she right? What does Triceratops like to eat?
11:02 Plants. He likes to eat plants.
11:09 Right. Who's sitting up beautifully?

In contrast, when the discourse was collaborative and 'for all' to engage in and respond to, cognitively and linguistically, as in the Time 2 lesson, students were participatory and noticing, and acquisition and uptake potential was enhanced. At ease with spontaneous contributions by students, the teacher orientated towards triggering and including the minds and voices of the students as members of an expressive, learning community. Students and teacher were 'hooked into' the topic and the way, with few teacher utterances behavioural, and then only fleeting, utterances mainly focused on cognitive and linguistic expansion. In the Time 1 lesson, there were more distractions, more teacher utterances not directly related to the topic in hand, and a sense of control rather than dynamic engagement with each other as members an expressive, learning community.

Summary

The Time 1 lesson was orientated towards tight control of the topic and the way by the teacher, to IRE interactional and discourse patterns of exchanges, and to display and confirm responses. As a result, the students were positioned as minimally engaged expressive participants, cognitively and linguistically. The 30 minute lesson did not push the students' quality and quantity of expression, there was little cognitive challenge on offer, and the teacher's utterances were in most part grammatically and lexically simple. Her focus was not on enhancing expressive acquisition and uptake potential, and optimising conditions were highly constrained. In contrast, the Time 2 lesson was rich in discourse exchanges, the teacher explicitly structuring the lesson so students were engaged in meaningful text expression and dialogue, and were pushed grammatically and lexically. The teacher led the way and topic in a collaborative partnership with the students, IRE interactional and discourse patterns replaced by expression and learning for all by all. As a result, enhanced acquisition and uptake potential was available to all students throughout the lesson. They were focused, expressive and interested in the narrative text that was as much their own as it was the teacher's.

Lesson analysis of both teacher and case study student expression and interaction in Time 1 lesson 2 and Time 2 lesson 1 indicates a convergence, that is, a pedagogical shift by the teacher from Time 1 to Time 2 directly influenced the quality and quantity of Alo's expression, and that of all students.

Comparing School A teacher Time 1 Lesson 3 and Time 2 Lesson 2: Focus case study student: Rana

The lesson stages for Rana are provided in Appendix 8.

Utterance analysis

The School A teacher expressed 219 utterances at Time 1 and 213 utterances at Time 2 (Table 20a).

Table 20.
School A teacher – Comparison between Time 1 Lesson 3 and Time 2 Lesson 2

Table 20a.
Number of words per utterance

	T 1 Less 3	T 2 Less 2
1-2	21	32
3-5	31	38
6-8	55	28
9-12	27	31
13-15	20	20
16-20	22	20
21 + longer	43	44
<Any Modifier>	219	213

Table 20b.
Duration of words per utterance

	T 1 Less 3	T 2 Less 2
1-2	00:18.2	00:31.8
3-5	00:44.7	01:06.4
6-8	01:49.1	00:53.8
9-12	01:54.3	01:44.1
13-15	01:28.7	01:47.3
16-20	01:59.2	02:00.2
21 + longer	08:45.6	11:41.8
<Any Modifier>	16:59.8	19:45.5

Table 20c.
Clause type per utterance

	T 1 Less 3	T 2 Less 2
below clause	23	30
minimal clause	50	51
expanded clause	20	11
clause complex	23	24
multi clauses (complex clauses)	60	54
multi clauses	43	43
<Any Modifier>	219	213

Table 20d.
Duration of clause type per utterance

	T 1 Less 3	T 2 Less 2
below clause	00:40.2	00:39.2
minimal clause	01:22.4	01:26.2
expanded clause	00:49.6	00:22.6
clause complex	01:14.0	01:53.2
multi clauses (complex clauses)	09:53.2	11:23.5
multi clauses	03:00.5	04:01.0
<Any Modifier>	16:59.8	19:45.5

Table 20e.
Clauses per utterance

	T 1 Less 3	T 2 Less 2
0 cl	23	30
1 cl	70	61
2 cl	43	34
3cl	23	25
4cl	19	21
5cl	9	11
6cl	13	5
7 cl	3	9
8 cl	3	4
9 cl	5	2
10 cl	1	3
11cl	2	2
12 cl	1	1
13 cl	1	2
14 cl	1	1
15 cl	-	-
16 cl	-	-
17 cl	-	-
18 cl	1	-
19 cl	-	-
20 cl+	-	2
<Any Modifier>	218	213

Table 20f.
Duration of clauses per utterance

	T 1 Less 3	T 2 Less 2
0 cl	00:42.1	00:39.2
1 cl	02:09.6	01:44.7
2 cl	02:20.7	01:50.2
3cl	01:46.8	02:05.1
4cl	01:52.0	02:06.3
5cl	00:56.7	01:35.6
6cl	02:06.0	01:33.3
7 cl	00:35.8	02:26.1
8 cl	00:33.2	00:56.8
9 cl	01:19.8	00:18.2
10 cl	00:13.1	00:36.4
11cl	00:38.2	00:31.8
12 cl	00:19.7	00:20.0
13 cl	00:24.0	00:57.6
14 cl	00:33.2	00:17.8
15 cl	-	-
16 cl	-	-
17 cl	-	-
18 cl	00:26.4	-
19 cl	-	-
20 cl+	-	01:46.3
<Any Modifier>	16:57.3	19:45.5

Table 20g.
Processes per utterance

	T 1 Less 3	T 2 Less 2
question	113	81
explain	49	45
prompt	102	132
feedback	37	26
instruct	23	2
comment	11	7
direct	108	110
praise	16	16
criticise	2	-
thank	-	-
describe	1	1
inform	68	83
confirm	24	31
musing	-	-
<Any Modifier>	219	213

Table 20h.
Duration of processes per utterance

	T 1 Less 3	T 2 Less 2
question	09:06.8	09:24.2
explain	06:53.2	08:40.6
prompt	05:30.7	10:49.7
feedback	03:37.9	02:09.1
instruct	03:13.2	01:08.2
comment	00:49.1	00:50.7
direct	11:31.0	14:09.5
praise	01:37.4	01:11.5
criticise	00:06.8	-
thank	-	-
describe	00:19.7	00:11.0
inform	09:00.9	12:40.1
confirm	01:35.9	03:16.6
musing	-	-
<Any Modifier>	16:59.8	19:45.5

Table 20i.
Question type per utterance

	T 1 Less 3	T 2 Less 2
pseudo question	22	26
zero	104	127
nw-kn-op-cl	6	5
known -closed	51	29
new-closed	11	7
open - known	12	16
open-new	13	3
<Any Modifier>	219	213

Table 20j.
Direction of utterance

	T 1 Less 3	T 2 Less 2
self	1	-
partner	3	-
teacher	-	-
other peers	4	-
whole class	31	92
group	109	41
child	62	66
combination	15	16
<Any Modifier>	219	213

The teacher's utterances in the Time 1 lesson had little direct impact on Rana, the case study in parallel focus in this lesson, as for the majority of the lesson time she worked independently of the teacher. Because Rana had little to no access to the teacher in the Time 1 lesson, optimal conditions to push Rana's quality and quantity of expression, and offer her enhanced acquisition and uptake potential, were in most part unavailable. In contrast, at Time 2, Rana had direct access to the teacher and was directly affected by the available discourse and interactional patterns, and the teacher's utterances, and so there was alignment between teacher and case study student utterances.

In large part, the number of words per utterance at Time 1 and at Time 2 was similar across the range of utterance word lengths (Table 20a). The greatest difference was with 6-8 word utterances, almost double the number at Time 1 than at Time 2. A larger number of utterances of this length were expressed by the teacher in the Time 1 lesson as she prompted her micro-teaching students to solve the Maths problem of sharing, interspersed with comments and responses to students in other parts of the classroom. Flow and connection in discourse exchanges between the teacher and students were often compromised because of the interwoven nature of the teacher's direction of attention and discourse. For example:

Time 1 example

20:39 ***(To student not part of the micro-teaching group)***
Good girl. T-rex or did you tell her? Haha. It's a T-rex, isn't it? Raewyn, can you go over and have a look at your board, see where your picture is and see what games she can get out. Okay? Good girl.

20:56 *(To micro-teaching students)*
Right how many do you have?

20:59 *Ara how many do you have?*

21:00 ***(To student not part of the micro-teaching group)***
Yes, yes I know. That's an Anklyosaurus.

21:08 *Rae. Come here sweetheart. You need to get your game out, okay. Look where your name is. You can get the beads out or the blocks. Okay. Go get the beads or the blocks out. Have a look at your pictures.*

21:24 *(To micro-teaching students)*
Ah.you're doing...No, you're doing this.

21:27 *Let's do our two this way. We're going to go this way. Okay... and how many...?*

21:33 *Okay.*

At Time 2, the teacher's attention was undivided in the first half of the lesson as she worked collaboratively with the whole class, and in the second half sustained when involved with each small group of students, offering quality time and support before moving on to the next. As a result, the teacher's utterances had more flow, connectedness and cohesion, as in this example when the teacher was attending to Rana and her peers working in a small group:

Time 2 example

25:20 *(To Rana and students in the small group)*
Yeah, that one's..Read that one again.

25:22 *Yep, that can go in there as well though. That's just two separate ..two different ones. Okay, read this one. Place....*

25:32 *We don't have that one. That must be somewhere else.*

25:44 *Let me have a look and see. What have you got?*

25:47 *Oh, sorry.*

25:51 *Oh, where's your 'Peel apples'...?*

25:57 *What's this?*

26:03 *Okay, let's read it and see if you're right. Come round this way Jaelyn so you can see. Come round this way.*

26:12 *I'll just read that with you.*

At Time 1, the longer utterances, 16-21+ words per utterance in length, were primarily either instructional and organisational utterances, or prompting utterances (Table 20g), as the teacher sought to guide her two micro-teaching students towards a mathematical solution. For example:

Time 1 example

03:17 *Right, that's really good. You won't have problems with our dinosaur. If you can't count from 1 to 20 you need to look. Isa you need to watch. John L. Kait.*

03:30 *I'm going to show you what you and I didn't make a big one. I should've made a big one. So you need to watch really carefully. Alo are you watching? We're going to start at number one and we're going to go one and what's come after one?*

Time 1 example

05:30 *In a minute. Just wait a second. And after that I'm going to have Mali, Alo and Rae. Okay. The people on Millie's math house today, you can go right away to Millie's math house. Is going to...No. Wait, wait, wait, wait. Is John L, Isa, Pari and*

06:03 *Kait. You are on Millie's math house right now. Alo, Ara..Ara, can you sit down just a minute please. Just wait. Just a minute. Tavi, can you go and fix up Millie's math house for....*

Time 1 example

25:35 *Now here's our lollies. Now I've glued these in. Can you see that Ara? We've glued those..These have been glued in here. So here's our lollies and there's 26 lollies and you've got to cut them up and give one to her and one to her and one to her and one to her..and keep going till they're all shared evenly.*

26:03 *No, it won't take long and once you've shared them evenly, then you have to say ...you've got to write in here, 26 lollies shared between the girls equals, and you've got to tell me how many lollies the girls get each.*

At Time 2, the longer utterances were descriptively similar to Time 1 utterances, but differed in that the teacher offered expressive support, in-built redundancy and frequent opportunities for students to supportively express the target text and offer spontaneous contributions along the way. For example:

Time 2 example

09:57 *We cooked them, didn't we? We cooked the apples, didn't we? And we're going to say....Place the pot onto an element. Remember it was the element on the oven that we said we were cooking them on. Okay Tavita, come up here sweetheart.*

10:21 *Just one more but we need to learn this one 'cause this is a tricky little one because we're using that word element that we heated the apples on.*

10:29 *We're just using that one..That's here. Um, let's say this together. Place the pot onto an element. And Tavita was right. We put the lid on first but Mrs G hasn't made a label for that so we might put one up here saying 'We put the lid on' and you can remember it and next time we get this out I will get a special label for 'We put the lid on 'cause that's important. That makes the apples cook faster if we put the lid on. Let's say that again. Place the pot onto the element. Tavita, can you put this up there for me?*

11:14 *I could see you saying it...that we had to cook it. Good boy.*

Because there was more guided input from the teacher at Time 2 as she supported the students towards independent expression of the target text, her longer utterances consumed more time in the Time 2 lesson than in the Time 1 lesson (Table 20b). The extra time taken by the teacher to offer students greater acquisition and uptake potential resulted in increased quality and quantity of expression across the lesson, moving students like Rana from supportive, collaborative expression to almost independent expression and reading.

Clauses per utterance

There were few differences in clause type number, duration of clause types, and number of clauses per utterance between Time 1 and Time 2 (Tables 20c). The critical difference lay in the lesson structure and orientation differences at Time 1 and Time 2. The Time 1 lesson was not orientated towards making carefully scaffolded text and expression available in such a way that the students' quality and quantity of expression was pushed, and their acquisition and uptake potential was enhanced. At Time 1, guiding the students to collaboratively solve the Maths problem took precedence over expanding the quality and quantity of expression, lexically and grammatically. At Time 2, there was a dual focus – an explicit focus on the text and expression of making stewed apple, alongside students cognitively coming to grips with the ingredients and process. As a result, towards the end of the Time 2 lesson, Rana was able to express both with almost total independence, whereas in the Time 1 lesson, the two students in the micro-teaching group would have been unable to independently express the process of and solution to their Maths problem.

Utterance processes

Questioning, prompting and directing utterance text processes dominated in both Time 1 and Time 2 lessons (Table 20g), with informing utterances also high in number, reflecting the structure and orientation of both lessons. The Time 1 lesson focused on Maths processes and problem solving, the Time 2 lesson on enhanced understandings combined with quality expression of the process of making stewed apples. While a high number of question utterances also featured at Time 2, there was marked reduction from Time 1. In the early part of the Time 1 lesson, when the teacher was working with the whole class, and in the micro-teaching situation, questions served as prompts to elicit the students' mathematical thinking and to recall previous learning. At other times, questioning processes were used to enquire about what students involved in tasks around the classroom were doing, and to direct students. IRE exchanges dominated as this example:

Time 1 example

15:15 *And you took how many away?*
15:20 *So how many do you have left?*
15:25 *She told me. And was she right?*
15:36 *How many did you have?*
16:03 *How many did you have?*
16:05 *Can you write that for me over here?*
16:11 *Did you plus or did you take it away?*
16:14 *You took it away, didn't you? So you took one away. So let's do a minus sign. Minus. No just one..just one sign and then minus what?*

At other times throughout the Time 1 lesson, questioning and directing were combined, acting also as prompts to rethink or continue. For example:

In the Time 2 lesson, questioning utterances also served as prompts but were far less prevalent than in the Time 1 lesson. At times questioning utterances were simply pseudo-questions used to trigger the students' readiness to express or take action, as in these two examples:

Time 1 example

17:37 *We'll do one more. Okay, you ready?*
17:42 *Right. There we go. Share those evenly. Share those evenly.*
17:49 *Just do them in the middle and then you'll know.*
18:18 *Okay. Quickly. As fast as you can.*
18:36 *Ara, are you keeping up with Kaeya?*
18:39 *We've going to have problems again, aren't we? We've got to think about sharing them evenly.*
18:45 *One at a time. ..but we'll even it up at the end. Don't worry. Keep going. We'll even it up. Jaelyn?*

Time 2 example

05:30 *Okay now, now let's say this again. Can we see this? Cut apples into small pieces.... So that was the next thing we did.*
05:44 *What did we start out with?*
05:47 *What did we start out with? Red apples...and then we had to peel.... ? Peel the apples. And then we had ...peeled apples. None of them had their skin on. And then we cut apples into small pieces.*

Time 2 example

12:24 *Okay shall we go from the beginning? Are you ready? Kaitlyn, are you ready? Are you going to help me?*
12:30 *I think she is now. Right what did we start out with?*
12:35 *and then we had to*

Collaborative, small group and individualised expression of the target text dominated the utterance exchanges between teacher and students in the Time 2 lesson, with IRE patterns of exchange minimally occurring, replaced by iterative cycles of expression by students, the teacher easing away

input and support as students like Rana became more expressively and cognitively confident, producing fleunt and accurate text that extended her grammatically and lexically. Informing, prompting and directing utterance text processes were more sustained at Time 2 than at Time 1 (Table 20g), indicative of change in orientation from IRE exchange patterns where quick fire responses were a feature to using these processes to trigger and guide quality and quantity of expression by students. A further indicator was the marked reduction in closed question types in the Time 2 lesson, almost half the number than at Time 1. At Time 1, 54% of the questions were known-closed and open-closed, reduced to 43% at Time 2 (Table20i).

Direction of utterances

In the Time 1 lesson, the major part of the lesson and the highest number of teacher's utterances were exchanges with the two micro-teaching students, 109 utterances directed to the group (Table 20j). In the Time 2 lesson, the first 16 minutes were the teacher and the students working as a whole class, with the second half of the lesson the teacher supporting students in small groups. Interwoven in both were utterances directed towards individual students. With frequent changes of attention throughout the Time 1 lesson from the micro-teaching students to the other students elsewhere in the class, topic focus was at times compromised, the teacher responding to issues cropping up between students not directly under her watch, as in these two examples:

Time 1 example

08:13 Okay you guys just do your maths and I'm sure at morning tea time she will want to play with you. Okay? She's probably feeling just a bit sad.

Time 1 example

08:43 Can you tell me what happened? Would you like to do your dinosaur in Mrs Lau's room? Go and sit down.

In contrast, almost all teacher utterances in the Time 2 lesson were directly related to the topic and text in hand, and carefully scaffolded to build students' text and expressive competency.

Summary

In Time 1 lesson 3, the teacher worked for the majority of the time with two students at her teaching table in a micro-teaching situation while other students were working on other tasks elsewhere in the classroom. The teacher's attention was often divided between the two, resulting in lack of flow and connectedness in content and expression at times throughout the lesson. IRE exchange patterns were dominant, with a high number of teacher utterances a combination of questioning and directing text processes, orientated towards display responses by the students, or to guide mathematical thinking.

Grammatical complexity data, and the number and duration of words per utterance data, were quite similar in both lessons, not illuminating critical differences between the two lessons in terms of the impact of the lesson and teacher utterances on the quality and quantity of the students' expression. However, examination of the lesson transcripts pointed to a strong and explicit orientation in the Time 2 lesson towards offering the students expressive support, in-built redundancy and frequent

opportunities to hear and try out the target text, pushing students such as Rana's expression grammatically and lexically, and offering her enhanced acquisition and uptake potential. The teacher made an explicit shift from content and process as the prime focus in the Time 1 lesson, to the co-occurrence of cognitive and expressive quality and quantity by students at Time 2. She consciously and explicitly focused on providing optimal discourse and interactional conditions so that students would become increasing confident, fluent and accurate in expressing text of grammatical quality through carefully scaffolding their expression and understandings from least to most independence.

The structure of the Time 1 lesson impacted significantly on Rana's expression due to unavailability of the teacher to offer her quality and quantity of text under optimal discourse and interactional conditions. In the Time 2 lesson, Rana was enabled cognitively and expressively as a direct result of the lesson's structure and staging, and the explicit attention given to quality and quantity of expression by students. Lesson analysis of both teacher and case study student expression and interaction in Time 1 lesson 2 and Time 2 lesson 1 indicates a convergence, that is, a pedagogical shift by the teacher from Time 1 to Time 2 directly influencing and enhancing the quality and quantity of students' expression, grammatically and lexically. In the Time 2 lesson, enhanced acquisition and uptake potential was on offer to students like Rana.

Discussion

Both the School B teacher and the School A teacher made a marked mindset and pedagogical shift between Time 1 and Time 2 as evidenced by the analysis of interactional and discourse patterns operating in three Time 1 and three Time 2 classroom lessons by each teacher. This shift impacted significantly on the quality and quantity of expression by both teacher and students, and substantially changed the interactional exchange patterns between them. As a result, the students were grammatically and lexically extended, their acquisition and uptake potential greatly enhanced.

While differences exist as to the nature of this shift, there are critical identifiable commonalities between the two teachers. At the heart of these was an apparent knowledge shift whereby both teachers' lesson structure and content at Time 2 were orientated towards optimising conditions for cognitive and linguistic acquisition by students, informed by first and second language acquisition principles and research evidence in handout notes and discussions during the intervention. Commonalities and differences will be discussed in order to highlight the extent and depth of the shift by each teacher from which insightful pedagogical understandings in relation to quality and quantity of expression in the classroom can be drawn.

Commonalities - Time 1 lessons

Interactional and discourse patterns

At Time 1, lessons were strongly orientated to IRE exchange patterns, both teachers were strictly in control of the way and topic, with directives and questions frequent and dominant. As a consequence, the students were positioned as controlled responders much of the time, where spontaneous contributions by students were reined in, student utterances controlled by an expectation of hands-up to teacher posed questions unless directly addressing individual students. An unintended outcome of the strict control by the teacher was a lack of dynamism and students at times being distracted, disengaged or ignored.

Generally, the students in both classes were compliant and showed a keenness to learn, and to be selected and affirmed by the teacher. Interactional and discourse ground rules had clearly been set by both teachers and so teachers were able to almost always relate to the students in a friendly and supportive manner, seldom chastising or criticising individual students or the class. The teachers' focus was on teaching to learn, gauging this by the 'correctness' of the students' answers and the students' perceived attention to the task and topic in hand. On occasion both teachers engaged in brief conversational exchanges with individual students, particularly in the small group situation, or in the case of the School A teacher, as she moved around the class among the students. The ordered teacher-student relationship operating in both classes gave an appearance of effective teaching and learning in progress.

Cognitive and linguistic focus and engagement

Closer analysis of the Time 1 lessons suggests there was not rich learning occurring, nor high levels of student engagement. Seemingly worthwhile lesson focuses minimally engaged and expanded the students cognitively and expressively. In the School B Time 1 lessons, the first lesson focus was on a brief retell and reading of a very simple text, *Greedy cat,* followed by a focus on nouns; the second lesson zoomed in on students being able to articulate the learning intentions and the explanation of complex concepts beyond most of the students, leading to quite some confusion; and the third lesson again zoomed on students articulating the learning intentions alongside tightly controlled discourse about role models. In all three lessons, the student outcomes appeared to be less about rich learning and expression, and more about students displaying what the teacher was seeking. The culture and structure of these lessons was one of compliance, control, discourse dominance by the teacher, with the students allowed minimal opportunities for expression of quality and quantity.

In the School A Time 1 lessons, the first lesson comprised of two reading groups with the teacher while the other students were occupied on tasks and activities around the classroom. The two 15 minute reading lessons followed a pro-forma shared reading format, much of the focus at the word and letter level with few opportunities to engage in rich conversations about the each story, the flow

of which was frequently interrupted by the teacher attended to students elsewhere in the classroom. The second lesson was a retrieval of knowns about dinosaurs, followed by students colouring in a picture, with almost nothing on offer that expanded the students cognitively or expressively. The third lesson again followed a group rotational organisation as in the first lesson, this time in Maths, with the two students at the teaching table prompted to figure out solutions to their Maths problem, with little rich mathematical expression on offer from the teacher and few opportunities for the students to express with fullness. In the two lessons where group rotations were in operation the students not directly involved with the teacher were highly constrained cognitively and expressively. As in the three School B Time 1 lessons, the three School A Time 1 lessons had an appearance of ordered learning. While there was slightly less teacher dominance than in the School B Time 1 lessons, with more opportunities for students to express naturally and not under the control of the teacher, the three School A Time 1 lessons were not rich with learning, the students' quality and quantity of expression constrained, with little acquisitional and uptake potential on offer to push them cognitively and linguistically.

In all six Time 1 lessons, the curriculum area and topic of each lesson and an ordered lesson were at the fore, the language and expression of learning and the accompanying ideas backgrounded, implicit or not on offer.

Questioning

A typical feature of IRE exchange patterns is a high number of questions posed by the teacher, the majority of which are known-closed questions. In some Time 1 lessons, dominated by IRE interactional and discourse exchange patterns and high levels of control of the topic and the way by the teacher, questions were so abundant that well over half the utterances by teacher included some type of question. Some single utterances contained four or more questions in a run, without pause for students to process or respond, and some consecutive utterances consisting almost solely of questions in a run of 6 to 8 utterances. Questions in general acted to elicit display or expected responses from students, or where questions posed were open and new, such was the control by the teachers that student responses were generally minimal. Questions in typical IRE patterns of exchange contributed to constraining the students' quality and quantity of expression under less than optimal acquisition and uptake conditions.

Commonalities – Time 2 lessons

Interactional and discourse patterns

In contrast to the Time 1 lessons, in the Time 2 lessons of both teachers were deliberately structured towards quality and quantity of expression under optimising conditions. IRE exchange patterns were replaced by a combination of meaningfully and supportively available quality expression by the teacher, alongside multiple opportunities for students to try out text and expression that pushed them

grammatically and lexically. The focus of each lesson was on cognitive *and* linguistic expansion, with students scaffolded to be expressive partners with the teacher and each other. The structure and orientation of some lessons was almost wholly dedicated to collaboratively co-constructing an evolving narrative or sequential text, with the teacher merging her quality of expression with spontaneous or triggered contributions from the students. In these lessons, the students were scaffolded through iterative stages of noticing and expressing text of grammatical and lexical quality on offer from the teacher with high levels of support, to students expressing the evolving text with increasing independence, or at the very least, expressing with greater accuracy, fluency and confidence with support. In five of the six Time 2 lessons students were pushed grammatically and lexically yet supported in such a way that they were enabled. In the sixth lesson, while expression of quality was less explicit, because the teacher offered the students a richly expressed narrative to contextualise the mathematical problem to be solved, totally engaging the students expressively and cognitively, the students noticed and were involved in the text, thus enhancing their acquisitional and uptake potential.

The teachers were comfortable with students' spontaneous contributions occurring throughout the lesson, keyed into the message as well as the linguistic quality of the student's expression. Most times the teachers were elaborative in their response, but at all times the student's contribution was valued and included in some way. While the number of questions posed by the teacher decreased markedly in all lessons, they still featured in teacher utterances. In the Time 2 lessons, the majority of questions served as prompts to trigger and support students as they tried out expressing text at their grammatical and lexical cutting edge, and some simply tags to confirm or as signalling moves to the next stage of the lesson. The students were no longer positioned as responders to teacher demands or questions, but rather positioned as active, engaged expressive partners. No longer was the teacher's voice and expression dominant and all consuming in the classroom, but rather the means whereby the students' quality and quantity of expression was enabled and enhanced.

The Time 2 lessons had many or most of the identifying features of optimal conditions for first language acquisition. These include in-built redundancy, elaborative responses of grammatical quality by the caregiver, high levels of interaction with mutually engaging, responsive, frequent and contingent replies to children's verbalisation, and more speech heard and produced by the child. In the Time 2 lessons, dialogic opportunities were deliberately triggered and on offer throughout the lessons; text and expression of grammatical quality from the teacher was available in scaffolded staging throughout the lessons, most times explicitly; greatly increased opportunities for students to try out expression or contribute to the lesson text resulted in high levels of cognitive and expressive engagement; iterative cycles of expression offered in-built redundancy; and noticing and contributing to on-going discourse was a core focus. All lessons were strongly orientated towards quality and quantity of expression by the students operating within optimising interactional and discourse

conditions throughout each lesson. While not fully there yet, the teachers had come a long way towards consistently enhancing the students' expressive acquisition and uptake potential.

Differences – Time 1 and Time 2 lessons

Extent and complexity of teacher's utterances

In the Time 1 lessons, neither teacher provided optimal conditions for language acquisition, a critical part of which is text and expression of grammatical and lexical quality and quantity on offer to the students. In all three Time 1 lessons, the School B teacher tended towards too complex, too fast, too much expression. Frequently she expressed long, multi-clause, fast paced utterances, with a cognitive and linguistic demand well beyond even the most language competent students. The effort needed to comprehend her message and meaning, the grammatical structure and lexis of which was well outside the 'goldilocks zone' of most if not all the students, meant that any potential for acquisition and uptake in the text on offer was unavailable to the students.

The School A teacher, on the other hand, tended towards too simple and too little expression in the three Time 1 lessons. In most part her utterances were at a comprehensible speed and pace for the students, but conscious of the students' limitations in vocabulary and expression, she deliberately simplified and minimised her expression. There was little demand and effort placed on the students, the grammatical structure and lexis these students required to push their expressive resources beyond their current was not on offer. Unlike the School B teacher, the School A teacher was well outside the 'goldilocks zone' of most if not all the students, by under-providing rather than over-providing.

Overall in the Time 1 lessons, differently but with similar outcomes, neither teachers' utterances provided the students with 'goldilocks zone' text and expression, the effect of which was that the students' acquisition and uptake potential was under-potentialised. This was exacerbated by lack of explicit attention to the how, what, when and why of expression by teacher and students. In contrast, there was a marked change to the extent and complexity of the teachers' utterances, both teachers deliberately and explicitly attending to providing text and expression targeted as closely as possible within the 'goldilocks zone' of individual students within whole class, small group and one-on-one meaning exchange situations.

Metacognition

The School B teacher had a strong metacognitive thread running through her lessons. In the Time 1 lessons, learning intentions were continually brought to the fore, the students considering and articulating these at various points in each of the lesson. A thematic learning intention, and topic and lesson learning intentions, including explicit attention to grammar in the form of nouns, verbs and adjectives, were emphasised. There was an evaluative element layered in whereby the students were asked at certain points to in a lesson to evaluate and indicate the extent of their learning in relation to

the learning intention/s. In principle, explicit awareness and articulation of the what, how and why of learning is commendable. However, it was evident that the students' comprehension of the learning intentions was variable, the younger students especially challenged to partially or wholly understand their meaning and perceive the link and relevance of these to the core content of each lesson. In each of the Time 1 lessons, a significant amount of time was taken up attending to and expressing learning intentions for apparently little cognitive and expressive gain.

In the Time 2 School B lessons, a strong metacognitive thread was again evident, this time proving to be extremely powerful in enhancing the quality and quantity of expression by the students. The students clearly understood the what, how and why of such expression, able to give practised examples and apply them consciously in their expression in the classroom. Attention to expressive effectiveness by way of careful and appropriate grammatical structuring and word choices was evident in the students' contributions and responses, and in the text and expression afforded them by the teacher. Explicit expressive metacognitive attention was a powerful contributor to the quality of expression by students, serving also to raise the grammatical and lexical expressive awareness of the teacher.

The School A teacher was not metacognitively explicit in the manner of the School B teacher. In all Time 1 and Time 2 lessons, the focus of the lesson or part of lesson was expressed by the teacher but without the emphasis of the School B teacher. The students were not required to articulate learning intentions or outcomes, nor evaluate their learning. The what and how, but not the why of the students' learning, was expressed by the teacher in a low key manner as part of introducing what was to come and next steps.

At Time 2, there was no explicit expressive metacognitive thread running through the lessons, even though the teacher herself was deeply conscious of and explicitly attended to the how, what and why of expression both by her and the students. Implementation self-reporting by the School A teacher indicated that she was metacognitively explicit with the students about word choices, vocabulary acquisition and expressing 'in detail', and there had developed of culture of excitement among the students about 'being clever' in this way. At times in the Time 2 lessons, the students expressed that they had 'said a lot' or were proud of knowing or contributing "clever words", but there was not such as strong emphasis as in the School B Time 2 lessons. It can only be surmised that a heightened expressive metacognitive awareness level throughout the lessons would have resulted in even greater quality of expression by the School A students than was evident in the Time 2 lessons.

Teacher- student rapport

There was a subtle difference in demeanour between the School B and School A teacher which appeared to influence teacher-student rapport, and the students' readiness and willingness to

contribute and express. In the Time 1 lessons, this difference was most evident, but less so in the Time 2 lessons. While both teachers in the Time 1 lessons maintained strict control of the way and topic, the rein was more tightly in grip with the School B teacher than the School A teacher, whose rapport with the students was somewhat more relaxed and informal. Very strict and formal control by the School B teacher appeared to have an inhibiting effect on the students' expression when directly addressed by the teacher, and in determining whether students volunteered to express in response to a teacher question or offer a spontaneous contribution, further compounding the constraints put on their expression. The School A teacher's more relaxed rapport with her students at Time 1 meant that at times she felt the need to rein in some students in terms of behaviour and expression, as these students were not abiding by the interactional and discourse patterns valued and set by the teacher. In general, however, they were not as expressively inhibited as the School B students appeared to be.

In the Time 2 lessons, the School B teacher appeared more relaxed, less formal in her relationship with her students, influenced by the marked shift in interactional and discourse exchange patterns between teacher and students. Because the teacher attended deliberately and explicitly to quality and quantity of expression by the students, a rapport shift also occurred. As a result, the students were markedly less inhibited, felt comfortable to express spontaneously, and were keen and proud to volunteer expressing ideas and text with fullness to the teacher and their peers. In the Time 2 School A lessons, the existent more informal and relaxed rapport between teacher and students was ideally suited to increased dialogic exchanges and spontaneous contributions of ideas and expression by the students throughout the lessons.

Lesson-student organisation

The School B Time 1 and Time 2 lessons comprised primarily of whole class discussion and activities interspersed with peer pair sharing, with the teacher most often participating in the pair/small group exchanges. At Time 1, the latter was often completely dominated by the teacher, with IRE exchange patterns inhibiting and limiting the students' expression in what would otherwise offer the students a comfortable exchange relationship with a peer. At Time 2, the teacher also participated in pair/small group exchanges, but in a less obtrusive and more supportive manner whereby the students felt more inclined and able to express and contribute to the teacher and each other. In all six Time 1 and Time 2 lessons, the teacher was available to the students most of the time so that the quality and quantity of expression was potentially on offer throughout each lesson. That it was not in the Time 1 lessons was not due to unavailability of the teacher as an expressive expert but rather the means whereby she executed this.

Two of the School A Time 1 lessons were small group rotations, with two students working with the teacher at her teaching table while other students worked independently elsewhere in the classroom. Thus, in a 30 minute lesson, the teacher was available to some students only at the introductory stage

of the lesson and for the rest of the lesson time left largely to their devices. Whether more or less competent, students not with the teacher were highly constrained cognitively and expressively, and for considerable lengths of time, with no recourse to an expressive expert and scaffolder. The third Time 1 lesson comprised of 20 minutes of all students working with the teacher followed by table work with the teacher moving among the students. In this lesson, there was the potential to provide quality and quantity of expression, its unavailability, as with the School B Time 1 lessons, due to the lack of attention by the teacher to providing this.

When young students are expressively limited, influencing also their cognitive understanding and expansion, having long periods of lesson time away from the teacher is of concern when enhanced cognitive and expressive acquisition and uptake potential is a matter of some urgency. The Time 1 lesson analyses of the case study students and the teacher indicate that the students do not, and most often cannot, effectively scaffold each other expressively and cognitively. It challenges organisational decisions such as the one in operation in the School A classroom at Time 1.

At Time 2, the organisation of the School A lessons changed significantly, and as a consequence, the teacher was available to the students most of the time. In one lesson, collaborative co-construction of text comprised the whole lesson, with the teacher available to actively scaffold quality and quantity of expression and provide students with enhanced acquisition and uptake potential. In another lesson, the first 18+ minutes were similarly organised, followed by focused small group interaction and expression building on the previous scaffolding, with the teacher offering the students further guidance and support to express with grammatical, lexical and cognitive quality and quantity. In the third lesson, with two exceptions, all students again worked with the teacher for the whole of the lesson. The two students not in the group were ‘special needs’ students and the mathematical concepts and expression were well beyond them. Thus, in the Time 2 School A lessons, sustained periods of expressive and cognitive quality and quantity were on offer because the teacher as key scaffolder was available and orientated towards providing optimal conditions for acquisition and uptake.

Peer, pair sharing

Peer, pair sharing has the potential to offer students quality and quantity of expression as they engage in conversation, trying out newly available text and expression alongside their current expressive capabilities in a non-threatening exchange with each other. It offers practice and consolidation opportunities, and under certain circumstances may provide scaffolding towards enhanced quality and quantity expression and cognition.

As has been mentioned above, the School B Time 1 and Time 2 lessons included a number of structured pair-share opportunities, with and without teacher guidance and support. The School A lessons did not include structured peer, pair sharing, however, on a number of occasions, especially at

Time 1, informal peer sharing opportunities were available. In both the School B and School A lessons, it became evident that peer, pair sharing in the Time 1 lessons, whether structured, semi-structured or informal, offered little quality expression and only offered marginally increased quantity of expression on some occasions. The teacher's presence or involvement with students in a peer, pair sharing situation, with IRE the dominant exchange pattern between teacher and peers, highly constrained the quality and quantity of expression by students.

At Time 2, the shift in lesson orientation towards increased quality and quantity of expression by students affected the peer, pair sharing quality and quantity. The School B teacher had nurtured a culture of supportive contributions by students to each other. Combined with each student striving to express with grammatical and lexical quality, this had a direct influence on peer, pair sharing quality and quantity. On several occasions, a more competent student who was metacognitively aware of their scaffolding role was able to act as scaffolder to a younger, less competent peer, offering text and expression at points of struggle without taking over or posing question after question, as was the case at Time 1. As part of the classroom culture of expressive quality and quantity by all, the more competent student also was offered the opportunity to express at her competency level. Thus, both students were pushed expressively, the younger, less competent student offered enhanced acquisition and uptake potential, and the more competent student offered expressive mileage and consolidation. Significantly, it was the available quality and quantity of expression prior to the peer, pair sharing, and the explicit attention given to the how and why of peer support and talk, that changed the expressive outcomes of both students in the peer, pair sharing situation.

In the School A Time 2 lessons, informal peer, pair sharing as occurred at Time 1 when students were working independent of the teacher did not occur. Instead, the three lessons were structured so that most of the time the students were working directly with the teacher, or offered scaffolded guided support. In one Time 2 lesson, peers were in a small group with the task of sequencing a series of pictures, matching text strips and expressing the process of making stewed apples with quality and quantity. Because in the previous 15+ minutes the teacher and students had collaboratively co-constructed a text of quality and quantity, and because the students had a specified expressive focus supported by picture and text prompts, peer, small group sharing offered each student an opportunity to express in fullness and with meaning.

Each teacher and class, implementing peer, pair or small group sharing differently, had something to offer the other. Whether structured, semi-structured or informal, peer, pair or small group sharing and talk had the potential to offer students cognitive and expressive quality and quantity, was conditional on quality and quantity of text and expression available prior to peer sharing, the availability of guided support from the teacher and/or materials, and the metacognitive awareness of the students as to the how, what and why peer turn-taking and expression.

Summary

A seemingly 'well scaffolded' lesson in terms of moving smoothly through lesson stages and steps is no guarantee that students have been effectively scaffolded, cognitively and expressively, nor that quality and quantity of learning and expression has occurred. It is apparent from the School B and School A lesson analyses, that lessons explicitly orientated towards enhanced expressive acquisition and uptake potential by students need to be not only communicatively different in terms of interactional and discourse exchange patterns, but structured and staged with expression as the means to learning, and the means to expressive acquisition. The consequence of this mind and practice shift by the teacher is that 'well-scaffolded' lessons, deliberately focused on grammatical and lexical quality and quantity, take on a new meaning, orientation and structure.

Optimising conditions for enhanced cognitive and expressive acquisition and uptake is complex, subtle and challenging. Quality and quantity of expression by all in the classroom cannot be pruned down to a simple list of "do's and don'ts". Despite the complexity and challenge, the School B and School A teachers were able to make the mindset and practice shift required, and as a result the students were expressively enabled, active, engaged and contributory to the unfolding discourse of learning and interaction. Each case study student, in his or her unique way, was both recipient and participant, cognitively and expressively. Their acquisition and uptake potential was enhanced between Time 1 and Time 2, their quality and quantity of expression significantly increased within and across lessons at Time 2. Clearly, the students were the beneficiaries when interactional and discourse exchange patterns were optimised in the classroom. It was the teacher who held the key to unlocking quality and quantity of expression by students, for students.

Chapter 6: Findings 3

Lesson analyses: six case study students

Introduction

This chapter reports on the effects of optimising interactional and discourse classroom conditions operating in six sample class lessons, three at Time 1 and three at Time 2, as viewed through the lens of six case study students. One case study student of the three in the class was selected to be the student whose expression and interaction during the lesson were micro-analysed. Thus each lesson was micro-analysed through the lens of the student as well as the teacher (see Chapter 5).

Individual student's lesson analysis

Lesson analysis: Api Time 1 and Time 2 (School B)

Overall context:

Api was in a Year 1-2 class at School B, with students in her class ranging from new entrants to students like Api who was one of the oldest and had been with the same teacher since entering school at age five. She was a serious student, keen to learn and comply fully in class, and able to sustain her concentration and focus in lessons. She interacted with peers in buddy talk in a very nurturing way, never dominating or overriding, but correcting and helping her buddy like a little teacher. At Time 1, although seemingly sometimes puzzled by lesson contents, she managed to support peers and respond to the teacher when queried. She was particularly alert to the expectation of a 'right' answer and was thus quite reserved towards the teacher.

At Time 2, Api concentrated intensely as she tried to follow and say the teacher-provided text, as well as expressing without teacher input. With such intense listening, she was able to express a great deal of the text on offer, quite often leading the students' collaborative saying, expressing quite confidently and fluently at times, with an accurate recall of the shaping text. In buddy pairs, she was very supportive and encouraging of her buddy, as well as taking her turn to say. In the whole class situation she supported other students trying to say the text independently with careful, quiet prompting. When she herself expressed the developing text to the class independently, Api was fluent and confident. The Time 1 and Time 2 lesson stages are provided in Appendix 3.

Complexity and fluency analysis

Api expressed a total of 61 utterances in the Time 1 lesson, with more peer response utterances than lesson response utterances, and 106 utterances in the Time 2 lesson, the majority of which were lesson response utterances (Table 21a).

Table 21.
Lesson analysis – Api - Comparison between Time 1 Lesson 2 and Time 2 Lesson 1

Table 21a.
Length of utterance (number of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	10	24	17	15	-	1
3-5	3	16	13	5	-	-
6-8	2	14	6	2	2	-
9-12	5	5	3	-	-	-
13-15	-	6	-	3	-	-
16-20	-	5	-	1	-	-
21 + longer	-	7	-	2	-	-
<Any Modifier>	20	77	39	28	2	1

Table 21b.
Length of utterance (duration of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	00:15.4	00:39.8	00:18.8	00:22.2	-	00:00.6
3-5	00:06.0	00:52.8	00:21.1	00:10.8	-	-
6-8	00:09.5	01:15.9	00:15.5	00:09.9	00:13.8	-
9-12	00:34.4	00:41.1	00:15.0	-	-	-
13-15	-	01:11.2	-	00:39.1	-	-
16-20	-	01:15.0	-	00:15.0	-	-
21 + longer	-	02:30.9	-	01:02.3	-	-
<Any Modifier>	01:05.4	08:26.6	01:10.3	02:39.4	00:13.8	00:00.6

Table 21c.
Clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 1 PEER TLK	Time 2 SELF TLK	Time 2 SELF TLK
below clause	9	27	15	14	-	1
minimal clause	4	10	16	4	1	-
expanded clause	3	11	5	4	-	-
clause complex	4	16	1	2	-	-
multi clauses (complex clauses)	-	6	-	3	-	-
multi clauses	-	7	2	1	1	-
<Any Modifier>	20	77	39	28	2	1

Table 21d.
Duration of clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	00:14.9	00:50.1	00:16.9	00:39.9	-	00:00.6
minimal clause	00:06.5	00:31.6	00:27.0	00:06.1	00:07.5	-
expanded clause	00:22.8	00:55.8	00:12.5	00:17.0	-	-
clause complex	00:21.2	02:40.4	00:03.0	00:15.7	-	-
multi clauses (complex clauses)	-	01:56.7	-	01:17.3	-	-
multi clauses	-	01:32.1	00:11.1	00:03.3	00:06.2	-
<Any Modifier>	01:05.4	08:26.6	01:10.3	02:39.4	00:13.8	00:00.6

Table 21e.
Number of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	9	28	15	15	-	-
1 cl	7	20	20	7	-	1
2 cl	4	12	3	3	1	-
3cl	-	9	-	-	-	-
4cl	-	1	-	1	-	-
5cl	-	2	-	-	-	-
6cl	-	1	-	2	-	-
7 cl	-	2	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	1	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	20	76	38	28	1	1

Table 21f.
Duration of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	00:14.9	00:50.5	00:16.9	00:41.5	-	-
1 cl	00:29.3	01:30.4	00:38.4	00:21.6	-	00:00.6
2 cl	00:21.2	01:48.2	00:14.1	00:19.0	00:06.2	-
3cl	-	01:46.9	-	-	-	-
4cl	-	00:11.8	-	00:15.0	-	-
5cl	-	00:38.8	-	-	-	-
6cl	-	00:15.1	-	01:02.3	-	-
7 cl	-	00:44.4	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	00:35.3	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	01:05.4	08:21.2	01:09.3	02:39.4	00:06.2	00:00.6

Table 21g.
Text processes per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
question	-	-	17	1	-	-
explain	6	4	-	-	-	-
prompt	1	2	27	20	1	-
feedback	19	74	4	-	-	1
instruct	-	-	-	-	-	-
comment	-	-	-	-	-	-
direct	-	-	2	-	-	-
praise	-	-	-	-	-	-
criticise	-	-	-	-	-	-
thank	-	-	-	-	-	-
describe	-	-	-	7	-	-
inform	19	77	9	15	2	1
confirm	1	1	9	-	1	-
musing	-	-	-	-	-	-
<Any Modifier>	20	77	39	28	2	1

Table 21h.
Relatedness of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
directly related - + ++	20	77	38	28	2	1
somewhat related +	-	-	1	-	-	-
unrelated	-	-	-	-	-	-
rel-unrel	-	-	-	-	-	-
<Any Modifier>	20	77	39	28	2	1

Table 21i.
Confidence of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
minimally hesitant	6	40	1	7	-	-
inconfident - hestitant	-	-	-	-	-	-
confident	14	37	38	21	2	1
<Any Modifier>	20	77	39	28	2	1

The lesson content was conceptually complex and the teacher spent much time trying to explain the idea of 'the Holy Spirit filling us', using two analogies she thought would assist the students to understand this abstract concept better. In fact, it seemed to confuse rather than clarify. In realising this, the teacher explained, described and clarified numbers of times throughout the lesson in a repetitive and dominant manner. Because of this, Api was offered few opportunities to express in the class group. On three occasions, the students were asked to talk with a buddy about various aspects of the lesson, offering Api independent expressive opportunities, however, as with the lesson response utterances, her peer response utterances were minimal, predominantly 1-2 and 3-5 words in length and limited in content and grammatical complexity (Table 21a). For example:

Time 1 example
04:07 ..sizes
04:10 And they're all different sizes.
04:43 ...and they're different sizes.
05.29 Yes
04.36 Tip.
5.43 ...water
9.37 .....sun
10.21 ...life

Notable in this example was the time gap of 3.94 minutes between 5.43 and 9.37 when Api expressed nothing, with the teacher dominating the talk and topic almost totally. An example of peer response utterances shows slightly more extended expression by Api as she led the way sharing with her younger buddy partner. In producing these utterances Api was not challenged linguistically, however, she did have increased opportunity to turn take and express, largely determined by the scaffolding role she took with her buddy partner.

Time 1 example
17:45 What did we learn?
17:49 What did we learn?
17:53 ...the..
17:58 We learned...
18:02 No. We learned about the Holy Spirit and how....
18:10 ....and how it..
18:17 and to.. and what did you find easy?
18:30 What did you find easy?
18:32 Sit properly Luciani.

The fewer longer lesson response utterances expressed by Api, between 6-12 words in length, were either saying what the learning intention of the lesson was or saying a written text on the active board. For example:

Time 1 example
00:45 We are learning that the Holy Spirit is God.
00:53 I am learning how water reminds us of the Holy Spirit.
01:01 I am learning how water reminds us of the Holy Spirit.

In contrast to Time 1, there were considerably more utterances (a total of 106) expressed by Api in the Time 2 lesson, the majority of which were lesson response utterances. Of these, 19 were between 6-12 words in length, and 23 ranged between 13 to over more than 21 words. More and longer lesson response utterances meant Api had greatly extended expressive opportunities and mileage than at Time 1. In the early stages of the Time 2 lesson, Api's utterances comprised of teacher provided or prompted text combined with Api's contribution to the developing co-constructed text related to pictures and story of *The poor sore paw.* As the lesson progressed, the evolving text became 'her own'. Not only did she grow in confidence and fluency expressing sometimes extensive and complex pieces of text, but on numerous occasions, led the way as sayer. The following examples illustrate Api's more extensive expression at Time 2. The first is when Api and her buddy partner were expressing parts of the evolving text; the second when Api expressed to the class group a final part of their collaboratively constructed story.

Time 2 example
22:47 and said, Move out of the way. I want to go home to eat my dinner. The.. cow said, 'I can't.. go.. away because.'.
23:09 dog is.. His.. his right paw stuck in between the two pieces of wood
23:22 and..
23:26 Along came the two children
23:33 The two chi.. Sam and Jessie said, 'Move out of the way.. because.. and farmer said, 'I cannot move away because.. because cow.. because.. because Cow said.. Cow said that.. that.. that.. that..
24:19 ..that.. that.. they want.. So Sam and Jessie were thinking. thinking about what should they do

Time 2 example
31:03 Along came the.. After a while, a..... the farmer came and said, Move out.. of the way. I want to go home to have my dinner. The cow said, I can't move out of the way because.. dog has his paws..his right paw stuck in between the two pieces of wood.

The marked increase in Api's expression at the Time 2 lesson compared to the Time 1 lesson was due to a number of factors, mostly related to the structure and content of each lesson. The teacher had planned the Time 1 lesson such that the analogies and examples would illuminate the students' understandings of the lesson focus and contents. However, the students became confused by the complexity of the concepts and with the teacher's extensive efforts to clarify and explain then

becoming dominant, were given little space or opportunity to contribute to the discourse. While three opportunities were given in the lesson for students to express to a buddy, these offered Api little or no acquisition and uptake potential. Her utterances were generally short, in the main being prompts to her younger buddy partner. Rather than scaffolding the students to express at their cutting edge and providing them with acquisition potential and practice opportunities, the teacher's staging and management of the lesson mitigated this.

On the other hand, the structure and staging of the Time 2 lesson was such that Api received scaffolded cutting edge text input, greatly increased opportunities to express and practise, offering her acquisition and uptake potential in a supportive environment of collaborative co-construction and output. This resulted in greatly increased quantity of expression of utterances that were meaningful and not too simple or too complex. At Time 1, the total duration of Api's lesson response utterances was 1.05 minutes in a 31 minute lesson, compared to Time 2 when she expressed 8.27 minutes, just under a third of the lesson time (Table 21b). Peer response opportunities were more frequent and extended at Time 1 yet Api's expressive time was only 1.10 minutes in total.

Clause type analysis as an indicator of the grammatical complexity of Api's utterances at Time 1 and Time 2 aligns with quantity analysis data (Table 21c). At Time 1 Api's lesson response utterances were dominantly below clause, the rest ranging between minimal and expanded clauses, and clause complexes. Her peer response utterances also included a small number of expanded clauses, clause complexes and multi-clauses, however, 79 % of her utterances were below clause or minimal clauses. At Time 1, the grammatical quality of Api's expression as measured by clause type was minimal. In contrast, at Time 2 Api's utterances included a greater number of clause complexes, and multi-clauses with and without clause complexes, as well as 11 expanded clauses. While her lesson response expression also included a large number of below clause and minimal clause utterances, these were interwoven with other more grammatically complex utterances.

The Time 2 lesson structure and content offered Api valuable models of more complex expression, which unlike potentially available text in the Time 1 lesson, was meaningfully co-constructed text to which Api contributed collaboratively. With this, Api's quality and quantity of expression was opened up. Transcript analysis of Api's utterances of the Time 2 lesson indicates that expressive quality was supportively available to her throughout the lesson in a manner that gave her multiple opportunities to try out these expressions as a step towards acquisition and uptake. The following examples are a series of continuous utterances by Api taken from across the 30 minute lesson.

Time 2 example
05:24 The poor sore paw. The brown, fluffy dog is walking over the bridge.
05:40 ...when.. his.. paw.. got.. sore..
05:48 ..stuck in between the two wood pieces
06:00 ..fluffy dog was walking across the.. bridge when his paw.. was stuck in between the two wo.... hard wood..

Time 2 example

08:41 *He pulled and pulled and pulled.. but he could not get his paw out*
09:00 *He look very sad ..to. cry.*
09:23 *When the dog was walking across the bridge..to go home.. his right paw got stuck in between the two piece of wood. He pulled and pulled and pulled but his paw could not.. get free*
09:53 *He sat and began to.. howl. Howl. Howl.*
10:09 *Along.. along came a goat.*
10:24 *and he said, 'Move off the way, dog. I want to go home.'*

Time 2 example

13:47 *Move out of the way.. cow*
13:52 *...want to go.. I want to go home*
14:23 *I cannot move because.. dog's.. right... is stuck between the two wood pieces*
14:58 *Along came..*
15:02 *Along came cow... He said, 'Move out of the way, goat.. because I want to go to the farm*
15:25 *Goat said it.. I can't. I can't move because dog is.. is stuck in between.. dog's right paw is stuck between.. the two.. pieces of wood.*

Time 2 example

22:47 *and said, Move out of the way. I want to go home to eat my dinner. The.. cow said, 'I can't.. go.. away because.'.*
23:09 *dog is.. His.. his right paw stuck in between the two pieces of wood*
23:22 *and..*
23:26 *Along came the two children*
23:33 *The two chi.. Sam and Jessie said, 'Move out of the way.. because.. and farmer said, 'I cannot move away because.. because cow.. because.. because Cow said.. Cow said that.. that.. that.. that..*
24:19 *..that.. that.. they want.. So Sam and Jessie were thinking. thinking about what should they do*

At Time 1, the total duration of Api's lesson and peer response utterances was 2.16 minutes, compared to Time 2 when the combined duration was 10.67 minutes (Table 21b). Significantly, at Time 2 Api spent considerably more time expressing utterances of greater rather than simpler grammatical complexity. The quality and quantity of her expression expanded in tandem, primarily because she had quality text expression and supportive available to her and increased opportunities to try these out.

Api's more complex and longer utterances at Time 2 compared to Time 1 are also evidenced in the number of clauses per utterance data (Table 21e). At Time 1, all of Api's lesson and peer responses utterances were 2 clauses or fewer, while at Time 2, a significant number of lesson response utterances had 3 to 7 clauses, with one 11 clause utterance. There were fewer peer response utterances at Time 2 than Time 1, the utterances with no or one clause when Api was supporting her peer buddy to express the story text, the utterances with more clauses when she was expressing the text to her buddy. The duration of clause number per utterance data shows a proportional increase in utterance time with the increase in the number of clauses per utterance (Table 21f).

There was a low occurrence of self-talk by Api in both Time 1 and Time 2 lessons (Table 21a). This probably reflects Api's maturity as a learner and suggests that she felt no need to practise expressions privately. She might be described as an 'outward' rather than 'inward' learner, based on her ability and determination to concentrate and focus on the lesson and task in hand. With a strongly established English resource base relative to many other students in her class, she had an acquisition readiness that responded when more optimising acquisition conditions were provided, as in the Time 2 lesson.

Text processes of utterances

The text processes of Api's utterances reflect the differences in lesson structure between Time 1 and Time 2 (Table 21g). Lesson response utterances in both lessons were predominantly feedback and inform processes in response to teacher questioning or prompting, with a small number of utterances being also explain and prompt processes. The predominant prompting peer response utterance processes at Time 1 reflect the role Api took as scaffolder, questioning and prompting her younger buddy partner to understand and express as best she could. At Time 2, she also took the scaffolder role, but because of the nature of the turn taking structure, Api also took turns to express the text to her peer. Question processes in lesson response utterances did not occur at Time 1, with one only at Time 2, indicating Api's utterances were primarily responsive rather than initiating and enquiring.

Relatedness of utterance

In line with Api's overall focus and attitude as a learner, in both Time 1 and Time 2 lessons, her lesson and peer response utterances were directly related to the lesson and topic in hand (Table 21h).

Confidence of utterance

The increase in utterance hesitancy at Time 2 compared to Time 1 reflected Api endeavouring to express longer and more complex text that challenged her grammatically and cognitively (Table 21i). There was a demand on her to express 'new' text, especially in the earlier stages of the lesson, and as the lesson proceeded, to accumulate text meaning across utterances to express a fluent and meaningful story. Transcript analysis indicates Api's utterances were increasingly confident as the lesson proceeded. At Time 1 Api was proportionately more confident and fluent with her utterances than at Time 2 due primarily to her not being pushed grammatically or in duration of utterances.

Summary

The quality and quantity of Api's utterances increased markedly in the Time 2 lesson compared to the Time 1 lesson, impacted significantly by differences in lesson structure and content. Api's attitude towards and focus on learning combined with her readiness to acquire and express was not potentialised at Time 1, the content confusing and complex, with few opportunities available to her to supportively try out potentially available text. Lesson response utterances at Time 1 were few in number, minimal in length and word count, and grammatically simple. On the three occasions where there was an extended opportunity to express with a buddy partner, Api was not pushed expressively, acting primarily as the scaffolder to her younger peer, taking a nurturing role.

In contrast, at Time 2, Api's lesson response utterances were significantly more in number, her utterances increasingly sustained in terms of word count and duration, and grammatically more complex as measured by clause type and count. Scaffolded text was available to Api right throughout the lesson in ways that supported her to encounter the developing text of the story multiple times, with

on-going opportunities to try out expression collaboratively with her peers and teacher, as well as on her own. With the book pictures as a trigger and Api active as a co-constructing participant, her readiness to acquire and uptake text at her cutting edge of structure and grammar was potentialised. Commensurate with this was an increase in the quality and quantity of her utterances. Acquisition and uptake was evident as the lesson proceeded, with Api increasingly able to independently express extended utterances with fluency and confidence, at times leading the way and supporting peer expression.

Api's utterances were largely not 'original' in the sense that they were primarily 'saying' and recalling the collaboratively co-constructed class and teacher expressions and text. With the 'new' supportively available text alongside the 'known', acquisition and uptake optimising potential was enhanced. Greater expressive quality and quantity supportively available resulted in her acquiring grammatically more complex and extended text expression.

The changed lesson structure and content at Time 2 was the key factor affecting Api's readiness and ability to try out and increasingly express text of greater quality and quantity beyond what she could construct independently. Conversely, the Time 1 lesson structure and content seriously limited Api's acquisition and uptake potential towards greater quality and quantity of expression.

Lesson analysis: MELE Time 1 and Time 2 (School B)

Overall context:

Mele was a Year 2 student at School B in a multi-level classroom of new entrant, Year 1 and Year 2 students. At Time 1, lesson 1, she interacted confidently, showing a strong desire to participate in the class lesson. She was keenly aware of her peers and overtly and covertly interacted with them throughout the lesson. She processed lesson text privately as evident in self-talk and her concentration on the interactive board text. She demonstrated a quickness to respond, keen to please the teacher and be seen as capable and fast. At Time 2, lesson 3, Mele expressed with some hesitancy - the new text and concepts were at her expressive cutting edge and proved quite challenging to her in terms of vocabulary and linguistic structure. She wanted to participate and tried to say the text along with class members and teacher. When in buddy or small group situations, Mele expressed with some confidence, keen to say and display. She monitored other students quite closely but was generally quite focused throughout the lesson with the exception of a few concentration lapses. The Time 1 and Time 2 lesson stages are provided in Appendix 4.

Complexity and fluency analysis

Mele expressed 102 utterances in the Time 1 lesson and 65 utterances in the Time 2 lesson (Table 22a), due primarily to differences in lesson structure and contents between each lesson. The number

of lesson response utterances at Time 2 was proportionately more of the total number of utterances than at Time 1 when peer response and self-talk utterances were 21 utterances for each.

Table 22.
Lesson analysis – Mele - Comparison between Time 1 Lesson 1 and Time 2 Lesson 3

Table 22a.
Length of utterance (number of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	35	25	13	3	12	-
3-5	9	14	8	2	7	-
6-8	5	3	5	-	2	-
9-12	2	9	2	1	-	-
13-15	-	2	1	-	-	-
16-20	-	1	-	-	-	-
21 + longer	1	5	-	-	-	-
<Any Modifier>	52	59	29	6	21	-

Table 22b.
Length of utterance (duration of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	00:52.8	00:37.5	00:18.6	00:03.5	00:28.8	-
3-5	00:20.5	00:48.4	00:19.3	00:03.8	00:19.6	-
6-8	00:34.0	00:19.5	00:24.4	-	00:13.7	-
9-12	00:17.8	01:27.1	00:11.0	00:04.8	-	-
13-15	-	00:22.1	00:15.6	-	-	-
16-20	-	00:19.5	-	-	-	-
21 + longer	00:23.6	02:37.1	-	-	-	-
<Any Modifier>	02:28.6	06:31.1	01:28.8	00:12.2	01:02.1	-

Table 22c.
Clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	40	34	9	2	14	-
minimal clause	5	6	13	2	3	-
expanded clause	3	3	2	1	1	-
clause complex	-	7	4	-	-	-
multi clauses (complex clauses)	1	7	-	-	-	-
multi clauses	3	2	1	1	3	-
<Any Modifier>	52	59	29	6	21	-

Table 22d.
Duration of clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	01:14.6	01:14.4	00:12.9	00:02.4	00:28.4	-
minimal clause	00:06.7	00:23.8	00:33.4	00:03.8	00:15.6	-
expanded clause	00:22.9	00:20.5	00:24.7	00:01.1	00:02.4	-
clause complex	-	01:23.4	00:12.7	-	-	-
multi clauses (complex clauses)	00:23.6	02:42.1	-	-	-	-
multi clauses	00:20.8	00:26.9	00:05.2	00:04.8	00:15.8	-
<Any Modifier>	02:28.6	06:31.1	01:28.8	00:12.2	01:02.1	-

Table 22e.
Number of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	41	33	9	1	14	-
1 cl	6	8	15	3	4	-
2 cl	1	2	5	1	1	-
3cl	-	8	-	-	2	-
4cl	3	2	-	-	-	-
5cl	-	1	-	-	-	-
6cl	1	1	-	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	1	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	1	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	52	57	29	5	21	-

Table 22f.
Duration of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	01:15.9	01:12.4	00:12.9	00:01.3	00:28.4	-
1 cl	00:25.8	00:31.0	00:58.0	00:05.0	00:17.9	-
2 cl	00:02.4	00:24.3	00:17.9	00:04.8	00:03.7	-
3cl	-	01:19.8	-	-	00:12.1	-
4cl	00:20.8	00:43.3	-	-	-	-
5cl	-	00:16.5	-	-	-	-
6cl	00:23.6	00:35.1	-	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	00:40.6	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	00:41.1	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	02:28.6	06:24.1	01:28.8	00:11.1	01:02.1	-

Table 22g.
Text processes per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
question	2	-	2	1	-	-
explain	3	9	6	2	1	-
prompt	1	-	3	-	-	-
feedback	43	43	4	-	3	-
instruct	-	-	-	-	-	-
comment	1	-	10	1	15	-
direct	1	-	4	-	-	-
praise	1	-	-	-	-	-
criticise	-	-	-	-	-	-
thank	-	-	-	-	-	-
describe	-	2	1	-	-	-
inform	41	58	17	5	10	-
confirm	5	2	3	-	2	-
musing	-	-	-	-	-	-

<Any Modifier>	52	59	29	6	21	-

Table 22h.
Relatedness of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
directly related - + ++	51	58	16	2	12	-
somewhat related +	1	1	6	2	8	-
unrelated	-	-	7	2	1	-
rel-unrel	-	-	-	-	-	-
<Any Modifier>	52	59	29	6	21	-

Table 22i.
Confidence of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
minimally hesitant	11	28	1	-	6	-
inconfident - hestitant	-	-	1	-	-	-
confident	41	31	27	6	15	-
<Any Modifier>	52	59	29	6	21	-

The majority of Mele's utterances in both lessons were in direct response to teacher and class. The complexity and fluency of expression as evidenced by the number of words per utterance (Table 22a) indicated Mele expressed quantitatively more at Time 2 than Time 1. At Time 1 the majority of Mele's utterances were short, comprising of 1-2 words or 3-5 words only. At Time 2, the number of 1-2 word utterances decreased by 32% while 3-4 word utterances increased slightly by 16%. There was a marked increase in utterances of word lengths between 9- 21 words or longer at Time 2. Notable were the five utterances of 21 or more words.

This increase in utterance length from Time 1 to Time 2 would appear to be due to a number of prime factors affecting - namely, a) an increase in opportunities available for Mele to express (quantity of expression) with the staging of the lesson including collaborative saying of more complex and longer utterances (input and output opportunities and availability), and buddy and group expression, allowing Mele to try out her tentative and established expressive resources; b) an expectation and developing class culture that 'we speak in detail', with fullness of expression 'so others know what we mean' (quality of expression), so that Mele was more cognitively aware of expressing more fully; and c) Mele's developing confidence and willingness to express as she matured and acquired over time.

The first two factors were particularly dependent on how and what the teacher foregrounded in terms of expression by students, using prompts and triggers to stimulate and support Mele to say and express, as well as providing needed input whereby she (and other students) was offered richer uptake and expressive potential.

The duration of Mele's lesson response utterances at Time 2 show her utterances were shorter for 1-2 and 6-8 word utterances (but not for 3-5 word utterances) and longer for utterances from 9-12 words to 21 or more words compared to Time 1 when her utterances were more than 100% longer (Table 22b). Combining duration of utterance and the number of words per utterance data, Mele's quantity of expression increased significantly from Time 1 to Time 2. The duration of utterances to peers reduced overall by 75% from Time 1 to Time 2 and self-talk disappeared completely as Mele's expression in the Time 2 lesson was largely focused on lesson response utterances.

The majority of Mele's lesson response utterances at Time 1 were below clause, simple or expanded clauses, the first two especially indicative of minimally complex and expanded expression (Table 22c). At Time 2, these three clause types reduced in number, with a converse increase in clause complexes and multi-clause utterances with no clause complexes. Thus, at Time 2, Mele's utterances trended towards fewer grammatically simple utterances and more complex utterances. An examination of clause type duration data shows Mele's more complex utterances at Time 2 were greatly extended in length of time as was her overall utterance time (Table 22d). Not unexpectedly, the duration of below clause and simple utterances was more or less the same at Time 1 and Time 2, and expanded clauses reduced by 53% as the number and duration of more complex clause types increased.

The majority of Mele's lesson response utterances at Time 1 contained either no clauses or one clause (Table 22e). While the number of lesson response utterances at Time 2 was seven more than at Time 1, nil clause utterances reduced by 23% and one-clause utterances by 20%. Conversely, with this decrease at Time 2, there was an increase of utterances with clauses, ranging between 3 and 10 clause utterances. For example, the Time 2 extended grammatical expression in these Time 2 examples:

Time 2 example
10.12 *Miss Papa.. said.. We to.. to learn.. She said to her children we're gonna learn about history. Week.. week 3, week ah.. week 5, week 6, week 7, week 8. We are going to learn about history... Palo said, 'I know what history means.'*

Time 2 example
17.14 *...Papa told the children, sitting on the mat, ready to learn..*

Time 2 example
22.52 *...start...Mrs Papa said....Mary MacKillop ..start..started at 2000...the Principal...Sister Paloa...Principal..She was ...She was Josephite sister...The class*

These utterances mirrored the Camera Cameo text told by the teacher designed to offer the students rich content and linguistic expressive input and acquisition potential. The text proved grammatically challenging for Mele as evidenced in the above utterances where she omitted words and word groups. While Mele's utterances were not novel, self-generated ideas and expression, it was significant that she received increased opportunities and scaffolded models, enabling her to express more complex ideas and grammatical constructions. It would appear that Mele's increase in conceptual and grammatical complexity directly related to the teacher's pedagogical construction of the lesson.

Unsupported, Mele would not have been able to express these more complex utterances, and without scaffolded model and supportive opportunities to try out provided complex expressions collaboratively and with a peer, she would have been denied this increase in quality and quantity of expression and acquisition potential. The text uttered by Mele at Time 2 was not solid and embedded uptake, but it was 'on its way' to becoming so. Comparatively, Time 1 did not offer Mele equivalent quality and quantity of opportunity to try out complex ideas and grammatical constructions carefully scaffolded by the teacher and thus acquisition potential was constrained or unavailable. Utterances such as the following said in unison by the students were simply the book text read out loud.

Time 1 example
01:38 *The milk Gobble gobble. The meat. Gobble gobble.*in chorus*
01:47 *The fish. Gobble gobble. The bread. Gobble gobble.*
01:56 *The cake. Gobble gobble. The ice-cream. Gobble gobble.*
02:06 *Oh you greedy cat.*
02:23 *Oh you greedy cat.*

These utterances were not conceptually or grammatically complex, and did not offer Mele quality and quantity of expression and uptake potential in order to expand her expressive resources. On occasions when Mele tried out ideas and expression with a peer, she was reliant on her own quite limited resources, as in these examples:

Time 1 example
19:24 *I have milk .. I have a milk. I have meat. and I have chicken.. and I have cho..chocolate.chocolate..and...and.... a... that's all.*

Time 1 example
24:19 *I.. In the morning, I had weetbix...I.. I brush....*
24:32 *..breakfast*
24:42 *I always like cakes. I always like someone cake.*

At Time 1 the teacher did not provide Mele with the necessary models of more complex expression conceptually and grammatically, nor did she offer her scaffolded and supportive input and output opportunities which would have provided Mele with acquisition and uptake potential.

Duration measures of the number of clauses per utterance expressed by Mele further supports the data and analysis of number of clauses per utterance data (Table 22f). Mele spent more time expressing utterances with few clauses and less time on utterances with more clauses at Time 1, while at Time 2 there was a gradual trend towards more time expressing utterances with 4 to 11 clauses. Overall her expressive time in the Time 2 lesson more than doubled that of Time 1.

Text processes of utterances

A usually occurring combination of processes in Mele's utterances was feedback and informing utterances in response to teacher questioning or prompting (Table 22g). Other utterances combined explain, describe and informing processes. A richly dialogic interchange between teacher and students might use a number of these, either singly or in combination, with students controlling the way more often alongside teacher control of topic and way including a direct response to peer and teacher

questioning or prompting. Both at Time 1 and Time 2, Mele rarely took control of topic and the way, but where she did it occurred mostly in peer and self talk responses. Process analysis of Mele's utterances suggests that while linguistic quality and quantity increases occurred at Time 2 compared to Time 1, she took little control of the way or topic, and that both at Time 1 and Time 2, lessons were not richly interactional and dialogic allowing students and teacher to share control of the way and topic (van Lier, 1998). Peer response utterances at Time 1 when Mele made comment to, informed a peer, asked a question, or talked to herself, were occasions when she took some text control, albeit minimal, as in these examples from Lesson 1 Time 1:

Time 1 examples
08:39 Here comes the cake. Grab that.
24:42 I always like cakes. I always like someone cake.
26:50 Oh.cool.

Peer response and self talk utterances

At Time 1, 20.6% of Mele's utterances were to peer and 20.6 % was self talk (Table 22a). Mele expressed fewer utterances to her peer at Time 2 and no self talk utterances, with Mele focusing intensely on uptake and expression of the Camera Cameo text. The majority of utterances to peer and self at Time 1(12 of each) were 1-2 words only, with 4 peer and 2 self talk utterances of between 6 and 12 words. Thus, utterances to peer and self were generally not detailed or richly expressive. At Time 2, of the six peer response utterances, five were between 1 to 5 words in length, and one was 9-12 words.

Mele's utterances to her peer at Time 1 were primarily minimal clauses or below clauses, simple and minimal grammatically (Table 22c). At Time 2, Mele's utterances to peer markedly reduced as did the number of below clause and minimal clause utterances. Self talk at Time 1 comprised largely of below clause utterances (14 out of a total of 21 utterances). There were three multi-clause utterances as in these examples: '*Here comes the cake. Grab that*.' '*Ready. Set. Go.'*

Relatedness of utterance

Mele's lesson response utterances at Time 1 and Time 2 were primarily directly related to the topic and lesson in hand (Table 22h). The majority of Time 1 peer talk response utterances were somewhat related or unrelated, while at Time 2 Mele's reduced peer response utterances were evenly spread between directly related, somewhat related and unrelated. Examples of peer utterances such as '*Hey, she said turn to your buddy*' and *'Are you thinking?'* illustrate Mele's tendency to monitor and even direct peer behaviour. Self talk which occurred only at Time 1 comprised mostly of directly or somewhat related utterances as in this example utterance about the main character in the book the class was discussing and reading: '*Oh yeah.. I'm trying to catch her.'* At Time 2, Mele maintained her focus most of the time, although a few minor distractions were evident. Her utterances were almost all directly related, crucially influenced it would seem by the developing metacognitive awareness about

learning, saying and participating in the class, and attention by the teacher to engaging and involving her students.

Confidence of utterance

Mele's confidence levels decreased somewhat at Time 2 compared to Time 1 as she endeavoured to express the teacher's prepared Camera Cameo text (Table 22i). She found this quite challenging but was interested in the text and process, and persisted in trying to express utterances that were at her cutting edge of expression. Because at Time 1 there was little expressive demand on Mele in terms of complexity and length, as is evident from clause analysis, Mele was less hesitant and more confident in her expression. She was not 'pushed' linguistically and cognitively to the same extent as at Time2.

Summary

At Time 1 Mele expressed almost double the number of utterances than at Time 2, however, these utterances were shorter in terms of word count and duration, and less complex grammatically than at Time 2. There was a general trend at Time 2 towards a reduction in short and simple utterances and an increase in the number and length of grammatically complex utterances. It would appear that the quality and quantity of Mele's expression had shifted and increased between Time 1 and Time 2. Analysis of Mele's utterances in these respects suggests that the increase had been crucially influenced by a change in the interactional and discourse patterning occurring in the classroom, identifiable in Lesson 1 at Time 1 with Lesson 3 at Time 2 analyses.

In the Time 2 lesson there was an expectation and heightened awareness both by Mele and her teacher about how quality and quantity of expression could be constructed and that each had her part to play in achieving this. The teacher made explicit the need for expanded expression and provided Mele and the other students a continuing model of such text utterances. She then explicitly pursued a lesson structure that offered Mele the opportunity to try out more complex and longer text utterances both collaboratively with her teacher and other students, and on her own, over and over. While these text utterances were somewhat challenging to Mele, she was focused, wanting to try saying as much of the text as possible along with the teacher and other students, and by herself. She became more hesitant as a result of being pushed linguistically and cognitively but still managed to express increasingly fluently as the more complex text expression was recycled and there was greater uptake. .

In contrast, the Time 1 lesson was dominated by teacher questioning and minimal responses by students, individuals being 'chosen' by the teacher to answer, students being prompted to recall parts of the book text, and a focus on grammar, namely, explaining what a noun is and finding examples in the book text. As a result, the quality and quantity of Mele's utterances were constrained and minimal.

In both Time 1 and Time 2 lessons, Mele's utterances were predominantly feedback and informing processes in response to teacher questioning and recall expectations in the Time 1 lesson, and

prompting and recall expectations in the Time 2 lesson. While significant shifts had been made by the teacher to expand the quality and quantity of Mele's (and all students') expression from Time 1 to Time 2, the interactional and discourse patterns at Time 2 were still not richly dialogic at Time 2 in that opportunities for students to take greater control of the way and topic had not been opened up to any great extent. While there was a developing culture and inclusion of students' spontaneous expressing, in Mele's case opportunities remained constrained both by the lesson structure and lack of confidence to develop her oral text.

Lesson analysis: PALO 1 and Time 2 (School B)

Overall context:

Palo was one of the youngest students in his Year 1 and 2 class at School B. He was both supported and challenged by being in this multi-level classroom. At Time 1, he was reserved and quiet in class, although confident with peers of similar age and stage. When questioned when interacting with the teacher, he was hesitant and diffident but prepared to attempt a response. The content and text in this lesson was complex and he was often 'in his own world', not maintaining concentration on the lesson and unable to sustain his focus. He showed signs of boredom and an inability to understand, this leading to learning distraction.

At Time 2, Palo was intensely focused throughout the lesson, the lesson being well within his zone of proximal development in content and expression. He tried to read the word group strips on his own and follow other students reading these. As an emerging reader, there was sufficient support for him to match words with meaning. He was prepared to attempt text expression in class group together with others and on his own, and in partner and teacher share situations, and was engaged and participatory throughout. The Time 1 and Time 2 lesson stages are provided in Appendix 5.

Complexity and fluency analysis

Palo expressed a total of 30 utterances during the Time 1 lesson, 30 lesson response utterances, six peer response utterances and one self-talk utterance (Table 23a). At Time 2, the number of lesson response utterances expressed by Palo increased only slightly to 33, with no peer response utterances even though he was twice offered buddy talk opportunities in the 33.16 minute lesson. At Time 1, there was only one self-talk utterance while at Time 2, Palo more frequently expressed self-talk utterances as he tried out text on offer from teacher or peers or print.

Table 23.
Lesson analysis – Palo - Comparison between Time 1 Lesson 3 and Time 2 Lesson 2

Table 23a.
Length of utterance (number of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	8	14	1	-	-	5
3-5	13	8	3	-	1	6
6-8	6	1	2	-	-	1
9-12	1	2	-	-	-	-
13-15	-	2	-	-	-	-
16-20	1	2	-	-	-	-
21 + longer	1	4	-	-	-	-
<Any Modifier>	30	33	6	-	1	12

Table 23b.
Length of utterance (duration of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	00:13.2	00:13.6	00:01.6	-	-	00:09.1
3-5	00:30.3	00:20.1	00:05.0	-	00:00.3	00:12.1
6-8	00:21.9	00:03.8	00:04.1	-	-	00:08.2
9-12	00:07.4	00:28.7	-	-	-	-
13-15	-	00:29.9	-	-	-	-
16-20	00:10.5	00:42.0	-	-	-	-
21 + longer	00:17.2	02:03.5	-	-	-	-
<Any Modifier>	01:40.4	04:21.5	00:10.7	-	00:00.3	00:29.5

Table 23c.
Clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 1 PEER TLK	Time 2 SELF TLK	Time 2 SELF TLK
below clause	11	14	1	-	1	5
minimal clause	16	7	4	-	-	3
expanded clause	-	4	1	-	-	3
clause complex	1	4	-	-	-	-
multi clauses (complex clauses)	1	3	-	-	-	-
multi clauses	1	1	-	-	-	1
<Any Modifier>	30	33	6	-	1	12

Table 23d.
Duration of clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	00:28.0	00:14.0	00:01.6	-	00:00.3	00:08.0
minimal clause	00:48.9	00:18.5	00:07.0	-	-	00:05.5
expanded clause	-	00:32.0	00:02.1	-	-	00:07.7
clause complex	00:04.7	01:23.6	-	-	-	-
multi clauses (complex clauses)	00:17.2	01:15.5	-	-	-	-
multi clauses	00:01.6	00:38.0	-	-	-	00:08.2
<Any Modifier>	01:40.4	04:21.5	00:10.7	-	00:00.3	00:29.5

Table 23e.
Number of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	10	15	1	-	1	5
1 cl	16	8	5	-	-	6
2 cl	2	5	-	-	-	1
3cl	1	3	-	-	-	-
4cl	-	1	-	-	-	-
5cl	-	-	-	-	-	-
6cl	-	-	-	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	29	32	6	-	1	12

Table 23f.
Duration of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	00:26.7	00:18.8	00:01.6	-	00:00.3	00:08.0
1 cl	00:48.9	00:32.6	00:09.1	-	-	00:13.2
2 cl	00:06.3	01:41.2	-	-	-	00:08.2
3cl	00:17.2	01:16.1	-	-	-	-
4cl	-	00:32.4	-	-	-	-
5cl	-	-	-	-	-	-
6cl	-	-	-	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	01:39.1	04:21.0	00:10.7	-	00:00.3	00:29.5

Table 23g.
Text processes per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
question	2	-	2	-	-	-
explain	16	1	3	-	-	-
prompt	-	-	1	-	-	-
feedback	24	33	1	-	-	-
instruct	-	-	-	-	-	-
comment	-	-	1	-	-	8
direct	-	-	1	-	-	-
praise	-	-	-	-	-	-
criticise	-	-	-	-	-	-
thank	-	-	-	-	-	-
describe	-	-	-	-	-	-
inform	27	32	3	-	1	12
confirm	-	-	-	-	-	-
musing	-	-	-	-	-	-
<Any Modifier>	30	33	6	-	1	12

Table 23h.
Relatedness of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
directly related - + ++	27	33	4	-	1	12
somewhat related +	3	-	1	-	-	-
unrelated	-	-	1	-	-	-
rel-unrel	-	-	-	-	-	-
<Any Modifier>	30	33	6	-	1	12

Table 23i.
Confidence of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
minimally hesitant	6	23	-	-	-	7
inconfident - hestitant	-	4	-	-	-	-
confident	24	6	6	-	1	5
<Any Modifier>	30	33	6	-	1	12

His lesson response utterances in the Time 1 lesson largely comprised of utterances 1-5 words in length, a further 6 utterances of 6-8 words, two between 9-20 words, and one with more than 21 words. The following examples were either direct responses to the teacher when she was with Palo while other students expressed with a buddy, or when the teacher asked Palo to express in a whole class situation.

Time 1 example
02:20 Each other.
02:23 Be our friend.
02:27 A friend.
02:57 Right choices.
05:20 A role model.
05:28 A role model.. is.. to help the right choices.

Time 1 example
10:35 My sister and my brother and my mum and my dad and my nana and my papa and my sister.

Time 1 example
23:14 Um.. my mum. Of my mum. ...and my mum.. always cook me with my food and I.. sit in a chair....I was waiting for my food to ...with my mum.

At Time 2, the majority of Palo's utterances were also between 1-5 words in length as at Time 1, however, there was a wider range of longer utterances of 9-20 words, and four 21+ word utterances. The latter occurred when Palo expressed text prompted and scaffolded by the teacher as she worked with him on his own, and significantly for Palo, when he expressed independently to the teacher and to the whole class group towards the end of the lesson time. The first example is when Palo was scaffolded by the teacher to express a text related to the picture and word group in focus.

Time 2 example
13:01 the dog.. s...s.....said..
13:08 right.. paw got put.. got stuck.. two wood pieces.
13:28 bridge

The following two Time 2 examples are when a) Palo expressed independently following teacher scaffolding and support, and b) when he expressed without support or prompting in the class group.

Time 2 example
14:21 *the dog.. and the goat and the cow.. The cow got stuck in the bridge.. and the..*
14:43 *the dog was in their way*

Time 2 example
15.16 *The dog and the goat and the cow and the farmers. The farmers and the cow and the goat, the dog... They all got stuck in the bridge and the bridge got half woof pieces.*

Time 2 example
24.28 *The cow and the farmers.. They're got stuck and they were got a.... The cow got stuck with the bridge..In the bridge got.. got.. because ....the... dog..*

The six peer response utterances Palo expressed at Time 1 were short in length as Palo directed his buddy partner in turn-taking, as in the following example of five consecutive utterances:

Time 1 example
01:25 *What is a role model?*
01:31 *What is a role model means?*
01:37 *No, after you then my turn.*
01:41 *'Cause I'm the oldest.*
01:51 *Ah.. a role model means.*

While Palo was twice in a buddy share situation in the Time 2 lesson with an opportunity to express peer response utterances, both times the teacher was also present so that rather than Palo trying out his newly acquired expressive potential independent of the teacher, he was put into a situation of responding as the teacher took over increasing control. The following example was when Palo was with two older peers who had the capability to scaffold him in lieu of the teacher. These two utterances were within Palo's ZPD of expression in terms of length, grammatical complexity and fluency.

Time 2 example
32:27 *the farmer and the cow.. the goat.. the cow got stuck in the bridge and the bridge got half with.. and the goat...*
32:56 *bridge. and did.. did not.. think of a.. idea to.. solve the problem*

The total duration of lesson response utterances in the 31.59 minute Time 1 lesson was 1.40 minutes compared to 4.22 minutes in the 33.16 Time 2 lesson (Table 23b). Thus, while the number of utterances at Time 2 had not increased significantly from Time 1, the duration of Palo's utterances had increased significantly, indicative of Palo's increased expressive activity. At Time 2, with the exception of the duration of 6-8 word utterances, there was a gradual increase in expressive time in line with an increase in word number per utterance. This was not the case at Time 1, where the quantity of Palo's utterances in terms of expressive time was longest for utterances 3-8 words in length. Peer and self talk utterances in both lessons were of minimal duration, comprising utterances no longer than 8 words. Overall, then, the quantity of Palo's utterances increased markedly at Time 2 in terms of expressive time, thus offering Palo increased opportunity to try out his growing expressive competency.

At Time 1, Palo's lesson response utterances consisted almost totally of below clause or minimal clause expressions (Table 23c) as in these examples when Palo was receiving direct attention from the teacher.

Time 1 example
10:48 *Two.*
11:04 *Francis.*
11:08 *Two.*
11:14 *One, two, free.*

Time 1 example
20:47 *My mum.*
20:57 *She give me a cookie.*
21:02 *Give me a cookie.*
21:08 *She.. my mum gave me my.. chocolate.*

In contrast, at Time 2, while there were also a high number of below clause and minimal clause utterances (21 in all), Palo also expressed 12 utterances of greater grammatical complexity as measured by clause type – expanded clauses, clause complexes and multi-clauses. Initially in the lesson, when the teacher selected students to independently express ideas and text related to a picture taken from the book *The poor sore paw*, drawing on their already established expressive competency from the previous lesson, Palo was an engaged but silent participant. He was not selected to say and might well have struggled. However, it offered him a number of opportunities to receive text models from his more fluent and expressively competent peers. Ten minutes into the lesson, Palo began to express more frequently, initially grammatically simple utterances. As the lesson progressed, with increased opportunities to try out grammatically more complex expressions supported by careful scaffolding by the teacher, Palo was increasingly able to express these with fluency and accuracy. He was gradually pushed to express at the cutting edge of his grammatical and expressive competency, formulating utterances that drew largely on the 'known' text on offer but which were structured by Palo. This example is from the Time 2 lesson illustrating this gradual expressive enablement:

Time 2 example
01:39 *school*
01:39 *(class working on pictures, labelling etc)*
10:50 *Stuck in the bridge*
10:57 *stuck*
11:19 *stuck*
11:24 *stuck in the bridge*
11:33 *Stuck in the bridge.*
11:39 *Stuck*
12:11 *the cow..*
12:18 *...dog.*
14:21 *the dog.. and the goat and the cow.. The cow got stuck in the bridge.. and the..*
14:43 *the dog was in their way*
14:54 *other.. side.. bridge*
15:16 *The dog and the goat and the cow and the farmers. The farmers and the cow and the goat, the dog... They all got stuck in the bridge and the bridge got half woof pieces.*
15:51 *dog paw..was stuck...and they and the goat..the cow...k...think of the..they...cou...solve....problem..*

Overall, the data provides evidence that the quality of Palo's utterances had increased along with the extent of his expression.

Self-talk utterances at Time 2 included a number of grammatically more complex utterances – namely three expanded clauses and one multi-clause utterance (Table 23c). The rest were comprised of below clause and minimal clause utterances. Self-talk utterances occurred particularly when Palo was trying to read the word group strips that were the trigger for the construction of detailed expression related to the selected picture. In the Time 1 lesson there was also reading involved, however, Palo simply mumbled along with the other students, unable to read the words and not receiving needed scaffolding to do so. In contrast, the word group strip recognition and reading in the Time 2 lesson was carefully scaffolded so that students of Palo's reading competency could gradually recognise and comprehend the written text.

At Time 1, Palo's expression was predominantly zero or one clause utterances (Table 22e), determined primarily by the unscaffolded nature of potentially available expressive text, the IRE pattern dominant in the teacher's exchanges with Palo, and the dominance of teacher talk throughout the lesson. At Time 2, many of Palo's longer and more complex utterances comprised of extended noun groups and circumstantial adverbials of place, with few clauses, reflecting the number of characters in the story, *The poor sore paw.* So although clause numbers were low per utterance, the grammatical structure and density of his utterances placed a considerable grammatical demand on him. For example, these utterances:

Time 2 example
14:21 *the dog.. and the goat and the cow.. The cow got stuck in the bridge.. and the..*
14:43 *the dog was in their way*
14:54 *other.. side.. bridge*
15:16 *The dog and the goat and the cow and the farmers. The farmers and the cow and the goat, the dog... They all got stuck in the bridge and the bridge got half woof pieces.*

Time 2 example
24:28 *The cow and the farmers.. They're got stuck and they were got a.... The cow got stuck with the bridge.. In the bridge got.. got.. because ....the... dog..*
25:08 *The dog's... was pawed.. stuck.. in the two..two pieces of wood and the farmers couldn't.. walk.. through it.. to home.. his farmer*

Palo's expanded Time 2 clause and clause complex utterances were longest in duration for similar reasons to the clause utterances analysis above (Table 23f). At Time 1, minimal clause type utterances were longest in duration because of the number of these utterances compared to the fewer number of other clause type utterances, or the generally unsustained nature of his below clause utterances.

Text processes of utterances

The text processes of Palo's lesson response utterances at Time 1 and Time 2 were predominantly feedback and informing processes (Table 23g). At Time 1, Palo's lesson response utterances were primarily in direct response to the teacher questioning him, as in this utterance exchange between Palo and his teacher:

Time 1 example

	Teacher utterances	Palo's utterances
20:54	*Is it mum? Is it dad? Is it grandma?*	
		Um, my role model.. I have my mum.
20:59	*Your mum. Why do you think mum is your role model? I'm coming to you Jasaiya.*	
		My mum.
21:04	*Why do you think mum is your role model? What does she do for you?*	
		She give me a cookie.
21:12	*She..?*	
		She give me a cookie.
21:17	*She gives you cookies. What else? What else does mum do for you?*	
		She.. my mum gave me my.. chocolate.
21:27	*She gives you chocolates. Okay. What else does ....she does she looks after you when you are sick? Yes. So say that my mum looks after me.*	
		My mum looks after me when I'm sick.
21:43	*What else does mum do for you? Anything else?*	

At Time 2, the structure and process of the lesson was such that Palo was expressing informing utterances triggered by the picture linked to text available to him from peers and teacher. The teacher prompted Palo to express rather than engaging in typical IRE patterns of question and answer exchanges with Palo as in the Time 1 lesson and so Palo's utterances were both informational in terms of the relevant text as well as offering feedback to the teacher in response to prompting. At no point in either lesson did Palo comment, question, describe, direct or explain spontaneously, expressing responsively rather than initiating. This was a reflection of the lesson structure, low in dialogic exchanges, and Palo's quiet and reserved personality and learning orientation in whole class or teacher present situations.

At Time 1, when Palo expressed a number of peer response utterances, a wider of range of text processes came into play as he engaged in typical exchanges between 5 and 6 year olds in an unsupervised situation.

Relatedness of utterance

Almost all Palo's utterances at Time 1 and Time 2 were directly related to the topic and lesson in hand (Table 23h), reflecting his general attitude and orientation towards focusing as best he could, and that the lesson was strictly controlled by the teacher providing little opportunity for students and Palo to divert or take control of topic or the way.

Confidence of utterance

At Time 1, because most of Palo's lesson response utterances were of minimal length and complexity, he was generally fluent and confident with his utterance, albeit reserved in his demeanour (Table 23i). The less hesitant utterances occurred when he was in focus with the teacher and being questioned or expected to say in the whole group situation. At Time 2, a greater number of his utterances were minimally hesitant or less fluent as he endeavoured to express longer and more complex text in response to teacher prompting and scaffolding, and when he was selected to independently express in

the whole class situation. He was never highly fluent and confident in expressing what for him was cognitively as well as linguistically demanding text and expression. Predictably, his peer response utterances were confident and fluent, and his self-talk a mixture of more or less hesitant and fluent utterances as he read with increasing confidence the word group strips which comprised most of his self-talk utterances.

Silences

In the Time 1 lesson, Palo had extended periods of silence through the lesson, for example, between 6.27 and 9.20, 11.17 and 16.36, 16.36 and 20.17, 26.22 and 31.57 minutes into the lesson. At Time 2, apart from the initial silent period early on in the lesson when selected students were expressing ideas and text related to the picture in focus, Palo was actively expressive at frequent intervals throughout the rest of the lesson. The earlier silent time was a supportive opportunity for Palo to hear the generally fluent and well-constructed expression of more capable peers, offering him acquisition potential (Ellis, 1994; Krashen, 1982/2002).

Summary

The quantity and quality of Palo's expression increased significantly in the Time 2 lesson compared to the Time 1 lesson. Palo's overall expression at Time 2 greatly increased in overall duration despite the fact that he expressed only slightly more utterances than at Time 1. In terms of word number and duration of utterance, Palo expressed quantifiably more at Time 2. Similarly, Palo's utterances at Time 2 increased in quality as measured by clause type as he actively engaged with and increasingly expressed longer and more complex utterances. These utterances were shaped by combining the affordances from his peers and teacher with his own current grammatical competency. He was pushed towards his cutting edge in terms of grammatical and sustained expression. At Time 1, the interactional and discourse conditions and patterns positioned Palo into frequent and long periods of silence or responding to teacher in question-answer utterance exchanges.

The change in the quality and quantity of Palo's expression between Time and Time 2 was largely due to differences in lesson structure. The Time 1 lesson was dominated by teacher talk, question and answer sequencing, minimally available scaffolded text input, and few opportunities for oral trying out. In contrast, the Time 2 lesson was staged so that students such as Palo received peer and teacher support, and were offered expressive potential throughout the lesson, so he was scaffolded to push him towards the cutting edge of his expressive competency.

There were no opportunities on offer in either of the two lessons for Palo to express spontaneously, lead the way and topic, or engage in dynamic dialogic exchanges with peer or teacher. In this regard, Palo's expressive capability and potential was never fully revealed or opened up.

Lesson analysis: ARA Time 1 and Time 2 (School A)

Overall context

Ara was one of the youngest students in her new entrant-Year 1 class at School A. She scored well above the other eleven case study students in vocabulary as measured by BPVS, was verbally confident and fluent, expressively quick and capable. Her teacher identified her as highly intelligent yet exhibiting some immature behaviours in particular situations and contexts. Her quick wittedness and alertness to whatever was going on around her meant she sometimes became bossy, interfering with and a little deprecating to her peers. Ara was thirsty for stimulating content, interaction and discourse. At Time 1 she was working independently of the teacher most of the lesson and to satisfy her hunger to interact she frequently indulged in self talk when working on her own and sought out others in class in an attempt to engage by talking or playing around in some form. There was evidence of boredom – yawning, annoying peers, going to toilet and other attention seeking behaviours. At Time 2, Ara exhibited a mixture of intense focus with topic and task of lesson, and attention to a variety of matters and incidences not really her business. On some occasions she was quite scathing towards peers, but always respectful to teacher, interacting freely with her. Most times she spoke in a loud voice, was responsively quick and often outstripped her peers cognitively and linguistically. She became tired towards the end of the lesson and a little more distracted.

Complexity and fluency analysis

Ara expressed a total of 85 utterances in the Time 1 lesson, the majority of these peer response (41) and self talk (32) utterances (Table 24a).

Table 24.
Lesson analysis – Ara – Comparison between Time 1 Lesson 2 and Time 2 Lesson 3

Table 24a.
Length of utterance (number of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	3	75	9	7	7	5
3-5	5	45	18	8	16	7
6-8	2	16	7	3	7	2
9-12	-	7	5	4	1	1
13-15	2	2	-	-	-	1
16-20	-	3	2	-	-	-
21 + longer	-	1	-	-	1	-
<Any Modifier>	12	149	41	22	32	16

Table 24b.
Length of utterance (duration of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	00:03.0	01:31.9	00:08.3	00:12.9	00:10.3	00:04.7
3-5	00:08.1	01:52.6	00:27.2	00:18.9	00:26.4	00:12.7
6-8	00:07.9	01:04.7	00:19.4	00:08.7	00:23.5	00:04.5
9-12	-	00:58.4	00:21.4	00:11.4	00:05.4	00:03.6
13-15	00:12.9	00:20.3	-	-	-	00:04.1
16-20	-	00:25.6	00:15.6	-	-	-
21 + longer	-	00:38.1	-	-	00:19.4	-
<Any Modifier>	00:31.9	06:51.6	01:31.9	00:51.9	01:25.0	00:29.6

Table 24c.
Clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	2	98	6	6	12	6
minimal clause	4	28	17	9	8	4
expanded clause	2	8	6	3	2	3
clause complex	2	7	5	1	4	1
multi clauses (complex clauses)	1	2	-	1	-	-
multi clauses	1	6	7	2	6	2
<Any Modifier>	12	149	41	22	32	16

Table 24d.

Number of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	2	91	6	6	11	6
1 cl	6	38	21	12	11	7
2 cl	2	11	9	1	8	2
3cl	1	3	2	1	2	1
4cl	1	1	1	1	-	-
5cl	-	-	-	-	-	-
6cl	-	-	1	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	-	-	-	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	1	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	12	144	40	22	32	16

Table 24e.

Text processes per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
question	3	3	10	2	3	1
explain	3	22	6	1	2	1
prompt	3	5	3	2	-	-
feedback	1	102	6	5	-	-
instruct	-	-	-	-	-	-
comment	3	20	10	9	27	14
direct	1	4	3	7	1	-
praise	-	-	-	-	-	-
criticise	-	-	-	-	-	-
thank	-	-	-	-	-	-
describe	1	1	-	-	2	-
inform	3	128	27	15	5	7
confirm	1	25	-	-	1	-
musing	-	-	-	-	11	-
<Any Modifier>	12	149	41	22	32	16

Table 24f.
Relatedness of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
directly related - + ++	9	137	17	4	18	10
somewhat related +	1	8	16	7	8	4
unrelated	2	4	8	11	6	2
rel-unrel	-	-	-	-	-	-
<Any Modifier>	12	149	41	22	32	16

Table 24g.
Confidence of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
minimally hesitant	-	7	-	-	1	1
inconfident - hestitant	-	1	-	-	-	-
confident	12	141	41	22	31	15
<Any Modifier>	12	149	41	22	32	16

At Time 1 there were very few lesson response utterances as most of the lesson time Ara was working independently of the teacher in two rotations, finishing a piece of writing then colouring in, followed by use of the listening post. Other than a brief time at the beginning of the lesson, Ara did not directly work with the teacher and her peers at any time throughout the lesson. The lesson structure impacted significantly on Ara's interactional and discourse patterns and potential, and the quality and quantity of her utterances throughout the 27.44 minutes of videoed lesson time. At Time 2, Ara expressed 187 utterances, 149 of which were lesson response utterances, with a greatly reduced number of peer and self-talk utterances in proportion to the total (Table 24a).

At Time 1, with Ara working on her own at a table in the first rotation, and with earphones on and listening to a taped book at the listening post in the second rotation, opportunities for her to interact and express were potentially limited. However, Ara had a strong orientation towards interacting and talking with others, and so filled this interactional gap with peer response utterances that were often not directly related to lesson content and with self-talk. It was her way of satisfying her need cognitively and linguistically. Transcript excerpts from the Time 1 lesson 1 illustrate her 'filling the spaces' in this way. The first example was when she was writing at the table for the first rotation:

Time 1 example
03:38 Now. What do I do? (writing with focus)
04:06 muttering to self
04:11 Yes
04:19 It's ..'a'....'t'....
05:09 Hm! thoughtful
05:19 Now..now, now, now
05:27 (muttering - not comprehensible)
07:38 'Bad line'
07:40 This is enough
08:07 (incomprehensible) .....down and out and...and up'....

08:13 Isn't it a st..w...?????
08:22 And bump, bump, bump.....bump, bump, bumo, bump, bump, bump ...bump, bump, bump.....And, um...this is the mats?...And this is the shoes they did...There the shoes...
08:45 and another shoes

The second example was when Ara was at the listening post with another peer, this time 'filling the spaces' by commenting to her peer and playing around with the listening post equipment, and calling the teacher's attention:

Time 1 example
19:14 Hee hee, hee (laughs to peer as puts on earphones) I'll turn it up ....even louder...up..
19:38 Ms G..the music's stopped
19:44 It's on now..I Oh, it's on - I can hear it..Bp, bp bp..(sings along to music) Oh, why's it not on? It's not on, you know?
19:54 Huh?
20:06 Can y' hear?
20:09 I just that onto mine (pulls out plug at station - peer response: That's mine)
20:13 This is mine
20:22 Is it on?
20:27 What happened? I don't know what happened.
20:35 Uh..uh..uh..uh..I feel really tired (yawns - possibly bored)
20:42 Ms G (calls out to teacher)..the music is coming not on....

At Time 2, Ara was working in a maths group with 6-8 peers and the teacher, situationally and contextually conducive to interaction and expression. As a result, she expressed considerably more lesson response utterances, with self-talk and peer response 'filling the spaces' utterances greatly reduced.

Of the few lesson response utterances at Time 1, most were between 1-8 words in length, with two utterances 13-15 words in length (Table 24b), both of which were not directly related to the lesson content.

Time 1 examples
14:50 (Goes over to teacher)..Ms G..Ms G....some...Ms G...Somey one's coming in that....They're gone out.
16:14 Look Ms G (Ms G says to just wait) I forgot to colour in the sky. That's the sky. (Shows teacher her colouring - no direct response from teacher)

At Time 2, the majority of Ara's lesson response utterances were between 1-8 words in length and distributed across the 30 minutes of videoed lesson. She also expressed 14 longer utterances between 9 and 21+ words. Overall then, Ara expressed considerably more lesson response words throughout this lesson than in the Time 1 lesson.

The majority of Ara's 41 peer response utterances were between 1-5 words in length, with five peer response utterances of 9-12 words and two 16-20 word utterances. Her self-talk utterances were also primarily short, most 3-5 words in length, with seven utterances 6-8 words long, one 9-12 words long, and one over 21 words as in *'It's on now..I Oh, it's on - I can hear it..Bp, bp bp... Oh, why's it not on? It's not on, you know?'* At Time 1, the extent of Ara's combined utterances was extremely limited in terms of word count and frequency compared to Time 2.

Duration data of words per utterance offers further evidence that the time spent by Ara expressing at Time 1 was minimal compared to Time 2 (Table 24b). Especially striking was the increased lesson

response time at Time 2 compared to Time 1, from 0.32 minutes of the 27.44 minute videoed lesson at Time 1 to 6.52 minutes of the 30.03 minute videoed lesson at Time 2. The number of peer response and self-talk utterances was proportionately large compared to the total number of utterances, yet amounted to only 2.56 minutes of time.

Clause type analysis as an indicator of the grammatical complexity of Ara's utterances at Time 1 and Time 2 indicated that the low number of lesson response utterances at Time 1 was distributed quite evenly across the range of clause types (Table 24c). These utterances occurred at various points in the lesson but mostly when Ara sought teacher attention, as in these non-consecutive examples:

Time 1 example
14:50 Ms G.Ms G....some...Ms G...Somey one's coming in that....They're gone out
19:38 Ms G..the music's stopped
20:42 Ms G (calls out to teacher)..the music is coming not on....
21:09 Ms G...The radio turned off.

Peer response utterances were primarily minimal clauses, as in these Time 1 lesson examples:

Time 1 examples
17:08 Do wan'a read?
17:10 Do wan'a read?
17:11 I'm finished
22:35 See I told you
22:38 This is mine
22:55 He..he!
22:59 I took out mine.

The majority of self-talk utterances at Time 1 are below clause or minimal clauses, however, there were also six multi-clause utterances. Examples illustrate that these multi-clause utterances were not lexically rich, nor structurally and grammatically complex.

Time 1 examples
08:22 And bump, bump, bump.....bump, bump, bumo, bump, bump, bump ...bump, bump, bump.....And, um...this is the mats?...And this is the shoes they did...There the shoes...
09:19 I'm do ...like doing my thingy and...I've finished my writing so I'm doing the castle

At Time 1, all Ara's utterances were generated from her own expressive resource base, with no scaffolded and extending expressive text available to her from her teacher or peers. Potentially, the listening post text could have offered her some but her orientation was such that she did not tap into what might have been available.

At Time 2, the majority of Ara's utterances were below clause and minimal clauses, so in that regard Ara was not pushed linguistically. As the CombiList, oral assessment analysis and vocabulary data indicated, Ara was expressively competent relative to her peers and would have been able to express quite complex utterances if pushed grammatically. Expressive models and scaffolding at her grammatical cutting edge were generally not explicitly available to her in the lesson, hence the quality of her expression in terms of clause type was under-potentialised. There were 7 expanded clauses, 8 clause complexes and two multi-clause utterances with clause complexes, indicating on a number of occasions Ara expressed more complex utterances, however, again these were drawn from her

existing expressive resources and did not push her grammatically nor offer her acquisition potential. These non-consecutive utterances are examples of this:

Time 2 examples
10:24 Miss.. you should.. you should cut it from the middle.. and then slice.. slice it in half.
14:30 Yeah, that's what I was gonna to say...Hmmm.
17:06 Well, cause it's on sale at Pak N' Save
19:57 It.. Remember the last time we wanted the both chocolates? Now.. you've got four box of Cadbury chocolates.

Analysis of the number of clauses per utterances (Table 24d) offers further evidence that at Time 1 and Time 2 the majority of Ara's expression was not grammatically extended. The most clauses were in the Time 1 peer response utterance of, *'It's on now..I Oh, it's on - I can hear it..Bp, bp bp*..(singing along to music she's hearing) *Oh, why's it not on? It's not on, you know?* - in terms of clause type, a grammatically simple utterance.

Text processes of utterances

At Time 1, the text processes of Ara's lesson response utterances spanned the full range of process types (Table 24e). Peer response text processes reflected the interactional exchanges she had with her peers, Ara often feeling the need to comment on what they, others or she were doing, or inform them in some way, as in this example:

Time 1 example
22:22 This is Pinnochio
22:25 This is Pinnochio..It's Pinnochio
22:35 See I told you
22:38 This is mine

Ara's self talk text processes comprised primarily of comments to herself, saying out loud what she was privately thinking, as in this example:

Time 1 example
11:00 Hm...Now what do I do?
11:20 Now!
11:25 There's man and...There's a circle...There's (drawing - selects new pencil)
11:40 What ye...
11:57 Now, what do I do else now? (thinks)

Because the Time 1 lesson structure left Ara in large part to her own devices and on her own, Ara commented, informed and mused to herself frequently throughout the lesson. Unlike other case study students, Ara's self talk was not trying out text and expressions as a step to acquisition, but as the utterance processes reflect, as a way of satisfying her need to talk and interact.

At Time 2, the majority of Ara's lesson response utterances were feedback and inform processes. However, the lesson topic and process also opened up opportunities for Ara to explain and confirm Maths hypotheses, thinking and description. Peer response utterances ranged across the process type, the majority informing, most of which were not directly related to the Maths topic and task in hand, indicative of Ara's tendency to comment regularly on matters related to others, as in this example:

Time 2 example
06:41 Ant, we're not gonna do our work.
06:53 Oh and then Harl has to go to jail.
06:59 Yeah, you just stay there like for 20 days or something.

Ara's self-talk utterances at Time 2 comprised mostly sideline comments about what she knew, what the teacher was explaining, or about surrounding materials or events, as in these utterances:

Time 2 examples
10:58 I's right
13:15 Oh my God. Look at that man.. and then..
15:01 I like bananas.They're yummy.
15:05 I've got little bananas....

As at Time 1, her self-talk utterances reflected her need to communicate her inner thoughts out loud for others to hear.

Relatedness of utterance

Of Ara's 41 peer response and 32 self-talk utterances at Time 1 (Table 24f), a significant proportion were only somewhat related or unrelated, again indicative of her tendency to flick in and out of the lesson content to make comment about various sideline happenings and thoughts. These reduced in number at Time 2, but did not disappear completely. At Time 2, the majority of Ara's utterances were directly related to the maths solving problem and topic in focus. The teacher guided and scaffolded the students in such a way that Ara was orientated towards expressing directly related utterances and given fewer opportunities to make unrelated or peripherally related utterances.

Confidence of utterance

Ara was a confident learner, aware of her own capability and quick to respond. Her quickness of mind and alertness, and her extrovert personality meant that almost all her utterances, whether lesson, peer response or self talk, were expressed confidently and fluently (Table 24g). On the few occasions in Time 2 she was minimally hesitant when the group were counting out or she was grappling to describe and explain the Maths problem in focus. She was pushed cognitively and linguistically not as a result of scaffolded input but rather as a result of the teacher deliberately orientating the lesson to challenge the students mathematically, pushing Ara to dig deep into her own cognitive and linguistic resources.

The following examples are ones where Ara was more hesitant as she sought to express her mathematical thinking:

Time 2 examples
26:51 It's five..It's um um twenty
26:58 Forty
25:22 two, 4, 6, 8, 10, 12, 14, 16, 18 20
25:36 Like on my half.
25:40 Yeah.
25:42 two, 4, 6, 8, 10, 12, 13, ...18 20. Like the same half 'v my half.
25:59 And there's ..half..and there's five

Summary

Ara was confident in her verbal exchanges and interactions with teacher and peers at both Time 1 and Time 2. However, her expressive potential was never fully optimised at either time, particularly at Time 1, determined primarily by the lesson structure and process. Overall, at both Time 1 and Time 2, Ara's utterances were limited in word length and clause number, with the majority of her utterances below clause or minimal clauses. At Time 1, the type and frequency of Ara's utterances and expression throughout the lesson were due largely to a general absence of guidance or input from the teacher and the unavailability of cutting edge text and expression to push her cognitively and linguistically. At Time 2, Ara was involved and engaged with the lesson topic and task for the majority of the lesson and often pushed cognitively as she grappled with the mathematical problem posed by the teacher. On a few occasions when trying to explain and describe mathematical concepts, she had to dig deep into her linguistic resources to express her thinking. However, at no stage in the lesson was Ara's expression scaffolded in such a way that she was pushed her to the cutting edge of her linguistic potential for quality and quantity. Overall then, while considerably more stimulated, engaged and expressively active in the Time 2 lesson compared to the Time 1 lesson resulting in greater quantity of expression in number and frequency, Ara's quality of expression was not pushed to the edge of her potential in either lessons.

Lesson analysis: ALO Time 1 and Time 2 (School A)

Overall context

Alo, in a Year 1 class at School A, was a considerate, quiet and focused student, keen to learn and comply fully. He interacted comfortably with peers and teachers at Time 1 and Time 2. Almost always, Alo was very alert to teacher talk, whiteboard visuals and text strips, wanting to engage as fully as possible. He had the capacity to ignore possible distractions most of the time, this ability to focus a good role model to other boys in the class. At Time 1, he normally positioned himself at the back of the class group, although he was always keen to see and make meaning. He was seldom distracted by his peers and he did not lose concentration throughout teacher interaction with the class. He spoke little throughout the lesson but showed signs of processing and thinking about the topic in hand. However, it was difficult to pinpoint what Alo was processing cognitively and linguistically. Once or twice only he showed a keenness to offer a response to a teacher question or prompt but was not chosen.

At Time 2, Alo was very alert and involved, an active participant and contributor. He concentrated fully, with almost no down time or diversion. For most part of the lesson, Alo was positioned so that he could see the text pictures clearly, although later a peer was increasingly blocking his view. Despite this, he continued to concentrate, showing little to no frustration, simply manoeuvring himself

a little each time so he could see. Alo delighted in the evolving narrative text the class was co-constructing, especially when his contributions were picked up and included.

Complexity and fluency analysis

Alo expressed a total of 50 utterances during the Time 1 lesson, more or less evenly distributed between lesson and peer response utterances (Table 25a).

Table 25.
Lesson analysis – Alo - Comparison between Time 1 Lesson 2 and Time 2 Lesson 1

Table 25a.
Length of utterance (number of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	21	145	6	-	-	1
3-5	3	80	9	-	-	-
6-8	2	7	4	-	-	-
9-12	-	-	3	-	-	-
13-15	-	-	-	-	-	-
16-20	-	-	-	-	-	-
21 + longer	1	-	1	-	-	-
<Any Modifier>	27	232	23	-	-	1

Table 25b.
Length of utterance (duration of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	00:28.0	02:32.9	00:06.3	-	-	00:01.1
3-5	00:10.8	02:37.0	00:13.7	-	-	-
6-8	00:05.1	00:20.9	00:10.1	-	-	-
9-12		-	00:14.0	-	-	-
13-15	-	-	-	-	-	-
16-20	-	-	-	-	-	-
21 + longer	00:18.2	-	00:08.7	-	-	-
<Any Modifier>	01:02.1	05:30.8	00:52.9	-	-	00:01.1

Table 25c.
Clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 1 PEER TLK	Time 2 SELF TLK	Time 2 SELF TLK
below clause	22	151	4	-	-	-
minimal clause	1	50	10	-	-	1
expanded clause	3	21	2	-	-	-
clause complex	-	2	-	-	-	-
multi clauses (complex clauses)	1	1	-	-	-	-
multi clauses	-	7	7	-	-	-
<Any Modifier>	27	232	23	-	-	1

Table 25d.
Duration of clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	00:35.6	03:02.4	00:03.1	-	-	-
minimal clause	00:02.0	01:20.0	00:14.7	-	-	00:01.1
expanded clause	00:06.3	00:40.8	00:06.1	-	-	-
clause complex	-	00:04.7	-	-	-	-
multi clauses (complex clauses)	00:18.2	00:03.1	-	-	-	-
multi clauses	-	00:19.8	00:29.0	-	-	-
<Any Modifier>	01:02.1	05:30.8	00:52.9	-	-	00:01.1

Table 25e.
Number of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	22	149	5	-	-	1
1 cl	2	70	11	-	-	-
2 cl	-	7	4	-	-	-
3cl	-	3	2	-	-	-
4cl	-	-	-	-	-	-
5cl	-	-	1	-	-	-
6cl	-	-	-	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	1	-	-	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	25	229	23	-	-	1

Table 25f.
Text processes per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
question	1	7	10	-	-	-
explain	-	1	-	-	-	-
prompt	1	3	4	-	-	-
feedback	25	224	9	-	-	-
instruct	-	-	-	-	-	-
comment	1	8	4	-	-	1
direct	-	3	-	-	-	-
praise	-	-	-	-	-	-
criticise	-	-	-	-	-	-
thank	-	1	-	-	-	-
describe	-	-	-	-	-	-
inform	24	203	12	-	-	1
confirm	-	19	2	-	-	-
musing	-	-	-	-	-	-
<Any Modifier>	27	232	23	-	-	1

Table 25g.
Relatedness of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
directly related - + ++	25	231	18	-	-	1
somewhat related +	2	-	2	-	-	-
unrelated	-	1	3	-	-	-
rel-unrel	-	-	-	-	-	-
<Any Modifier>	27	232	23	-	-	1

Table 25h.
Confidence of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
minimally hesitant	17	144	4	-	-	-
inconfident - hestitant	2	5	-	-	-	-
confident	8	83	19	-	-	1
<Any Modifier>	27	232	23	-	-	1

In sharp contrast to Time 1, Alo expressed 233 utterances at Time 2 (Table 25a). While the largest proportion of these were minimal in length - 1-5 word utterances, the frequency of these utterances right throughout the lesson meant Alo was continually expressing and participating. The 23 peer response utterances at Time 1 ranged in word length from 1-12 words, most of these occurring when Alo was colouring in a picture of a dinosaur while sitting at a table with 3-4 other students. Their utterance exchanges were primarily related to the task of colouring or talk about the picture context

and dinosaurs. Alo expressed two utterances longer than 21 words as he endeavoured to share his thinking and reaction to part of the picture. He expressed one to his peers, and the other initially was addressed to the teacher but as she did not stop by the table, he continued his utterance to peers around him. He struggled to express his meaning, his expressive limitations evident in this example:

Time 1 example
25:53 Miss I like it this one...Wow he got ..ho got lots of fire back here..I put a fire back here..And nobody...nobody..Oh..the volcano do a fire..He dead eh? He died eh? Make a fire come out there. Boom.

There was no scaffolder or scaffolding available to take him beyond his current limited expressive competency. Other shorter peer response utterances shorter were also expressively limited, as this example illustrates:

Time 1 example
26:16 That's a smokey.
26:23 That's the light green.
26:27 Is that light green?
26:31 Da...Is da dark green?
26:35 Are dis..Are this green?
26:44 I like this one.

For a great deal of the whole class lesson time at Time 1, of the few lesson response utterances Alo expressed, the majority were 1-2 word utterances (Table 25a). This part of the lesson was predominantly teacher questioning or prompting, followed by display responses from the students. Little explicit attention was given by the teacher to provide expressive models of greater quantity and quality, and to make these available for potential acquisition by Alo and other students. The following is an example of these Time 1 utterances by Alo:

Time 1 example
05:59 Yes
06:09 Ankyosaurus
07:07 Yes
07:37 Tyrannosaurus
07:59 ....tops.
08:02 ..saurus
08:07 ...saurus..Anklyosaurus. Stegasaurus..T-rex
08:19 Tyrannosaurus

At Time 2, Alo expressed markedly more utterances, although the majority of these were only 1-2 words in length. However, 80 utterances were between 3-5 words long, with seven 6-8 words in length. The lesson structure and orientation was such that Alo was scaffolded to express frequently, the teacher and the students co-constructing a meaningful text derived from the book pictures. The evolving story included multiple opportunities to revise and re-express, this mostly occurring through collaborative saying so that Alo had available to him quantifiably more expressive opportunities and text models than at Time 1. The frequency of Alo's utterances was evident in the time stamp data in this example from the Time 2 lesson:

Time 2 example
03:15 finding words difficult
03:16 cutting back. [only just managing to say]
03:20 [doesn't say - (all the branches and the)] leaves...

03:32 *mumbling not clear saying - and the birds were singing*
03:42 *Ara is..*
03:45 *Ara is digging a hole..*
03:49 *..in the special garden..*
03:52 *..made of..*
03:54 *doesn't put in 'bricks'*
03:55 *..made of bricks..*
04:01 *..hole..*

Often Alo was expressing every few seconds compared to Time 1 when there were intervals of silence as extended as 2 and 3 minutes in this example:

Time 1 example
10:19 *Yes*
10:42 *sword*
12:57 *Yes*
13:22 *Big boy. He eats dinosaurs.*
14:40 *Yes*
15:53 *nonsensical loud word sound*
16:37 *nonsensical loud word sound*
18:05 *Me too.*

The extended nature of Alo's expression at Time 2 compared to Time 1 was evident in the duration of words per utterance data (Table 25b). Over the whole lesson at Time 1 lasting 28.23 minutes, Alo's total expressive time was 1.55 minutes. In contrast, during the 29.13 minutes of videoing of the Time 2 lesson, Alo expressed a total of 5.30 minutes, this utterance time fairly evenly distributed across the lesson. He was an active expressive participant throughout.

In line with words per utterance data, Alo's lesson response utterances at Time 1 were primarily below clause as in the examples above, simple rather than complex grammatical expressions (Table 25c). Alo's oral assessment analysis and vocabulary data clearly showed how limited was his expressive competency and performance at Time 1. When the lesson structure and orientation of the lesson was such that there was little available input and output opportunity to supportively hear and practice grammatically more complex expression and text, as in the Time 1 lesson, Alo's potential to acquire and extend his current expressive repertoire was constrained accordingly. At Time 2, the collaboratively co-constructed expression often pushed his grammatical resources. He was an involved contributor and participant sayer but he often struggled to express the more complex evolving story text and expression. Despite this grammatical challenge, Alo concentrated intensely throughout, willingly trying to express along with his peers. The collaborative nature of the lesson and evolving text supported him to express more grammatically complex utterances, with continuing recall of the text before the 'new' was layered in.

The teacher's deliberately planned and delivered scaffolding of the evolving text in the Time 2 lesson influenced both the quality and quantity of Alo's utterances. Mostly the lesson orientation was towards students echoing the often short and minimal utterances of the co-constructed text largely led by the teacher. The following example from the Time 2 lesson of Alo and teacher utterances interwoven, illustrated this expressively constraining factor:

Time 2 example

Teacher's utterances	***Alo's's utterances***
...cutting back...	
	...cutting back...
all the branches and the leaves.	
	leaves...
....and the birds were singing. I like that Ant. Can we say that?..And the birds were singing.	
	....and the birds were singing
Here's Ara.	
	Ara is..
Ava..That's the...Ara is digging a hole...	
	Ara is digging a hole..

While a great deal of the teacher's utterances of the evolving text were grammatically challenging for Alo, at times they came across in a somewhat disjointed manner because of the broken up nature of the text, perhaps affecting students' ability to derive coherent meaning. The teacher made a judgement to take this approach so as to offer the students many opportunities to echo and say shorter utterances, thus supporting students like Alo to manage and express the text with greater accuracy, confidence and fluency. The trade off was at times a less coherent and fluent text than might be desirable. However, the pictures were content-rich and sequential, and so Alo was able to follow the story meaningfully. He struggled to express the longer and grammatically more complex utterances on offer, these occurring especially as the text and story evolved across the lesson, Alo often not able to say these confidently, fluently and accurately even after several repeats as in the following example:

Time 2 example

Teacher's utterances	***Alo's utterances***
Right. We'll start right from Ara, shall we? Ara ...	
	Ara
was watering her garden and Dana was helping her hold the hose (chn chipping in).	
	..watering her garden..
...was helping Ara hold the hose. Down in the dirt the worms were wiggling around..	
	....helping ..... hose

Alo was engrossed in the story right throughout and keenly contributed to the co-construction at times, as in these utterances:

Time 2 example
'Yeah. I know. Call her Malaeya.';
Hey, that ....
We could call pussy cat...
I think..
Oh where's the bus?
Like Spongebob
I can see the baby
Call him..Call him..Call him Alo. Like me.
Like my name.

The teacher was orientated to opening up spaces for the students to contribute, triggering and valuing suggestions made. Alo was delighted to have his contributions acknowledged and incorporated,

influencing his attention and willingness to try out expressions that were grammatically challenging for him, both structurally and lexically, as with these utterances:

Time 2 example
02:49 Mum is walking (working) in the garden.
02:53 ..with her hedge clippers
02:57 ..cutting back the clouds (plants)
03:00 and lollecting the leaves (and collecting the leaves)

This was not the case in the Time 1 lesson. Alo was not active as a sayer, and although the topic and context interested him, there were few if any opportunities for students to collaboratively shape ideas or expression mainly because the teacher was not orientated towards this. In the first 20 minutes of lesson structure, interactional patterns and discourse were not conducive to Alo trying out grammatically more complex utterances nor expressing his thinking and ideas.

At Time 2 Alo expressed 7 multi-clause utterances with either 2 or 3 clauses (Table 25e). All occurred when Alo spontaneously contributed ideas to be included in the evolving text. The scaffolded text led by the teacher consisted primarily of expanded clauses - noun groups, verbal groups and adverbial groups mostly in the form of prepositional noun groups, and the clause level analysis of Alo's utterances reflected this.

While there were more multi-clause utterances at Time 1 than at Time 2, all of these peer response utterances, they were poorly constructed and reflected Alo's grammatical limitations expressively. Time 1 examples illustrate this:

Time 1 example
20:03 I can copy..I copy you? Can I copy you?
21:32 Hey where's.my.? Where's my name?
23:45 It's no yellow eh? We got any orange eh?
24:35 Yeah he got different things..He got...Haa..and he got black things.eh? Look at that. He got different things too..

Duration of clause type per utterance analysis indicates that at Time 1 and Time 2, the majority of Alo's lesson response utterance time was spent on expressing below clause utterances (Table 25d). Alo spent proportionately more time expressing clause or above clause level lesson response utterances at Time 2, than Time 1 indicating increased quality of utterance expressive opportunities. Alo's peer response utterances at Time 1 amounted to just under a minute in total, most of that time spent on expressing the multi-clause utterances that were structurally and lexically limited.

Self-talk utterances

There was one self-talk utterance at Time 2 and nil at Time 1 (Table 25a). This reflects Alo's high level of concentration on what was in focus, his attention to interacting with others rather than engaging internally and privately, his orientation towards 'other' as his semiotic space of meaning-making. He appears to have had a realisation that his transition from 'known' to 'new' was critically linked to interaction with his teacher and peers.

Text processes of utterances

The text processes of Alo's lesson response utterances at Time 1 and Time 2 were predominantly feedback and informing processes (Table 25f). In the Time 1 lesson, teacher questioning or prompting triggered these utterance processes in large part. At Time 2, the processes were a direct reflection of the structure and text of the lesson, where the majority of Alo's utterances mirrored the informing processes of the evolving storyline and text, including an interactional pattern of echo, repeat and co-construct next. On some occasions at Time 2, Alo initiated a contribution identified as comment and confirm utterance processes, or asked a question, this not occurring at Time 1. As an involved participant throughout the Time 2 lesson, such processes were more likely to occur as they did in Alo's case. Peer response utterances at Time 1 included a number of questions, prompts and comment processes as Alo interacted and shared with his peers informally at the table.

Relatedness of utterance

Alo was focused as a learner, in his own words 'a good boy'. He displayed high levels of concentration on the topic and task in hand, even when he was relatively inactive in terms of expression, as in Time 1. The relatedness of Alo's utterances reflected this, also influenced by the lesson structure of both lessons. At Time 1, the first 19 minutes of the lesson was largely teacher-led and Alo's utterances were with two exceptions, directly related to the topic and focus in hand (Table 25g). Time 1 peer response utterances, which had the potential to give rise to unrelated utterances by Alo, as in Rana's Time 1 lesson, were almost all directly related, again reflecting Alo's orientation as a learner in the context of the classroom.

Confidence of utterance

Both at Time 1 and Time 2 a significant number of Alo's utterances were minimally hesitant (Table 25h). He was generally a calm, quiet student although not shy. His fluency of expression was determined by a number of factors, linguistic and physical. With limitations grammatically and lexically, Alo often struggled to express his ideas, observations and thoughts, evident when drawing totally in his own resources as at Time 1 with such utterances as:

Time 1 example

24:35 Yeah he got different things..He got...Haa..and he got black things.eh? Look at that. He got different things too.

At Time 2, where there was on-going supportively available text and expression, he also struggled to utter, affected primarily by the grammatical challenge of the utterances he hearing and trying out and his fluency reflected this. However, notable is also the number of Time 2 lesson response utterances that he expressed with confidence. These were proportionately more of the total number of utterances than at Time 1, indicative of his greater expressive confidence and fluency at Time 2. At Time 2, Alo's nasal passage was blocked with mucous, affecting the clarity and fluency of his expression. At Time 1 this was less marked but Alo did appear to have some breathing problems most of the time.

Summary

Particularly significant was the greatly increased frequency, number and duration of Alo's lesson response utterances at Time 2 compared to Time 1. Throughout the Time 2 lesson, Alo was an active participant expressively, fully involved in the co-constructed evolving text by students and teacher. Utterance opportunities were continuously available across the 29+ minutes of the videoed lesson and Alo willingly tried to express, despite many expressions being at the cutting edge of his current grammatical capability. The quantity of Alo's expression at Time 2 had dramatically increased compared to Time 1 when Alo expressed just over one minute in total across 29 minutes of the lesson compared to over five minutes in the Time 2 lesson.

The majority of Alo's utterances at Time 1 and Time 2 were grammatically simple, with a large number of lesson response utterances below clause, however, at Time 2 Alo expressed proportionately more multi-clause lesson response utterances than at Time 1. A large number of the evolving storyline and text at Time 2 were expanded clauses not frequently occurring grammatical structures as part of Alo's independent expression, primarily led by the teacher but complemented by student contributions. While the majority of Alo's expressions were echo and repeat utterances of the evolving text, they both supported and challenged him grammatically in terms of structure and lexis, framing the quality of his utterances.

Longer and multi-clause utterances did not necessarily result in grammatically and semantically well constructed expression as was evident in Alo's Time 1 peer response utterances. His peer response utterances at Time 1 included a wider range of text processes typically occurring in informal conversational exchanges of young children than in his lesson response utterances, many of which were longer as measured by the number of words and clauses. However, because Alo was largely unsupported linguistically, the grammatical structure and lexis of his utterances were confined to the limitations of his independent expressive resources, consequently offering him no acquisition and uptake potential, confining him to his current grammatical repertoire. .

The quality and quantity of Alo's utterances in both lessons were unquestionably determined and influenced by how and what text was made available to him, and to what extent he could be an active and involved participant and sayer. The interactional and discourse patterns of the Time 2 lesson offered Alo needed expressive mileage and supportively available grammatical structure and lexis whereby his acquisition and uptake potential was enhanced. This was in stark contrast to the Time 1 lesson.

Lesson analysis: RANA Time 1 and Time 2 (School A)

Overall context

Rana was one of the youngest students in her Year 1 class at School A, with her twin sister a new entrant at the beginning of the school year. Her sister had some learning delay problems and Rana was quite protective of her, extremely alert to her needs in class. She interacted confidently with teacher and peers. At Time 1, during mat time, she was multi-tasking, doing up her shoelace as well as listening and participating. With a great deal of the lesson spent working at a table on an independent task, she was highly aware of and interactive with peers, especially her friend at the same table. She prattled and verbally played around with peers while at the table, at the same time completing her worksheet which she was keen to do as well as she could.

At Time 2 Rana participated fully in class and group situation, and had good recall of the process of stewing apples done practically the day before the lesson, remembering and expressing in considerable detail. Throughout the lesson she was quite focused, keen to read strips and try to read these on her own at times through self-talk and later by reading them to her teacher. She had a competitive streak and was pleased when her group finished first, not hesitating to call over the teacher and interact with her. She liked to organise her peers in the group and ensure all was fair. Generally she interacted well with her peers, very sensitised to verbal and non-verbal communication.

Complexity and fluency analysis

Rana expressed a total of 185 utterances in the Time 1 lesson, of which 153 were peer response utterances (Table 26a).

Table 26.
Lesson analysis – Rana's - Comparison between Time 1 Lesson 3 and Time 2 Lesson 2

Table 26a:
Length of utterance (number of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	14	28	44	11	5	2
3-5	6	41	66	18	2	3
6-8	2	16	20	3	-	5
9-12	1	3	14	-	-	1
13-15	-	3	4	-	-	1
16-20	1	2	1	-	-	-
21 + longer	1	-	4	-	-	-
<Any Modifier>	25	93	153	32	7	12

Table 26b.
Length of utterance (duration of words per utterance)

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
1-2	00:19.4	00:33.4	00:43.4	00:10.5	00:06.7	00:02.4
3-5	00:17.5	01:52.8	01:51.2	00:28.2	00:02.9	00:14.3
6-8	00:20.8	01:16.6	00:59.6	00:05.9	-	00:27.5
9-12	00:12.8	00:13.7	00:53.5	-	-	00:11.5
13-15	-	00:27.6	00:17.5	-	-	00:11.1
16-20	00:14.8	00:32.7	00:05.9	-	-	-
21 + longer	00:29.0	-	00:39.1	-	-	-
<Any Modifier>	01:54.4	04:56.7	05:30.2	00:44.6	00:09.6	01:06.8

Table 26c.
Clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 1 PEER TLK	Time 2 SELF TLK	Time 2 SELF TLK
below clause	21	24	36	8	5	3
minimal clause	2	28	49	15	2	1
expanded clause	1	28	24	6	-	3
clause complex	1	1	18	3	-	2
multi clauses (complex clauses)	-	3	3	-	-	1
multi clauses	-	9	23	-	-	2
<Any Modifier>	25	93	153	32	7	12

Table 26d.
Duration of clause type per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
below clause	01:17.4	00:35.7	00:37.3	00:07.1	00:06.6	00:05.1
minimal clause	00:30.8	00:50.7	01:15.1	00:21.8	00:03.0	00:01.8
expanded clause	00:03.5	01:51.7	00:44.4	00:11.5	-	00:24.0
clause complex	00:02.6	00:06.2	00:56.6	00:04.2	-	00:10.0
multi clauses (complex clauses)	-	00:29.0	00:20.0	-	-	00:11.1
multi clauses	-	01:03.4	01:36.7	-	-	00:14.8
<Any Modifier>	01:54.4	04:56.7	05:30.2	00:44.6	00:09.6	01:06.8

Table 26e.
Number of clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	**22**	**22**	**31**	**7**	**4**	**3**
1 cl	**2**	**53**	**77**	**21**	**3**	**3**
2 cl	**-**	**8**	**28**	**3**	**-**	**3**
3cl	**1**	**5**	**8**	**-**	**-**	**1**
4cl	**-**	**-**	**3**	**-**	**-**	**-**
5cl	**-**	**-**	**1**	**-**	**-**	**2**
6cl	**-**	**-**	**1**	**-**	**-**	**-**
7 cl	**-**	**-**	**-**	**-**	**-**	**-**
8 cl	**-**	**-**	**-**	**-**	**-**	**-**
9 cl	**-**	**-**	**1**	**-**	**-**	**-**
10 cl	**-**	**-**	**-**	**-**	**-**	**-**
11cl	**-**	**-**	**-**	**-**	**-**	**-**
12 cl	**-**	**-**	**-**	**-**	**-**	**-**
13 cl	**-**	**-**	**-**	**-**	**-**	**-**
14 cl	**-**	**-**	**-**	**-**	**-**	**-**
15 cl	**-**	**-**	**-**	**-**	**-**	**-**
16 cl	**-**	**-**	**-**	**-**	**-**	**-**
17 cl	**-**	**-**	**-**	**-**	**-**	**-**
18 cl	**-**	**-**	**-**	**-**	**-**	**-**
19 cl	**-**	**-**	**-**	**-**	**-**	**-**
20 cl+	**-**	**-**	**-**	**-**	**-**	**-**
<Any Modifier>	**25**	**88**	**150**	**31**	**7**	**12**

Table 26f.

Duration of number clauses per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
0 cl	01:46.0	00:32.2	00:31.7	00:06.8	00:06.0	00:05.1
1 cl	00:05.3	02:32.8	02:04.3	00:33.4	00:03.6	00:14.2
2 cl	-	00:40.4	01:24.5	00:04.2	-	00:25.4
3cl	00:02.6	00:58.5	00:31.8	-	-	00:01.3
4cl	-	-	00:18.7	-	-	-
5cl	-	-	00:07.7	-	-	00:20.8
6cl	-	-	00:12.4	-	-	-
7 cl	-	-	-	-	-	-
8 cl	-	-	-	-	-	-
9 cl	-	-	00:11.7	-	-	-
10 cl	-	-	-	-	-	-
11cl	-	-	-	-	-	-
12 cl	-	-	-	-	-	-
13 cl	-	-	-	-	-	-
14 cl	-	-	-	-	-	-
15 cl	-	-	-	-	-	-
16 cl	-	-	-	-	-	-
17 cl	-	-	-	-	-	-
18 cl	-	-	-	-	-	-
19 cl	-	-	-	-	-	-
20 cl+	-	-	-	-	-	-
<Any Modifier>	01:54.4	04:44.0	05:22.9	00:44.4	00:09.6	01:06.8

Table 26g.

Text processes per utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
question	1	5	6	5	-	-
explain	2	12	37	12	1	-
prompt	-	1	5	1	2	-
feedback	21	76	53	5	-	-
instruct	-	-	1	-	-	-
comment	1	1	21	4	4	9
direct	-	5	26	9	-	-
praise	-	-	-	-	-	-
criticise	-	-	-	-	-	-
thank	-	-	-	-	-	-
describe	-	1	2	-	-	-
inform	13	84	114	25	3	11
confirm	3	7	29	2	-	-
musing	-	-	-	-	-	-
<Any Modifier>	25	93	153	32	7	12

Table 26h.
Relatedness of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
directly related - + ++	24	92	35	18	2	11
somewhat related +	1	1	43	10	1	1
unrelated	-	-	75	4	4	-
rel-unrel	-	-	-	-	-	-
<Any Modifier>	25	93	153	32	7	12

Table 26i.
Confidence of utterance

	Time 1 LES RSP	Time 2 LES RSP	Time 1 PEER TLK	Time 2 PEER TLK	Time 1 SELF TLK	Time 2 SELF TLK
minimally hesitant	5	21	5	1	-	1
inconfident - hestitant	-	2	1	-	-	-
confident	20	70	147	31	7	11
<Any Modifier>	25	93	153	32	7	12

The Time 1 lesson structure was such that Rana was not directly taught or scaffolded by her teacher but spent most of the lesson time working at a table with peers completing a maths related sheet. This situation gave rise to many peer exchange utterances unsupported by an 'expert other'. In contrast, in the Time 2 lesson Rana expressed 137 utterances, (3.72 times as many lesson response utterances and 4.78 times fewer peer response utterances than at Time 1), 93 of which were lesson response utterances occurring when the class were working collaboratively recalling process and text about stewing apples, and 32 peer response utterances when she and peers worked in a group sequencing and matching photos and text strips. Rana was supportively scaffolded into oral and written text by teacher and peers the majority of the time in the Time 2 lesson.

The complexity and fluency of Rana's expression as evidenced by the number of words per utterance (Table 26a) indicated she expressed quantitatively and qualitatively more at Time 2 than Time 1. At Time 1, lesson response utterances were few compared to peer response utterances and self talk, 50% of which were 1-2 words in length, with another 25% of her utterances 3-5 words in length, indicating very minimal expression most of the time. The few longer Time 1 lesson response utterances occurred at the beginning of the lesson as Rana rote counted numbers from 1-20 with her peers. In the Time 2 lesson, with a significant increase in the number of lesson response utterances, the frequency of 1-2, 3-5, 6-8 utterances also markedly increased. Utterances of 9-12, 13-15 and 16-20 words also increased, doubling and trebling in number. Overall and specific to lesson responses, Rana expressed more and longer utterances at Time 2 compared to Time 1.

The quantity of Rana's utterances at Time 2 compared to Time 1 as measured by the duration (Table 25b) of the number of words per utterance categories increased overall by an average of 3 minutes. With the exception of the duration time for 9-12 and 21+ word utterance categories, all other word number categories increased in duration, with 3-5 and 6-8 word utterance categories markedly increased. Analysis of duration of word number categories combined with number of words per utterance data indicated that overall Rana spent more time expressing at Time 2 than at Time 1 and did so across most of the number of words per utterance categories, with a marked increased in the quantity of expression.

This increase in utterance length from Time 1 to Time 2 as measured by duration (Table 26b) would appear to be due to a number of key factors - namely, a) an increase in opportunities available to Rana to express collaboratively, and the availability of more complex and longer text expression, triggered and modelled by the teacher, alongside recycling of these texts through collaborative saying in class and small group situations; b) the availability of picture and text strips supports acting as hooks for Rana's potential expression; and c) a contextually meaningful and familiar topic about which to express, Rana having participated in making stewed apples the previous day with available 'rich' exchanges of ideas and text stimulating her interest and supporting her capacity to participate in expression. She was an involved sayer. These factors were particularly dependent on the availability of the teacher as prime scaffolder, the meaningful context and text on offer, and the lesson structure whereby Rana had available to her multiple potential uptake and output opportunities, models, support and expressive time to extend the quality and quantity of her expression.

The duration of peer response utterances reduced dramatically in the Time 2 lesson influenced most heavily by the difference in lesson structure at Time 2. Compared to Time 1, the mean duration of self talk increased at Time 2 as Rana engaged intensely with the lesson response text, trying out expression in self talk utterances throughout the collaborative stage of the lesson. Self talk, expression in private, is not uncommon among young learners and was evidence that Rana was consciously and unconsciously focused on acquisition and uptake of available text throughout the lesson.

Almost all of Rana's lesson response utterances at Time 1 were below clause (Table 26c), putting little expressive demand on her, as in this example:

Time 1 example
03:00 T-rex
03:27 I got strawberry
03:43 two
03:54 six
04:02 eight
04:19 fifteen
04:23 me too

For much of the Time 1 lesson when Rana and several other students worked independently at a table completing a maths related sheet, she had an opportuniy to communicate with her peers for quite

some time – a period of almost 20 minutes. Most of the total number of the 153 peer response at Time 1 utterances occurred during this time as Rana and a friend exchanged many utterances in a bantering manner. The utterances were distributed most heavily among below clause, simple and expanded clause types, however, there were also 18 clause complexes and 23 multi-clause utterances. Examples illustrate that Rana's utterances were neither rich nor demanding linguistically, often repetitive, providing her with little to no acquisition and uptake potential. The following exchange typifies Rana's utterances with her peers at the table:

Time 1 example
07:45 Wan sit over here? Par, Par.. want to sit over here?
07:51 calling to Par at computer
07:52 What? I'm not being your friend
07:58 No, I mean... I mean I'm not being your friend Ant.
08:03 I talking about being in her team
08:36 No.. No
08:54 You not
08:56 Yes.. are
08:59 Yes, you are.

Other more expanded and grammatically complex utterance examples were:

Time 1 example
13:42 I am your friend Ant
13:49 I am your friend Ant I'm your friend. I'm happy
13:55 I'm sad too. I'm not being your friend
14:00 Either, I'm not being your friend
14:06 Shut up
14:10 Oh, sorry.. We sorry bout that. I back in the line
14:20 Yeah. Oh, I'm telling it ...You draw on table
14:31 You have to draw your own one.

While the above Time 1 utterances were more complex and extended than the previous utterance sequence, Rana was clearly not 'pushed' expressively and grammatically. There was greater quantity of expression in peer response utterances than in lesson response utterances at Time 1 evident in the number of words and duration of words per utterance data of lesson and peer response utterances (Table 26a & 26b), however, based on clause type data and examples, quality of utterance was not evident.

The overall time Rana expressed to peers reduced dramatically from Time 1 to Time 2 as a direct result of a change in lesson structure affecting her attention and use of text. Where peer response utterances dominated Rana's expression at Time 1, lesson response utterances dominated at Time 2. Combining duration of lesson, peer response and self-talk duration data, Rana's duration of expression overall was as much at Time 1 as Time 2. Of more significance in terms of quality and quantity of expression change between Time 1 and time 2, was the increase in grammatical complexity as measured by clause type viewed alongside the transcript and duration data.

At Time 2, Rana's utterances included significantly more minimal, expanded and multi-clause utterances compared to Time 1, these also greatly extended in mean duration (Table 26d). Conversely, the range and number of peer response clause types at Time 1 reduced markedly at Time

2 when the majority of utterances were lesson reponses. Examples illustrate Rana's increase in quality and quantity of expression at Time 2, her utterances grammatically more complex in terms of clause type and in relation to the formal register of the text.

Time 2 example

10:04	*Place the pot onto an element*
10:34	*Place the pot onto an element*
11:18	*..the apples until soft.. they're soft*
12:01	*Red apples. Peel the apples. Peel...peeled apple. Cut.. Cut apples into small pieces*
12:18	*Place apples into the pot*
12:25	*Put water into the pot*
12:33	*Put.. Place the pot into a element*
12:42	*Cook the apples until they..*
13:24	*Spoon apples.. Spoon apples into the bowl*

Time 2 example

27:51	*Place apples into the pot. Pour water into the pot. Place the pot onto an... eme..ment*
28:07	*Cook the apples until they are soft. Spoon the stewed apples into a bowl. ready... to eat*
28:29	*Cut apples.,..*

These utterances were not spontaneously generated or novel, but rather text provided by the teacher orally and on text strips. In the early part of the lesson Rana struggled to express what for her was grammatically and lexically demanding text, as in this example:

Time 2 example

	Rana's utterances	***Teacher / class text***
14:44	*Place apples into the pot.*	*Place apples into the pot.*
14:51	*..pot*	*Place apples into the pot.*
14:52	*..pot*	*Place apples into the pot.*
14:55	*Pour water into the pot.*	*Pour water into the pot.*
15:01	*Place the pot on the.. to a*	*Place the pot in to an element.*
15:11	*Cook the apples.. ....are...*	*Cook the apples until they are soft.*

Many students in the class group managed to express these texts with considerable fluency and grammatical accuracy but initially Rana could not. As the text accompanied by spontaneous recall and discussion ensued, with numbers of reiterations, Rana became increasingly able to utter these expressions fluently and grammatically accurately and join in with her peers and express these independently. Rana's grammatical quality was reliant on teacher input and scaffolding in order to offer her acquisition and uptake potential.

The majority of Rana's lesson response utterances at Time 1 contained no clauses, this compared to peer response utterances of which the largest proportion were one or two clause utterances (Table 26e). At Time 2, lesson response utterances overall had increased, with more one-clause utterances, reflecting the many simple, one-clause instructional text led by the teacher. However, at Time 2, Rana also expressed 8 two-clause and 5 three-clause lesson response utterances, while at Time 1 she expressed only one three-clause lesson response utterance. The high number of peer response utterances at Time 1 containing one and two clauses, and the 8 three-clause and 3 four-clause utterances, need to be examined in light of the lesson transcript where it can be seen that Rana's utterances, although expanded, were generally linguistically minimal in terms of vocabulary and grammatical structure, 'spoken-like' on the mode continuum (Eggins, 1994). She was expressing

already-acquired structures, not being pushed to her cutting edge or being offered increased grammatical acquisition potential. So while Rana's utterances were quantitatively more at Time 1 than at Time 2, they were not grammatically complex or extending.

Self-talk utterances

Rana expressed considerably more self-talk at Time 2 than Time 1 (Tables 26a & 26b). The Time 2 self talk utterances were primarily Rana privately trying out text that pushed the grammar and fluency of her expression. The number of words per self talk and clause type per utterance at Time 2 mirrored the lesson text and pushed Rana to express longer utterances, as well as more complex utterances at clause level. Rana strategised, as many young learners do, to practise privately before display, slightly lagging behind the collaborative class saying, acting as a model, and reinforcing her new learning and potential acquisition by repeating texts to herself. She expressed five utterances of two or more clauses, namely, clause complexes and multi-clauses utterances of five and three clauses (Table 26e). In Rana's case, self-talk at Time 2 was significant as a self-chosen strategy towards acquisition and uptake.

Text processes of utterances

The text processes of Rana's utterances reflect the differences in lesson structure between Time 1 and Time 2 (Table 26g). At Time 2, feedback and inform lesson response processes were markedly more dominant than at Time 1. Conversely, peer response processes at Time 1 were scattered across the spectrum of processes, reflecting the nature of children's informal talk with each other. The Time 2 self-talk processes mirrored the lesson response processes as Rana tried out lesson-based expressions directly linked to the stewed apple text, in contrast to Time 1 self talk and peer response processes unlinked in this way.

Relatedness of utterance

Rana's lesson response utterances at Time 1 and Time 2 were almost totally directly related to the topic in hand (Table 26h). In contrast, at Time 1 the highest number of peer talk response utterances was unrelated. Typical examples of these Time 1 utterances were:

Time 1 example
07:52 What? I'm not being your friend
07:58 No, I mean... I mean I'm not being your friend Ant.
08:03 I talking about being in her team

A number of utterances were somewhat related, such as, '*I not copying you. Copy me.',* and *'Ah, no. I don't want to copy you.',* with also a number of directly related utterances, such as, *'Miss G. Miss G, I not finished yet.*', and *'Seventeen, eighteen, nineteen, twenty.'* Proportionate to the reduction of peer response utterances at Time 2 from Time 1, and in light of the Time 2 lesson structure, the number of somewhat and unrelated utterances greatly reduced at Time 2, with the majority of Rana's utterances directly related to the lesson and topic in hand. This change in relatedness of utterances was due

primarily to the peer talk opportunities available to Rana in both lessons. At Time 1, with little to no guidance and input from the teacher and a cognitively undemanding task to be completed independently, unrelated peer talk was more likely to occur. At Time 2 Rana had a specific and guided task, accompanied by supportive materials, with an identified goal to work collaboratively towards with her peers, so that peer talk opportunities were likely to be focused and lesson connected.

Confidence of utterance

At Time 1 and Time 2, Rana's utterances were predominantly expressed confidently (Table 26i). The increase in confident lesson response utterances at Time 2 paralleled the increase in the number of utterances between Time 1 and Time 2. However, a significant number of lesson response utterances at Time 2 were minimally hesitant as Rana tried to express expression that were at her cutting edge in terms of grammaticality and fluency. Almost all of Rana's peer response utterances at Time 1 and Time 2 were confidently expressed. She was generally at ease with her peers and interacted confidently with them. In class, she was not shy to make her needs known, organise others and interact with her teacher and her informal responses to her teacher and many utterances to peers reflected this.

Summary

Because in this class, small group rotations was a preferred and required pedagogical practice, a student like Rana who needed quality and quantity opportunities for expression, supported by carefully scaffolded input and output by an expert other such as the teacher, did not have that available to her 60-75% of the time, without which Rana was unlikely to fulfil her expressive potential moment-by-moment and across time. At Time 2, a pedagogical shift had been made by the teacher which had a dramatic affect on Rana's interactions and expression. Peer response utterances dominated her expression in the Time 1 lesson, her grammar and fluency of expression not pushed. In contrast, in the Time 2 lesson Rana had available to her an increase in quality and quantity of expression in ways likely to result in acquisition and uptake. She was pushed linguistically, scaffolded and supported especially by her teacher, but also by her peers in collaborative saying and expression, complemented by self-talk as a self-chosen strategy to move herself towards more confident and fluent expression of available cutting edge text.

Overall, Rana expressed herself confidently in both Time 1 and Time 2 lessons, however, there was an increase in minimal hesitancy in lesson response utterances at Time 2 as she tried to express sometimes unfamiliar and grammatically challenging text. This increase in hesitancy is indicative of Rana being pushed to her cutting edge but in a supportive manner whereby she felt motivated and able to try out available challenging expressions and text. By contrasting the Time 1 and time 2 lessons, it became evident that Rana's growth in quality and quantity of expression was highly reliant on scaffolded and extended opportunities to express, available to her in a supportive manner, pushed to

her cutting edge, resulting in greater acquisition and uptake potential. Left to her own devices, or primarily interacting and expressing with peers unsupported by a scaffolding expert, Rana's expressive potential was severely limited and minimised.

Discussion

Each of the six case study students brought to the classroom and their moment-by-moment learning a unique set of attitudes, capabilities, experiences, values and skills, some of which were innate and some of which were a result of the environmental conditions they operate within and respond to. This unique framework set influenced and shaped their learning orientation and performance in class, and most importantly in this study, their acquisition and uptake realities and potential.

Students' learning framework sets

There were identifiable commonalities among the six case study students in regard to learning orientation. They all showed a keenness and willingness to learn, participate and be engaged; a desire and willingness to interact with peers and teacher; and a sense of pride when they achieved or knew; a desire to comply with the teacher, deriving satisfaction from feedback that was positive and responsive. All enjoyed dialogue and stories, and got involved in classroom activities, trying their best to 'do what they should' and 'do their best'. What particularly seemed to affect the optimisation of these learning attributes in any learning context and situation was the structure and process of teaching and learning delivery. When the contents, processes and staging conditions were shaped and delivered in such a way that each student could fully operationalise some or all of these attributes, then evidence from this study suggests their acquisition and uptake potential was also maximised. Conversely, when one or more of the above was not available or was reduced in some way, then their acquisition and uptake potential was constrained or minimalised.

Five and six year old students are reactive learners in the sense that they respond to their context and situation with less conscious control and circumspection than older, more mature learners. On the one hand, how they respond is controlling of self and other; on the other hand, they have minimal control of their classroom context and situation and even less control over their framework set. In contrast, the teacher has maximal control of the classroom context and situation, has some control and considerable influence on the student's learning orientation, and little to no control over the student's unique framework set he or she brings to their learning. Ideally, the teacher makes conscious, educationally informed pedagogical decisions that take into account each student's unique framework set, their learning orientation and current interactional and expressive competencies, so that learning – acquisition and uptake, is occurring as optimally as possibly.

Each of the six case study students was assessed by their teacher at the commencement of the study using the CombiList criteria and designated as *Yes, Sometimes* and *No* in terms of their interactions and expressiveness in class. While designating the students using CombiList criteria was useful and insightful for screening purposes, it was not able to pinpoint or predict the extent to which acquisition and uptake occurred in each of the lessons analysed. It would appear from the study that each student's acquisition and uptake realities and potential in class and in a lesson was influenced and determined by the optimisation of three converging key contributors: their unique framework set, their existing expressive and interactional competency, and the lesson pedagogy.

All six students had varying degrees of English language acquisition needs, some with more vocabulary and expressive competency than others. Based on measures and assessment at Time 1, Alo, Mele, Rana and Palo were well below expected age and stage levels in vocabulary and oral expression, Api was below but close to expectations, and Ara was well above. Given all five and six year old students are on an language acquisition trajectory as they expand the accuracy, complexity and fluency of their expression, all the more urgent for Alo, Mele, Rana and Palo in particular to be offered optimal language acquisition conditions in the classroom whereby they could exponentially expand their expressive resources to catch up and keep up with more competent peers. Ara and Api also needed and deserved to be similarly placed whereby they too could expand their current repertoire of vocabulary and expressive competency generally and in class.

The lesson analyses of the six case study students reveal how Api, Ara, Alo, Mele, Palo and Rana responded to and were positioned in the context and situation of the classroom as each one's unique framework set converged with the teacher's pedagogy shaping the interactional and discourse patterns which so strongly influenced the optimisation of learning. A number of significant insights can be drawn from these analyses.

Student grouping

The School A classroom at Time 1 was strongly orientated towards small group rotational organisation so that students identified to be 'like' in terms of competency in reading and mathematics in particular, were grouped together. Roughly speaking, for every hour or so of classroom time in language arts and mathematics, each group of students was with the teacher for up to 15 minutes, and for the remaining 45 minutes, occupied with tasks and activities available in other parts of the classroom, with no direct teacher or expert other available to respond to and scaffold them. The pedagogical rationale was that 15 minutes of quality targeted learning would provide each student with more optimal learning conditions than might be the case with a larger, multi-level group of students, and that small numbers of students allow for more effectively fine tuned individualised scaffolding. Analysis of Time 1 lessons when Ara, Alo and Rana were occupied with task and activities in other parts of the classroom while the teacher worked with a small group of other students

at her table[9], what became evident was that for each of the three students, working independently of the teacher was less than optimal in terms of quality and quantity of expression and highly constraining of cognitive and linguistic acquisition and uptake potential.

In Time 1 lesson 1, the most expressively and lexically competent of the three case study students, Ara, was on her own, writing and colouring for one rotation, and at the listening post for the other. To satisfy her need for interaction and talk with others, she expressed numbers of unsolicited utterances to peers and engaged in self-talk at frequent intervals throughout the 27.44 minute lesson. The general absence of guidance or input from the teacher and the unavailability of cutting edge text and expression to push her cognitively and linguistically resulted in minimal quality and quantity of expression, and the absence of stimulating interaction with peers and teacher.

In Time 1 lesson 2, Alo, with considerable expressive and lexical needs, spent 10 minutes of the videoed 29+ lesson working at a table with some other students, colouring in a dinosaur picture. Compared to the very limited quality and quantity of Alo's expression in the previous 20 minutes when he was with the whole class working with the teacher, he was expressively more active with his peers at the table. However, with no scaffolded cutting edge text available, he was confined to the limitations of his independent expressive resources, consequently offering him no acquisition and uptake potential.

In Time 1 lesson 3, Rana, also highly constrained expressively and lexically, spent 23+ minutes independently working at a table to complete a maths sheet linking numbers, followed by colouring in the resulting picture. Her oral expression with several of her peers also at the table was of limited grammatical quality albeit that she engaged confidently and fluently with them. At no time during this time was there scaffolded cutting edge expression available to her. While she was expressively active, her linguistic and cognitive acquisition and uptake potential was highly constrained.

Whether more or less expressively competent, each student was underpotentialised linguistically and cognitively. The implications of this are considerable. When young students such as Ara, Alo and Rana are left to work for some or considerable periods of time on their own without the teacher or an expert 'other' available to scaffold and push them expressively, their acquisition needs cannot be met. In a class such as this NE-Year 1 class, comprised of students with limited expressive resources, peers were unable and unused to quality of expression and scaffolding each other cognitively and linguistically. Thus, spending large amounts of time working independently of the teacher minimises rather than maximises their acquisition and uptake potential, so constraining their potential to exponentially expressively expand despite their great need.

[9] The case study students were videoed at Time 1 when they were working in a small group with the teacher, but coding and data analysis has not been included in this thesis.

Expressive opportunities

Frequent and extensive expressive opportunities (quantity) are a necessary requisite to optimise language acquisition, allowing a child to try out in-coming 'new' text, to consolidate their current repertoire, and to merge the two. Typically, the interactional and discourse patterns of the classroom provide minimal opportunities for students to frequently and extensively express. It is not only desirable but possible to change these interactional and discourse patterns whereby frequency and extent of students' expression is greatly increased. Turn-taking, where peers and teacher in pairs or small and large groups expressively exchange ideas in meaningful ways has the potential to open up frequent and extensive spaces for students to express. However, frequent and extensive turn-taking in itself is not enough. While it may offer practice opportunities and consolidate a student's current expressive competency, it may not offer in-coming 'new' models or input, thus constraining their language acquisition potential.

Five turn-taking situations were afforded the students in the twelve lessons analysed in this study. At times, students expressively exchanged with the teacher while in a large group, either contributing spontaneously in a dialogic exchange, or responding to teacher questioning or prompting. In a similar vein, students engaged in expressive turn-taking on a one-to-one basis with the teacher when she moved around the class attending to individual students, or when the teacher selected a student to work singly with her as the School B teacher did a number of times with Palo particularly in the Time 1 lesson. Students in the School B class engaged in turn-taking pair buddy expressive exchanges a number of times in both Time 1 and Time 2 lessons, not occurring in the School A lessons. Students in the School A class had opportunities to expressively exchange meanings in turn-taking dyads or triads when with peers while completing tasks and activities independent of the teacher, 'holding an informal conversation'. In Time 2 lesson 2, students worked in a small group, guided by previous scaffolding, negotiating the sequencing and matching a set of pictures and word group strips. The conversational turn taking that occurred was focused towards reaching agreement and completing the task. On several occasions the teacher joined in to scaffold and guide the students where needed, otherwise they expressed independent of the teacher. In the School B lessons the last two turn taking situations never arose.

Each of these turn taking situations offered students opportunities to express, however, some were more conducive to optimising quality and quantity of expression than others. Quantity was affected by the frequency of turns available to the student, and the extent of his or her expression. Quality was affected by the availability of grammatically extending text, ideally offered in a supportively scaffolded and timely manner.

On a number of occasions Palo exchanged utterances with his School B teacher. At Time 1, he was singled out in the whole class situation to express what a role model is. This turn taking exchange

took the form of a typical IRE pattern of teacher question, student response, followed by another question by the teacher or an evaluative comment. Palo's opportunity to express was confined to short utterances of minimal word length as he endeavoured to give the 'correct' or expected response. He struggled, unable to express effectively what a role model is, not confident in this 'public' turn taking exchange. In one such exchange sequence he had six turns yet expressed a total of only fifteen words. Later in the lesson the teacher worked with Palo alone while the other students worked in buddy pairs. The exchange again was a typical IRE exchange pattern, Palo's utterance turns a response to teacher questioning as he struggled to express what his role model did for him, limited by his own grammatical and lexical resources. In this exchange sequence, Palo had little to no opportunity to express a flow of ideas and to reveal the fullness of his thinking. In both these turn taking situations Palo's frequency of expression had increased in comparison to his long silences in other parts of the lesson, yet neither situation optimised the quality and extent of his expression. However, the teacher was definitely in control of the way and the topic.

At Time 2, both turn taking situations arose as at Time 1. However, there was a marked difference between the extent and grammatical quality of Palo's utterances, affected by a number of key factors. The lesson was staged so that Palo was offered a carefully scaffolded text on which to base his own constructed utterances, further supported by a picture. Palo had been given an expressive framework and shaped his utterances accordingly. The teacher avoided typical IRE patterning, instead supportively nudging Palo to gradually extend his fluency and fullness of expression. In later parts of the lesson, he expressed with considerable fluency and confidence utterances at his grammatical cutting edge in a number of turn taking exchanges in front of his peers as a class and with the teacher when in a buddy share situation. However, while the quality and quantity of Palo's expression had been optimised more effectively than at Time 1, the teacher found it challenging to offer Palo adequate think time to shape his expression. There is a fine balance between a teacher providing a scaffold of support too soon or too late. As in Palo's case, the critical factor was that as he prepared to express at his grammatical and lexical cutting edge, the mental and expressive effort was such that he was pushed but not overly frustrated or challenged. The teacher perhaps slightly misjudged the needed optimal wait time before intervening with an utterance scaffold.

As discussed in the earlier point, informal conversational turn taking exchanges between peers in the School A NE-Year 1 class did not offer optimal opportunities for quality and quantity of expression. In comparison, peer turn taking exchanges in the School B class had greater potential to push at least some student's grammatical and lexical expressive resources and extend the quality and quantity of their utterances because of a difference in Year level structure. In the NE-Year 2 School B class, the teacher had a well established structure of peer buddy turn taking exchanges, either pairing younger students with older, more mature and capable students, or pairing NE and Year 1 students, or Year 1 and 2 students. Api, a Year 2 student, was comparatively more expressively competent than the

majority of her peers. On one occasion, in the Time 1 lesson 2, she was with a new entrant (NE) student buddy, their expressive task to describe three containers based on their observations. In 14 turn taking exchanges she and her peer engaged in, Api's utterances were either prompts or questions to assist her younger peer to understand and express at least some ideas about the containers. In that sense, she played the role of teacher, controlling the way and the topic in an effort to support her peer buddy who struggled to express any ideas. Despite Api's efforts, her peer expressed little at each turn and at the same time Api's own expressive competency remained largely untapped. Neither student was optimised expressively despite the fact that Api but not her peer buddy expressed frequently in this relatively extended turn taking exchange sequence compared to other parts of the lesson.

In Time 2 lesson 1, 21 minutes into the lesson, Api had a turn taking exchange opportunity with a buddy peer, structured so that each took a turn to express a part of the evolving co-constructed story text. Api took on the role of scaffolder as in Time 1 to support her peer's efforts to express, but also took the opportunity to try out expressing the text at her own level of competency so that she was pushed grammatically and quantifiably. The quality and quantity of the students' turn taking exchange was made possible because of the earlier supportively scaffolded lesson stages where they as co-constructors were increasingly enabled to express a text at their grammatical cutting edge. With multiple acquisition and uptake opportunities through collaborative saying, and with an explicit structure to work within when turn taking with a peer, Api was able to provide her peer with needed support and a text model, as well as express at her own competency level.

Thus, peer and teacher dyad and triad turn taking exchange opportunities are not in themselves enough. Turn taking exchanges, whether with peer or teacher, may or may not provide the necessary interactional and discourse conditions for students to extend their grammatical and lexical resources and optimise their acquisition and uptake potential. What is needed is an enabling turn taking structure and interactional pattern within which potentially available quality and quantity of expression can be supportively practised and used so that the student's current competency and the 'new' can merge and consolidate, thus optimising the students' expressive and uptake potential.

Available quality and quantity text

Without supportively available text and expression at their grammatical and expressive cutting edge ('the almost new' and within their ZPD), a young student's acquisition and uptake potential is severely limited. The challenge for a teacher is to create optimal conditions whereby such cutting edge text and expression is supportively available to the student. Identified optimal conditions include text comprehensibility, multiple opportunities to notice and try out in coming text, and in-built redundancy. When peers cannot or do not provide such conditions either consciously or unconsciously, then the prime source and provider is the teacher. The six Time 1 lessons analysed followed typical classroom interactional and discourse patterns of maximal teacher control of the way

and topic, text dominance by the teacher using text and expression that was either minimally or overly challenging cognitively and grammatically, IRE exchange patterns, and minimal opportunities for students to try out expressing text of quality and quantity and spontaneously contribute to the classroom discourse. In contrast, the interactional and discourse patterns of the Time 2 lessons significantly changed with a resultant impact on the case study students' quality and quantity of expression.

None of the six case study students at Time 1 were optimised for quality and quantity of expression. In the three School B and School A lessons, each teacher posed closed questions, and minimally expressive student responses dominated the teacher student interactions and discourse. 'Hands up to respond' was expected, and spontaneous contributions by students were not encouraged. The teachers were firmly in control of the way and topic of the interaction and discourse, orientated towards display responses and activities rather than providing students with quality and quantity of expressive opportunity to try out supportively available text models that had the potential to lead to acquisition and uptake.

In School B lesson 1 at Time 1, available text from the teacher came largely in the form of questions and confirming 'correct' answers and knowledge. In lesson 2, it was similar, interspersed with extended and grammatically complex explanations and descriptions by the teacher in an effort to illuminate what was proving cognitively challenging content for the students. During peer buddy sharing it became evident that many if not most students were often conceptually confused and unable to express expected understandings. In Lesson 3, expressive input-output text and opportunities in the whole class situation were structured towards listen and display by students. At times, when comprehensible, grammatically rich text and expression was potentially available, the necessary supportive acquisition and uptake conditions to accompany it were not.

The more expressively and lexically competent of the three School B case study students, Api, was able to 'pick up' and express text in lesson 2, despite the interactional and discourse conditions not being optimal. In lesson 1, because the lesson was so heavily orientated towards question and answer, and display responses, there was little on offer to Mele for potential acquisition and 'pick up'. In lesson 3, the teacher's strict control of the way and topic along with a high proportion of question and answer interactions and extended utterances by the teacher, overwhelmed and constrained Palo. His concentration waned at times and as a passive rather than active listener and participant, in most part any potentially available quality teacher text and expression passed him by.

In the School A Time 1 lessons analysed, in lesson 1 Ara was provided with next to no teacher text and expression, left largely to her own devices. In lesson 2, the first 20 minutes of the lesson was dominated by question and answer exchanges and the teacher recycling responses elicited from some

students. Where teacher text and expression was available to Alo in this lesson, it was neither grammatically expanding nor lexically rich, nor offered under optimising conditions for acquisition and uptake by Alo. In lesson 3, following whole class rote counting practice at the commencement of the lesson, Rana spent the rest of the lesson time working independently of the teacher at a table completing a maths sheet. Like Ara, there was no teacher text and expression on offer for most of the lesson.

At Time 2, both teachers paid explicit attention in their planning of lesson processes and materials to optimising acquisition and uptake conditions in recognition of the students' needs cognitively and linguistically. In five of the six lessons, carefully scaffolded quality text provided or triggered by the teacher was potentially on offer to the students. The shift towards achieving fully optimising conditions was significant, the teachers carefully scaffolding the availability and potential uptake of quality expressive text targeted at the students' grammatical and lexical cutting edge.

In Time 2 lesson 1, the School B teacher and her students worked collaboratively to co-construct a story text based on the pictures of a book. During the implementation period of the intervention prior to this lesson being videoed, the teacher had explicitly focused on the expression of detailed, grammatically expanded utterances and sentences in class by students in particular. The students were not only metacognitively aware and knowledgeable about the grammar and lexis of expression, but through models and practice opportunities had become increasingly skilled in expressing ideas and meanings in detail 'so others know what I mean'. In this lesson, the teacher had prepared a text as the framework story structure for expression. Using the book pictures as the expressive context, the students' spontaneous contributions were combined with the teacher's framework text to shape a meaningful, high interest, comprehensible story text of grammatical and lexical quality appropriate to topic, purpose and audience. The students were active contributors and co-constructors and given multiple opportunities to hear and try out the evolving text and expressions. As the lesson proceeded, Api, the case study student in focus in this lesson, not only had frequent opportunities to 'pick up' expression at her grammatical and lexical cutting edge, but to express the story text with increasing fullness independently. In large part, the teacher had effectively attended to the identified optimal conditions of text comprehensibility, multiple opportunities to try out notice in coming text, and in-built redundancy. The teacher structured lesson 2 and lesson 3 in a similar vein so that Palo in lesson 2, and Mele in lesson 3, were offered quality expressive text under largely optimising conditions for acquisition and uptake. Like Api, they were supportively pushed to their cutting edge of expression, grammatically and lexically, and became increasingly expressively enabled.

Like the School B teacher, the School A teacher had worked with the students at the metacognitive level, supported by explicit models and multiple practice opportunities, so that 'speaking in detail' and expressing frequently had become the embedded culture of the classroom. She planned and

structured her lessons accordingly, paying explicit attention to offering her students text of grammatical and lexical quality, and in combination with the students' contributions, creating optimising conditions for acquisition and uptake. In lesson 1, she too used a book text as the means and context for expression, skilfully stimulating and including the students' contributions into an evolving co-constructed expressive text. Alo, the case study student in focus, was not only offered frequent opportunities to try out the available in-coming text, but became increasingly able to express with confidence and fluency what was for him a grammatically and lexically challenging text. He was riveted by the context, totally engaged throughout the lesson, and meaningfully and supportively scaffolded to express text of grammatical and lexical quality, albeit still somewhat constrained in terms of word number and duration. Missing in the lesson were in-built opportunities to try out his accumulating expressive competency independent of the teacher and in fullness. Unlike in the School B lessons, Alo's had no peer buddy expressive opportunities, nor opportunities to express parts of the evolving text in fullness in the whole class context. In a subsequent lesson the students were given such opportunities but in optimal conditions during this lesson, these opportunities would have been built into the lesson structure.

In lesson 2, the School A teacher recycled the quality text shaped during a hands-on session the previous day with the students and her making stewed apple. The lesson focus was to recycle and reinforce this meaningful oral text of grammatical and lexical quality, and link it to related pictures and print text. Carefully scaffolded staging of the lesson offered Rana, the case study student in focus, in-built redundancy opportunities as the class collaboratively retrieved content and expression in the early part of the lesson, with opportunities later in the lesson to independently try out fullness of expression with her peers and with her teacher in a small group situation. Rana remained focused throughout the entire lesson, responding positively to the challenge of becoming increasingly grammatically and lexically expressive in this context. Rana, a struggling reader, was enabled to fluently and meaningfully read the word group strips related to the *'Making stewed apples'* pictures because of the effectively scaffolded inclusion of these in to the lesson structure and stages. In this lesson, the identified optimising conditions had all been attended to and successfully executed and Rana was expressively enabled accordingly.

In lesson 3, the teacher created a context in which a maths problem needed to be solved by telling the group of about 10 students an anecdote. Based at their school, the students were immediately captured by the anecdote and the realism of the maths problem. Ara, the case study student in focus, spontaneously engaged with the teacher during the telling contributing comments and additions. While the teacher responded dynamically, she did not offer Ara and the other students an opportunity to acquire and uptake the text through collaborative and individualised retelling. It was a missed opportunity, driven particularly by the need to get on with the maths problem solving component of

the lesson. During this part of the lesson, the teacher carefully scaffolded the students to collaboratively solve the maths problem posed in the context of sharing fruit and chocolate. In a relaxed dialogic manner, the students expressed ideas and solutions, Ara vocal and active during this period. She had frequent opportunities to express, was pushed cognitively as she grappled with suggesting and justifying possible solutions.

The lesson engaged the students fully, the teacher cleverly nudging the students' ideas and expressions towards a mathematically acceptable solution. The identified optimal conditions for acquisition and uptake of text, namely, comprehensibility, multiple opportunities to try out notice, and in-built redundancy, were met mathematically. In part they were also met expressively but for students such as Ara, expressing in fullness the anecdote, the mathematical problem, and suggestions and justifications towards a final solution, would have been optimising linguistically and expressively and offered her rich acquisition and uptake potential. It was not scaffolded into the lesson and was a second missed opportunity.

Both teachers recognised that optimising conditions for language and cognitive acquisition and uptake for each and every student takes time and effort. It is easy to understand why at times it is tempting and perhaps necessary to not do so or compromise somewhat. Overall, however, the shift both teachers made in the interactional and discourse patterns of each lesson, alongside planning, preparing and structuring in such as way that quality text was on offer to the students under optimising conditions for potential acquisition and uptake a great deal of the time, was significant. This pedagogical shift impacted directly on the expressive quality of the case study students' utterances throughout the lessons, perhaps with Ara as the exception in the lesson 3 example, although she may well have been in lessons 1 and 2 but this was not analysed in this study.

Dialogue and conversation

Expressively competent children have participated in frequent, scaffolding conversational exchanges with expert others, particularly their prime caregivers. In out-of-school contexts and situations, child-adult conversations occur naturally, with responsive exchanges opportunities available throughout a child's day. Optimally, in terms of a child's cognitive and linguistic development (Halliday, 2003a; Hoff, 2006), in such conversational exchanges the adult or expert others values and hones in on the child's message and meaning at each turn and is frequently elaboratively responsive. Meaning exchanges are sustained and built upon so that the child is not only a valued conversational partner but is expanded linguistically and cognitively. No less important and valuable are such exchanges in the classroom but for many teachers, to instigate and sustain frequent and rich conversational exchanges with individual children and hold collaborative conversations in small or large groups, is a challenge indeed. Reasons given include time constraints, loss of control, children's limited conversational

skills, and curriculum diversion. With a strong 'hands up, 'teacher select or permit' culture in most classrooms, the possibility for dynamic, spontaneous to and fro conversational exchanges among and between students and their teacher as the expert other and prime scaffolder, are low to nil and seldom occur. On the other hand, by relinquishing the reins of control to some extent, and being alert and open to 'picking up', validating and responding to students' spontaneous on-line utterances, 'real life' conversational exchanges can occur without 'intrusion' or subversion. When skilfully managed by the teacher, child-teacher conversational exchanges are enriching and expanding cognitively and linguistically for both students and teacher. The students are activated cognitively and linguistically, become valued and dynamic dialogic participants, and so further develop their social, cognitive and grammatical skills and competency.

In the Time 1 lessons, individualised and collaborative conversational or dialogic exchanges between the teacher and students were not evident in most part. Spontaneous contributions by students were not condoned or encouraged, both teachers firmly in control of who, what and when was expressed. In the three School B Time 1 lessons, the students' natural out-of-school tendency to express a thought or idea when it occurred to them was not encouraged. On occasion when a student expressed spontaneously in the whole class situation or to a nearby peer, the teacher made it clear this was not acceptable. In School B lesson 1, for example, Mele was on edge to contribute on a number of occasions, only to be not selected. In lesson 3, Palo, a relatively new entrant student in the class, expressed little unless directly expected to do so by the teacher, suggesting he had quickly learnt that spontaneous saying and participating in dynamic conversations was not the preferred classroom culture. In lesson 2, Api's conversational competency and potential was never opened up. The dominant IRE interactional and discourse pattern throughout the three School B Time 1 lessons analysed, and the tight control of the way and topic by the teacher, meant dynamic, conversational exchanges had no place in the lesson. Where there was potential for such exchanges to occur, they were quickly reined in. As a result, the students' mind set and behavioural responses were to 'hold in' spontaneous thoughts and ideas, comply with the culture of control by teacher, and not be conversational partners with the teacher or other potentially scaffolding students. 'Shyness' and diffidence of contributions by students were evident throughout the three lessons. A vital contributor to the students' expressive potential, dynamic conversational exchanges of ideas and meaning, had no opportunity to flourish.

Like the School B teacher at Time 1, the School A teacher exerted firm control over who, what and when ideas and meanings were expressed, with IRE interactional and discourse patterns the dominant structure of expressive exchange between the students and herself. However, because of the organisational nature of the classroom programme, orientated towards rotational small group work, students at times with the teacher and at other times occupied by tasks around the classroom, there

were occasions when students engaged in conversational exchanges with the teacher as she moved around the classroom or was at her teaching table. In the three Time 1 lessons analysed, Ara, Rana and Alo had brief conversational exchanges with the teacher. In lesson 1, Ara conversed briefly with the teacher at the beginning of the lesson, and sought to converse with her a number of other times throughout the lesson. However, with the teacher's attention elsewhere, no sustained dialogic exchange between Ara and her took place. Ara's outside school expressive experiences were highly conversational and she exhibited some frustration at not being able to engage similarly in class with her teacher. In lessons 2 and 3, Rana and Alo had fleeting opportunities to converse with the teacher as she moved around the classroom. Rana had one brief exchange with the teacher towards the end of the lesson about an organisational matter. Alo spontaneously expressed about the dinosaur in his picture to the teacher as she passed by his table, but the teacher was distracted by other students. A potentially dynamic and relevant conversation could have occurred but did not.

At Time 2, both teachers were much more conscious of the role and importance of students as engaged conversational partners throughout a lesson. The staging and interactional and discourse patterns of the Time 2 lessons were deliberately orientated towards triggering students' spontaneous contributions of ideas and meanings, capturing these into classroom text and expression, and responding conversationally and elaboratively to what was offered by the students. Both teachers relinquished tight control over who, what and when was expressed, 'hands-up', IRE patterns were replaced by a more balanced two-way exchange of ideas and meanings, and students were much more ready to and comfortable with engaging in conversational exchanges with the teacher.

In School B Time 2 lesson 1, Api spontaneously contributed to the evolving text numbers of times, these picked up, validated and incorporated into the evolving story text by the teacher. Both Api and the teacher appeared relaxed about exchanging in this way. While no sustained conversations between Api and her teacher occurred throughout the lesson, there was considerable conversational exchange potential for such exchanges. Like Api, in lesson 2, Palo did not engage in sustained conversational exchanges with the teacher or scaffolding peers, however, there was greater potential to do so than at Time 1. The structure and staging of lessons 1 and 2 was such that spontaneous dynamic student contributions were captured and validated, and while sustained conversational exchanges were on the cusp of occurring, they did not to any great extent. It was similarly the case for Mele in lesson 3.

The School A Time 2 lesson 1 was along similar lines to the School B Time 2 lessons, with spontaneous contributions by students triggered, picked up and incorporated into the evolving story text and expression. Alo did not engage in conversational exchanges with the teacher however, although the potential was there to do so. In lesson 2 the teacher engaged in conversational exchanges a number of times with students in the whole class situation and when students were working in small groups. Rana engaged in a brief personal conversation with the teacher when in the small group

situation followed by a more sustained exchange of expression as the teacher scaffolded her through independently expressing the process of making stewed apple. A spontaneous conversational exchange was there for the taking but did not occur. Lesson 3 was strongly orientated towards conversational exchanges as the teacher set the context for the collaborative maths problem solving task to follow. Ara engaged in conversational exchanges with the teacher on a number of occasions as a result of planned and explicit intention to do so by the teacher. Her, and other students' conversational contributions, made the development of context setting dynamic and relevant, and was a key contributor to Ara's and the other students' eventual problem solving outcome. The to and fro exchange of ideas and meanings had many of the features of an effective dialogic conversational exchange between child and prime caregivers. The teacher triggered and picked up student contributions and skilfully scaffolded these into the linguistic and cognitive cut and thrust of the context and problem in hand. Ara thrived in this situation, one which engaged her fully throughout 20 minutes of the lesson time. The teacher was relaxed with and keyed into spontaneous expression by the students, a significant shift from Time 1.

Overall then, at Time 2, both teachers had made changes to the interactional and discourse patterns of their lessons whereby students' spontaneous and conversational contributions were explicitly triggered, validated and captured. Spontaneous contributions by students were more frequent as a result, teachers responding to and including students' ideas and meanings into the developing text and expression of the lesson. While sustained conversational exchanges between students and teacher were not frequent, there was one effective example of this in School A lesson 3. In other lessons, the potential for quality and quantity of conversational exchanges between students and teacher was there for the taking but was not capitalised on – missed opportunities.

Self-talk

A feature of young children's regulatory behaviour is self-talk or 'private speech' (Winsler, 2007). Its exact role continues to be a matter of research interest. In this study, self-talk appears to serve as an important self-regulatory mechanism to express thoughts not for public consumption or when an audience is not available, to process and internalise in-coming text and information, to practise before saying to others, to consolidate newly acquired verbal and cognitive expressions and notions, or to simply play around with sounds, language, and ideas. All six of the case study students exhibited self-talk behaviours at different times in the Time 1 and Time 2 lessons, their private 'out loud' utterances mostly unnoticed by peers or teacher. Each student's self-talk behaviour and expression was strongly influenced by context and situation, and by their own particular framework set, including their overall confidence level and expressive competency, and whether they were more or less reflective or impulsive. Each student determined for themselves when and how to use self-talk, with no explicit attention given to the role and expression of self-talk in the class by the teacher. In all cases and

situations in this study, it would appear that self-talk served an important efficacy function, in line with current research (e.g. Winsler, 2007) which suggests overt 'private speech' expression serves to reinforce, make tasks and activities more manageable, and to improve learning. Of interest in this study is the role self-talk or overt 'private' speech played linguistically, especially in terms of acquisition and uptake.

Ara used self-talk differently to the other five case study students. In Time 1 lesson 1, left to her own devices most of the lesson to complete designated tasks and activities, Ara expressed a high level of two types of self-talk behaviours. Ara was used to stimulating conversational exchanges and dynamic interactions in her outside school contexts, and so in class, when no peer or teacher was close at hand and available to interact and express with, she engaged in self-talk. She told herself what to do, what she was thinking, identified matters for query, and described her own actions or that of others to herself. This occurred at the table when she was writing and colouring in, as she selected a book from the library corner and began to read, at the listening post, and when she took herself off to the washroom. Self-talk fulfilled an interactional and discourse gap for Ara in each of these contexts. Every now and then, Ara's self-talk was simply playing around with sounds and language, also featuring in some of Rana's self-talk behaviour and expression. At Time 2, Ara expressed far fewer self-talk utterances, influenced by the lesson structure and the availability of interactional and discourse partners. Unlike the other five case study students, she appeared to have less need of self-talk as an explicit language acquisition mechanism, preferring to express out loud to others without trying out privately before or after hand. She was a confident, fluent and highly expressive child, with a tendency towards impulsive rather than reflective expression, affecting her need to try out and express language privately.

Self-talk played an important try out and practice role for Rana and Palo in particular. In the Time 2 lessons of these two students, in an effort to uptake and acquire sometimes grammatically and lexically challenging expression and text in terms of structure and length, each engaged in some self-talk. They appeared to realise that self-talk was an enabling strategy allowing them to process and practise available in-coming text and expression, a way of 'hearing' their own text, without putting it out into the public arena. In this regard, it would appear their self-talk was an important acquisition and uptake mechanism and strategy, contributing to their later more fluent and confident expression of text previously outside their independent expressive range and competency.

In the Time 1 lessons, Rana's few self-talk utterances were her playing around with sound and language, while Palo expressed only one self-talk utterance and Alo expressed none. In contrast, Mele expressed a relatively high number of self-talk utterances in Time 1 lesson 1 and none at Time 2. Her Time 1 self-talk utterances served as an expressive mechanism when she was not offered opportunities to respond to a teacher question or prompt. On occasion, her self-talk was simply

expressing what she was observing, seemingly a way of foregrounding to herself her noticing. Alo's nil self-talk in Time 1 lesson 3, and single self-talk utterance in Time 2 lesson 2, and Api's two self-talk utterances at in Time 1 lesson 2 and single self-talk utterance in Time 2 lesson 1 might be influenced primarily by their quiet and calm manner and attitude to learning. Both exhibited very focused and mature behaviour at each Time 1 and Time 2 lesson, the topic and task in hand absorbing and determining their attention and expressive behaviour. Both had a capacity to concentrate on teacher and the lesson to such a degree that a conscious focus on self was not a strong orientation.

In this study, it is difficult to pinpoint with any certainty the role and effects of the case study students' self-talk behaviour. The how, when and what students' self-talk behaviours was variable, influenced by each student's particular framework set, the context and situation in which they are operating within, and the lesson structure. The self-talk behaviours and utterances of the six case study students were natural responsive, self-determined behaviours, and not explicitly or implicitly realised by the teacher. It could well be that by giving self-talk explicit attention, the teacher would gain greater insights into each student's moment-by-moment coping and learning pathways, and the students would realise that self-talk is both acceptable and potentially useful. On other hand, foregrounding self-talk behaviour may well result in a closing down of self-talk or dominance of self-talk over other needed attentions. It might be that simply allowing self-talk behaviour to occur naturally, as it did in this study, is best.

Summary

In this study, it was hypothesised that effects on the quality and quantity of the case study students' expression when the teacher paid explicit attention to optimising the interactional and discourse conditions alongside explicit linguistic and cognitive attention, would result in the following: a) more frequent interactions with others in pair, small, group and whole group situations, both with teacher and peers; b) an increase in opportunities to lead the way and topic at times; c) more engaged, participatory and contributory behaviour; d) an increase in the availability of text and expression at the students' grammatical and lexical cutting edge; and e) an increase in the relevance and meaningfulness of what gets expressed. Under these conditions, there would be an increase in the frequency and extent of their expression, and their expression would be of greater grammatical quality than their current competency levels would otherwise allow. With this, students would increase their current language repertoire and be pushed to towards greater expression potential in a cumulative fashion.

Evidence from the case study students' lesson analyses suggests that to a significant degree these hypothesised effects have been confirmed. Each of the case study students progressed to a greater or lesser degree in the quality and quantity of their expression between Time 1 and Time 2. While

outside school and developmental factors affecting evident changes to the quality and quantity of each case study student expression in the lessons cannot be discounted, the analysis evidence strongly suggests that it was the changes to the teacher's mindset and behaviour so that acquisition and uptake potential was optimised that was the critical difference-maker.

From the analyses and discussions of findings in Chapters 4-6, a complex picture about the expressive and interactional strengths and gaps of Year 1 and 2 students and the public and private worlds of the students and their teachers during class lessons emerges. In particular, by paying close attention to how, what, when and why each of the six case study students in micro-focus expressed and interacted at two points in time, deep level insights into the private and public worlds of teaching and learning have been revealed. The final chapter draws together and discusses these emerging insights into three macro-themes, and identifies further research directions and possibilities.

Chapter 7 Conclusion

The study

The study set out to investigate and provide evidence about the quality and quantity of Year 1 and 2 students' oral expression in low-socio economic schools, about the interactional and discourse conditions operating in these classrooms, and the effects on students' expression and cognition when teachers pay explicit attention to optimising interactional and discourse conditions to enhance students' language acquisition and use. Macro evidence was gathered about all participant students' interactional and expressive behaviours in class using CombiList, and about twelve case study students' vocabulary resources as measured by BPVS. With an emphasis on the individual in this study, six case study students' expressive resources and their interactional and expressive experiences during three class lessons were micro-analysed at two points in time (Time 1 and Time 2), six months apart. These same lessons were micro-analysed with the lens trained on the teacher to capture the interactional and discourse patterns as construed by the teacher and the effects of these on the case study students' quality and quantity of expression and interaction in particular.

Themes

Nuthall (2001) states: '...We need research that focuses on the realities of students' experience and the learning that results from that experience...It means developing a precise and accurate...scientific or replicable account of the realities of their experiences...Truth lies in the detail (p. 23).

The deep level analysis of young students' interactional realities in Year 1 and 2 classrooms in low socio-economic schools, as has been carried out in this study, offers detailed insights into how and why students are positioned expressively as members of their learning community. It uncovers the cognitive and linguistic realities of their experiences lesson-by-lesson, moment-by-moment. Students have least control over conditions that shape their learning realities; the teacher most. Therefore, detailed examination of the students' learning realities needs to be viewed alongside deep level analysis of the teacher's control of interaction and discourse, lesson-by-lesson and moment-by-moment. By so doing, the complex and subtle impact of pedagogical decisions as the key determinant of students' learning experiences can be identified. It is only by revealing the otherwise uncovered that the relationship between teaching and learning can be truly explained and interpreted (Nuthall, 2004).

By uncovering the complex layers of interactional and discourse patterns operating in twelve lessons in two classrooms through dual lenses, that of the student and that of the teacher, the complexities of

when, how and why a student expresses in a lesson is revealed. Optimising students' acquisition and uptake potential, expressively and cognitively, moment-by-moment and cumulatively, is of prime consideration. As the vocabulary and oral assessment analyses of the case study students revealed, the students' acquisitional needs are considerable. Detailed information about the extent of each case study student's grammatical and lexical expressive competencies, when converged with lessons' analyses data, offers deep insights into the nested systems of learning and teaching 'from which possible explanatory theory, models and practical applications can be derived' (Nuthall, 2004).

The micro-genetic analyses in this study can be distilled into two macro-themes: informed insights into students' quality and quantity of expression, and pedagogical 'habitus' and change. Directly related to these two themes is a third theme, methodological in nature. The means to derive the two macro-themes is a theme in its own right, that of how data is gathered and analysed to be able to plumb the depths of classroom interaction and discourse. This study offers new potential in this regard.

Theme 1

Informed insights into students' quality and quantity of expression

What a student knows and can do, and the extent of his or her acquisition and uptake potential, can never be fully known. However, a great deal more can be known by paying close attention to how, what, when and why a student expresses his or her ideas and meanings, particularly in the three inter-related domains of the classroom – the private domain of the student, the semi-private domain of peer interaction, and the teacher-controlled public domain (Nuthall, 2004). In this study, cumulative evidence about each of the case study students in particular presented a detailed profile of their expressive competencies and responsiveness, grammatically, socially and cognitively. Not unexpectedly, each of these students was like no other, with a unique set of capacities and individually construed[10] responsiveness within the context and situation they found themselves in. The 'common ground' of classroom and lesson masked each student's set of interactional and expressive realities in the classroom, as became evident when lessons were analysed through the lens of the student. What also became evident was how little the teacher knew about the unique framework set of each student, about their learning orientation and expressive performance in class, and about their acquisition and uptake realities and potential.

Insights into students' communication and participatory classroom behaviours

The students' interactional and discourse competencies and capacities were filtered through a funnel of lenses, commencing with the least fine-grained but nonetheless informing lens, the CombiList criteria. This unproblematic and not overly time-demanding assessment filter offered the researcher a reliable first cut about the extent and depth of each student's expressive competencies, capacities and

[10] The potential for understanding, representing and acting on reality (Halliday & Matthiessen, 1999)

performance. The potential use of the CombiList by classroom teachers was not pursued further in the study, but is worthy of further discussion. While each of the teachers at Time 1 expressed a concern about the grammatical and lexical quality, and the quantity, of students' oral communication and expression, their concerns were based more on impressions and anecdotal observations rather than on cumulatively assembled evidence. Imprecise or unavailable information and evidence risked imprecise or no targeting by the teacher, resulting in imprecise or no difference-making effect on the students.

As a first cut assessment tool, the CombiList offers teachers a level of precision about their students' communicative and participatory competencies and performance not generally identified or known by teachers in schools. It offers teachers a means to identify and track each student and the class as a whole at any one point in time and across time. Each student can be viewed within the best fit frame and within the frames of particular criteria. It has considerable potential as a first cut formative and summative assessment tool, and could serve to raise teachers' awareness of and attention to students' expressiveness. The CombiList data in the study is illustrative of the individualised nature of each student's profile against the 16 criteria, not one of the 80 students having exactly the same profile. A teacher needs to be alert to the individualised nature of each student's expressive behaviour as well as aware of trends across students and time. The CombiList is a useful tool in this regard, offering teachers' insights into students' communication and participation in class to inform decisions about capitalising on the strengths and addressing the gaps of each student and the class as a whole.

Insights into students' vocabulary competencies

While the CombiList is informative to a degree, it reveals little of a student's expressive resources, competencies and performance, grammatically and lexically. A much finer filter is required. Each of the twelve case study students' oral expression was put through a set of filters comprising a vocabulary assessment using the British Vocabulary Picture Scale (BPVS) and a grammatical analysis of oral text samples in response to photos selected by the student. By using BPVS to assess the case study students' receptive vocabulary knowledge, it was possible to compare their chronological and BPVS ages at Time 1 and Time 2, and track changes across time. Although the findings of such a small sample cannot be generalised, the case study students' findings may represent what is a 'typical' set of vocabulary realities of students in Year 1 and Year 2 classes in low socio-economic schools. Of the twelve case study students at Time 1, 75% had BPVS ages below or well below their chronological ages, and one student was well above. The patterns of change between Time 1 and Time 2 varied for each student. It would have been difficult to predict the individual student's vocabulary trajectory across time, and the variance between students. It was all the more important to know this by using a reliable and valid assessment tool such as BPVS. If the case study students are representative of other students in Year 1 and Year 2 classes in low socio-economic schools, then

teachers in such classes need to know with at least the same precision, the extent and depth of each of their student's receptive vocabulary competency. Without this knowledge, there is a high risk of not attending to a student's strengths and gaps in vocabulary critical to their capacity to express and to knowing how best to cater for their lexical acquisition and uptake needs and potential.

Insights into students' oral texts

To complement the vocabulary assessment data, the six School B and School A case students' oral text samples captured on video at Time 1 and Time 2 were micro-analysed using Observer XT 9.0 human behaviour software and the coding scheme outlined in Appendix 1. The quality and quantity of each utterance and set of utterances expressed in each of the student's 2 to 3 minute oral texts analysed by clause type and number, hesitancy, the number of syllables per utterance, grammaticality, and propositional relevance, provided a rich detailed snapshot of each student's expressive competencies and capacities. By paying close attention to what and how each student expressed at this level of analysis, an expressive profile not usually available to the teacher was built up. Rana, for example, at Time 1, was unable to express with confidence and fluency even simple ideas and grammatical constructions. In a general sense, this was already known by the teacher, as evidenced in Rana's CombiList assessment at Time 1. However, by micro-analysing Rana's utterances as she endeavoured to express ideas related to two different photos, more precise information was available. Instead of generalities and impressionistic evidence, exact and detailed information was potentially available to the teacher to hopefully influence her pedagogical decisions. The Time 1 School A lesson analyses suggest the teacher's pedagogical decisions were not informed by precise information about Rana's expressive competencies and that of other students in the class. The structure and orientation of the lessons would have been otherwise, had they been focused explicitly and precisely on enhancing the Rana's and all students' grammatical and lexical quality and quantity of expression.

Currently in most New Zealand schools, measures to ascertain the extent and breadth of Year 1 and Year 2 students' oral expression are extremely restricted. Some schools use JOST [Junior Oral Screening Tool] (Keaney et al., 2003), intended to be used with five year olds, the aim of which is to give useful information to teachers about a child whose oral language is of concern, the focus being on oral expression. One section of JOST is designed to identify vocabulary in a limited range of domains and response items, for example, body parts and functions; another section to identify aspects of grammar, for example verbs, prepositions, pronouns, and plurals; and the third section, to identify aspects of the child's social skills. There are few items in each section and reliability and validity information is not available. Designed as an identification screen for possible referral to a speech language therapist or some form of remediation, suggestions for interpreting the data are non-specific in JOST. For students whose responses are mostly correct in each section, a language enriched programme is recommended; for those with some correct responses in each section, an oral

language enrichment programme is recommended; and for those with few correct responses in each section, referral to a speech language therapist is recommended. It is suggested that oral language samples be collected and transcribed, but no analysis guidance is offered. Essentially, there is no specificity to inform teachers' pedagogical decisions and provisions.

In some schools, a record of oral language (RoL) is taken, either as part of the six year observation survey administered to all students on or close to their sixth birthday, or as a separate assessment. Clay's (1999) RoL is usually used, designed to provide information about a child's receptive and productive knowledge, and retention of complex language structures used by adults. As an indicator, RoL may be useful, but with no available reliability and validity information, and no interpretative guide, insights are limited. Because schools in New Zealand are more or less autonomous in making decisions about vocabulary and oral language measures used with five and six year old students, there is wide variance in practice among schools and classes. The six year observation survey is the one systematic series of assessment measures used by most schools to measure aspects of a Year 1 or Year 2 student, but with an emphasis on literacy, it is minimally useful as an assessment of oral language. It leaves teachers of Year 1 and Year 2 students in an invidious position of having only limited tools and minimal information about their students' expressive competencies. More worryingly, as is evident in this study, students miss out, their expressive acquisition and uptake potential untapped. The CombiList, BPVS and oral text assessments and analyses used in this study could well be adopted by schools to fill the existing information gap about Year 1 and Year 2 students' grammatical and lexical quality and quantity of their expression, and what they know and can do.

Insights into students' expression in classroom lessons

To further reveal the expressive realities of the six School B and School A case study students, and particularly to investigate whether students were indeed missing out, three lessons at Time 1 and Time 2 were micro-analysed. The extent to which the teachers drew on knowledge about each student's expressive competencies and the effect of teacher control over and attention to classroom interactional and discourse patterns in lessons were brought sharply into focus when viewed through the lens of the case study students.

Evidence from the study suggests that at Time 1, due to lack of teacher deep-level knowledge about the expressive competencies of each of the students, coupled with inattention to and lack of knowledge about optimising interactional and discourse conditions in the classroom for enhancing expressive acquisition and uptake, the case study students were minimally supported or pushed, cognitively and linguistically. Their acquisition needs and potential were highly constrained. Missed or unknown by the teacher was the extent, and grammatical and lexical quality, of the students' expression in a lesson - missed because the teacher's orientation was skewed towards interactional and discourse control rather than attuned to the cognitive and linguistic quality of students' utterances

and each utterance being an opportunity to enhance their acquisition potential; unknown because many utterances by students went unnoticed and unmonitored by the teacher. Peer talk at Time 1, for example, was of minimal quality cognitively, grammatically and lexically. The teacher was either unaware of this reality, or if involved in a peer talk situation as with the School B teacher in some lessons, mindful of the 'correctness' and acceptability of a student's response, rather than attentive to the student's message and meaning, and their expressive quality. Teachers were oblivious to the occurrence and potential importance of self-talk, by whom, when and why, and were pedagogically implicit rather than explicit in their use of language. Elaborative responses to students, and engaging and extending conversational exchanges, were seldom afforded.

At Time 2, armed with theoretical and practice knowledge about optimising interactional and discourse conditions in the classroom, and with heightened consciousness about the students' expressive competencies and needs, it was evident that the teachers deliberately and explicitly focused on supporting and pushing the case study students, and all students, cognitively and linguistically. The teachers' heightened alertness to the cognitive and expressive quality of students' utterances, and to optimising interactional and expressive conditions resulted in much more careful monitoring and noticing of what, how, when and why students expressed. As a result, the case study students' acquisition and uptake potential was greatly enhanced in Time 2 lessons compared to Time 1. Peer and class talk became more productive and expressively enhancing, the discourse was more dialogic and elaborative, and students were triggered to be expressive partners rather simply responders to teacher initiated and controlled discourse.

The change in the quality and quantity of expression by the case study students at Time 2 compared to Time 1 was strongly influenced by, if not due to, teachers knowing the CombiList ratings of individual and all students, the BPVS results, and their increased theoretical and practice knowledge gained through participating in the five intervention workshops. Had the teachers viewed the Time 1 lessons through the lens of the case study students *and* through a lens trained on themselves, and viewed and discussed the micro-analyses of these lessons, it is hypothesised this would have further informed and influenced the structure and orientation of their Time 2 lessons.

In the day-to-day running of a classroom, teachers seldom if ever view, analyse and evaluate their own practice by examining the minutiae of teaching and learning in a lesson. A duality view is needed. By filtering moment-by-moment interactional and discourse patterns in a lesson through teacher and student micro-analytical lenses, the relationship between teaching and learning is made more visible. The challenge for the teacher is to attend to individual differences based on precise information about each student within an informed pedagogical structure and orientation. By so doing, commonalities between students are recognised and explicitly attended to without ignoring or overlooking each student's unique framework set and their grammatical and lexical specificities of

expression. It might be argued that recording, viewing and micro-analysing the effects of teaching on learning on the quality and quantity of students' expressive generally and in lessons diverts a teacher's focus from her core task of teaching. This thesis argues it is highly desirable, if not necessary, that teachers have deep level insights into and detailed information about the effects of teaching on learning. Pedagogical changes ought not to occur for their own sake, but rather because of evidence-based insights gained through viewing teaching through the learning lens of the students.

Summary insights from the study into students' quality and quantity of expression

The filtering layers of information about all students, and in particular the case study students in this study, offered insights into these students' expressive competencies, and acquisition and uptake potential, not otherwise or previously available. Although not generalisable due to the small number of subjects in the study, the insights gained may well typify Year 1 and Year 2 students in low-socio economic classes in New Zealand schools, and indeed of students of like age in equivalent classes in other parts of the world.

Taking Time 1 as the 'typical' frame, with a typical class size of 20 Year 1 or/and Year 2, it appears such a class has an average of 7 *Yes,* 5 *Sometimes*, and 4 *No* students based on the 16 CombiList communication and participatory criteria (Table 1). The extent and depth of students' vocabulary as measured by the BPVS scores of the twelve case study students indicates that 83% of students in the class had a significant gap in vocabulary age compared to an expected average for students of equivalent age. Based on the micro-analysis of six case study students' oral texts and lessons' analyses, it appears the quality and quantity of expression by students In Year 1 and 2 classrooms in low socio-economic schools was highly constrained, and that their acquisition and uptake potential is minimally enhanced. Overall, identified expressive strengths and needs of individual students, and the students in combination, were not deliberately and explicitly attended to, and as a result, the quality and quantity of students' expression, grammatically and lexically, was minimally enhanced within and across lessons.

Theme 2

Pedagogical 'habitus' and change

A model of optimising conditions affecting the quality and quantity of expression by students and teacher was developed prior to the study, based on cross-disciplinary research evidence (Figure 1). The study's intervention drew on this model, the five workshops gradually building the teachers' theoretical and practice knowledge to inform and shape the interactional and discourse patterns operating in their classrooms, particularly during formal lessons. It was hypothesised (see Chapter 3) that at Time 1, the interactional and discourse patterns operating as evidenced in three example lessons in each teacher's classroom would not be optimising in terms of quality and quantity of

expression by students and teacher. As such, these lessons would reveal 'typical' interactional and discourse patterns as identified in the research, that is, strict control of the way and topic by the teacher, with spontaneous contributions by students not valued or capitalised on, and turn-taking tightly controlled; high levels of IRE discourse exchanges and low levels of rich, dynamic dialogic exchanges; the teacher's voice highly dominant, and often inaccessible or unnoticed by the students; high levels of student directed questioning by teacher, the majority of which are known-closed type questions; student responses and contributions infrequent and of minimal grammatical and lexical quality; minimal wait and think time available to students; low levels of in-built redundancy; an imbalance between too much and too little in response to students; low levels of dynamic engagement by students; incidental rather than explicit focus on form by teacher and students; and lesson scaffolding orientated towards curriculum coverage rather cognitive and linguistic enhancement and acquisition.

Micro-analysis of the Time 1 School B and School A lessons with the lens on the teacher and on the case study students confirms that 'typical' interactional and discourse patterns were in operation in these lessons, with consequent effect on the students' quality and quantity of expression, and the extent of enhancement of their acquisition and uptake potential. These 'typical' interactional and discourse patterns were well engrained and as became evident during workshop discussions, were largely unconscious and unnoticed by the teacher, normalised 'habitus of practice'. Both teachers were highly experienced (teacher A , 7 years; teacher B, 20+ years) and might normally be assumed to have such deeply engrained habits of the mind and pedagogy that change would be at worst near to impossible or best extremely slow and partial. This study made no such assumptions. The teachers were volunteers, keen to learn and open to making changes that would better support their students' grammatical and lexical acquisition and uptake, the students' expressive quality of great concern to both teachers. Of interest to the researcher was not primarily whether changes could or would occur, but what effects changes to interactional and discourse patterns in the classroom would have particularly on the students' quality and quantity of expression, and on their short and long term cognitive, grammatical and lexical acquisition and use. This was also of immense interest to the participating teachers who were regarded as collaborative research partners rather than 'research subjects'.

As has been discussed in detail in Chapter 5, there were significant shifts in structure and orientation of lessons by both teachers between Time 1 and Time 2. Most importantly, they made critical mindset shifts. As their theoretical and practice knowledge deepened throughout the workshops, complemented by additional readings, discussions and between-workshop trialling, so the interactional and discourse patterns over which they had most control began to shift focus. 'Habitus of practice' was to a significant degree moving towards optimising interactional and discourse

conditions. As this shift occurred, and as reported weekly by the teachers during the implementation phase, there were noticeable effects on the students' quality and quantity of expression and their acquisition readiness and uptake. In the weekly report backs, the teachers reflected on these effects and the extent of shifts they made to their own pedagogy. The cumulative evidence there in front of them, namely, changes in the students' quality and quantity of expression, motivated them to take new steps, and to hone and fine-tune the newly established and discard the old.

Like the students, while there were identifiable commonalities in 'habitus of practice' at Time 1, each teacher was different as to what, when, how and why their 'typical' interactional and discourse patterns were executed in the classroom and each lesson. As with the students, they each had a unique theoretical and practice framework set that informed and influenced their pedagogy both at Time 1 and with varying degrees of alertness and attention to 'the new' at Time 2. As highly reflective practitioners, and as the most 'expert' member of the class, with most control of the way and topic, and over self, they had an advantage over their students in terms of locus of control, cognitively and linguistically. However, in contrast to the students who showed high levels of interactional and expressive flexibility, adaptability and openness, the teachers were more challenged in this regard, 'habitus of practice' at times persistent and tenacious. All the more significant was the mindset and practice shift both these teachers made between Time 1 and Time 2, and all the more heartening it is to realise change was possible, occurring relatively rapidly in relation to the teachers' many years of engrained 'typical' interactional and discourse patterns.

Differences between the School B and School A teacher were evident at many levels. Some were simply personality differences or pedagogical quirks with minor impact on the students' quality and quantity of expression, but many represented highly significant and impacting interactional and discourse pattern variables.

Interactional patterns

Student groupings

Frequency of opportunity for students to hear and try out expression is an optimising condition for language acquisition and uptake. However, 'saying is not enough' (van Lier, 2004). First and second language acquisition research evidence (e.g Ellis, 2009; Hoff, 2006) suggests that quantity *and* quality are needed. Expression that 'pushes' students cognitively, grammatically and lexically, sometimes referred to as 'goldilocks zone' expression, or ZPD (zone of proximal development) expression, alongside frequent opportunities to hear and try out available quality expression, accounts for up to 18-40% of variance in the grammatical development of children's language acquisition, receptive and productive. In this study, how, when and why the case study students were grouped in the Time 1 and Time 2 lessons, as well as the extent of 'pushed' expression placed on the students and the

availability of quality, meaningful and engaging expression, varied considerably. These differences proved expressively significant and offer insights into how students might be grouped and supported to optimise their expressive capacities.

There were three basic ways students were grouped in and across lessons in this study: whole class, small groups of varying sizes, and peer pairings, offering five turn-taking expressive situations: teacher directed responses and interactions, collaborative saying, dialogic and conversational exchanges with more or less formality, individualised peer expression in pairs or small groups without the teacher, and in small groups with the teacher involved. The quality and quantity of expression by individual students in each interactional situation was more or less optimal dependent on topic, task, and availability of support - textual, personal and material. The students' focus, and quality and quantity of expression during these interactions, was more or less enhanced as a result.

Whole class situations in the Time 1 lessons reveal what is not optimising. Interaction dominated by IRE patterns of exchange is cognitively and expressively constraining. The teacher directing information, explanations and questions to the class group as a whole, and most usually selecting individuals to respond or contribute - a 'hand up' student or one simply identified by the teacher, results in minimal expressive quality and quantity, further supporting findings by Swain et al (1999). Collaborative saying as in 'read and say together' and rote display, pushes students expressively to some extent perhaps, but often results in cognitive and linguistic disengagement by students. Collaborative saying (Ellis, 1998) or pedagogical scaffolding (Bruner, 1983), offering a 'rich semiotic budget' of expression (van Lier, 2004), has no place. Occasions when a student expresses spontaneously, as they ought or want to do, with the teacher briefly responding, are deemed to break the 'accepted and acceptable' classroom protocol of locus of control by teacher. Dialogic or conversational exchanges occur only very occasionally and briefly. Reflective and initiating discourse with students engaged and contributing thoughts, comments, ideas in expanding cycles of dialogic exchange, does not take place. The Time 1 lessons offer clear examples of what not to do in order to optimise whole class interaction to support quality and quantity of expression.

The Time 2 lessons on the other hand, reveal what can and should be done in whole class settings to move interaction significantly towards optimising conditions that support quality and quantity of expression. The same turn-taking situations managed differently encourage spontaneous expression of thoughts, ideas, comments, and questions by students. The teacher 'picks up', values and includes students' contribution in some way. Dialogic exchanges akin to rich exchanges between caregiver and child in 'natural settings', are triggered and relished. Collaborative saying is not perform and display, but rather genuine co-construction of ideas and text, a two-way interaction determined by all participants – teacher and students. With pedagogic scaffolding, the students as co-contributors are cognitively and expressively involved and engaged, receive timely scaffolding, are 'pushed' to

express with grammatical and lexical quality, and receive frequent opportunities to express. Their acquisition and uptake potential is enhanced as a result. There is convergence of students' interpsychological and intrapsychological cognitive and expressive domains.

There were no examples of small group interaction in the School B lessons at Time 1 and Time 2 lessons. In contrast, all three School A Time 1 lessons were organisationally orientated towards small groups of students working with the teacher at the teaching table, (sometimes termed micro-teaching), while other students worked independently in other areas of the classroom. Micro-teaching has been promoted strongly in junior classes in New Zealand schools, pedagogically justified as offering students optimal teacher attention, more precise scaffolding and targeting of student learning needs and opportunities. This study challenges this practice on cognitive and linguistic grounds. Students in the micro-teaching situation may receive more individualised and intense attention by the teacher, but this study reveals other worrying effects. The teacher is frequently distracted towards or by the other students in the class, her attention diverted from the task, topic and discourse in the micro-teaching small group resulting in a general lack of cohesion. Time is of the essence and the teacher adheres tightly to a 'set' lesson structure in order to 'complete' the lesson before the next rotation is due. Students in the 'more advanced' micro-teaching group are more likely to receive a 'richer semiotic budget' than those in those deemed less competent. There is no guarantee that interactional and discourse patterns are any more optimising than in the whole class setting. Established 'habitus of practice' prevails.

What is particularly poignant is what these lessons reveal about students working independently of the teacher, ostensibly engaged in worthwhile and relevant tasks and activities. Taking the case study students as examples, the tasks by necessity were occupying but cognitively unchallenging in most part, as no teacher was available to scaffold, support and push the students. Conversational exchanges with peers were minimal, and when more sustained, of minimal grammatical and lexical quality, often not related to the task and topic in hand. On average, depending on how many micro-teaching groups are factored in, a student may be engaged in little to no learning and expressive quality and quantity in over an hour or more of class time. Depending on the independent task and activity they are engaged in, a student may be silent the majority of the time, only uttering in response to teacher directives or instructions. No students, neither those in the micro-teaching group nor those working independent of the teacher, were provided with optimal conditions to support quality and quantity of expression. This study suggests there is too great a cognitive and linguistic acquisition and uptake trade-off to justify the regular organisation of class lessons into micro-teaching small group teaching combined with independent student tasks and activities when the students are as young as five or six years of age.

Interestingly, not one of the Time 2 School A lessons was organised on this rotational basis. The teacher herself came to the realisation that too many students were disadvantaged rather than

advantaged cognitively and expressively by this pedagogical organisation. She was so strongly orientated towards providing optimising interactional and discourse conditions based on her new understandings and insights, that she construed small group work differently. In one example, with the exception of two special needs students, all students worked with the teacher, the lesson cognitively and expressively engaging and involving, in line with described optimal conditions above. The second example reveals how small group situations might optimally operate – students working independent of the teacher, based on rich, engaging and involving cognitive and expressive prior scaffolding under optimising condition for language acquisition and uptake, and further supported by hands-on directly related materials, interspersed with timely interaction and support by the teacher as she moves around the groups. Moving around groups per se does not necessarily provide increased cognitive and expressive quality and quantity, as was evident in the Time 1 lessons, however, in combination with prior effective pedagogical scaffolding and materials' support, students are pushed to think and express each at their cutting edge; they can and do scaffold each other alongside timely available mediated intervention and support (Scott, 1998). Student-student and teacher-student exchanges are relevant, richer, more sustained and frequent. There is purposeful, guided and pushed expression and learning taking place and a palpable sense of engagement and achievement by the students.

In line with Sukemune's study (1980) of effects of verbalisation on learning for five year olds working in pairs, this study reveals that optimal conditions to support quality and quantity of expression and cognition may well be absent in peer pair pairings, in contrast to other studies that suggest that pair work provides enhanced participatory and expressive opportunities (McDowell et al, 2002; Swain & Lapkin, 2001). In the School A Time 1 and Time 2 lessons no structured peer pairings occurred, however, peer pair sharing was part of all School B lessons and this offered valuable insights into how and why peer pairings may be more or less optimising, cognitively and expressively. A comparison of peer pairings in the Time 1 and Time 2 lesson suggests that optimising peer conditions are when students are metacognively aware and practically prepared to scaffold each other's saying and that quality cognitive, grammatical and lexical expression is on offer and processed prior to, during and post peer pair talk and sharing. When each student consciously pushes their saying alongside effectively supporting or being supported by the other, and turn-taking peer pair sharing is of such a length to allow for quality and quantity of expression by both students according to the focus and topic in hand, peers remain engaged, involved and participatory.

In the School B lessons at both Time 1 and Time 2, the teacher joined in and participated in peer pairings to listen, support and scaffold the students. Both times, the interaction and discourse patterns in this situation mirrored that of the whole class settings. Inevitably when the teacher joins in with peer pair sharing, the dynamics change. There is a high risk of loss of control by the students, teacher dominance, typical IRE exchange patterns, and minimal expression by each student, as occurred in the

School B Time 1 lessons. However, it need not be so if the teacher relinquishes most of the expressive control and space while poised to contribute and support when and if needed without takeover, and the students are similarly prepared and supported under optimising conditions as with peer pair sharing with no teacher involved. Whether the teacher 'dips into' peer pair sharing or lingers longer, for students to be at ease to contribute and express, for it to offer students acquisition and uptake potential by students trying out and pushing their own expression without undue interference, the teacher needs to listen more than say, and resist expressive and interactional takeover.

The micro-analysis of the School B and School A lessons at Time 1 and Time 2 offers rich insights into optimising conditions in the three basic ways students are grouped in the classroom lessons. It contributes new knowledge about the interactional and linguistic effects on students of each of the three basic grouping situations – whole class, small group, and peer pairing, when conditions or more or less optimising. Neither teacher fully explored the opening up cognitive and expressive potential of each of the three basic grouping situations, nor incorporated all three in and across the six Time 1 and Time 2 lessons. However, in combination, the twelve lessons provide a framework of optimisation, and serve as a reminder that complex social, cognitive and linguistic processes and acts cannot be divorced from context and situation nor be reduced to simple a simple set of practices.

Topicalisation

Control of the topic, activity and 'the way' interpsychologically, that is control of the social space of the classroom and lesson, what van Lier (2004) terms topicalisation, is ultimately always in the hands of the teacher, unlike the intrapsychological space of each student, over which she may be influential but holds little control. To what extent the teacher holds onto or relinquishes control is controlling in itself, driven in most part by her theoretical and pedagogical mindset. There was a significant topicalisation shift by teachers in this study as they sought to optimise conditions to enhance the quality and quantity of students' expression. They increasingly perceived how strict topicalisation control placed cognitive and expressive constraints on the students, counterproductive to enhancing their meaning-making and linguistic potential, and oppositely, they experienced the effects of relinquishing more control. Initially, relinquishing control even a little contravened the teachers' 'habitus of mind and practice', but by handing over the reins of control variously and slowly, they were increasingly comfortable with students initiating, suggesting and spontaneously contributing.

What becomes clear in this study is that by handing over expressive control, the teacher is in some part at least able to access the private world of students, their intrapsychological space of thought, ideas, experiences and values, and thus their learning and acquisition. What also becomes starkly evident is that expressive constraints, inner and outer, in turn limit the depth and extent of each student's meaning-making and acquisitional potential. The teachers experimented with juggling the complexities of leading the way whereby rich text and expression was on offer to the students, and

opening up and including the students' current cognitive, grammatical and lexical resources, and merging the two. They realised balancing the way and topic is subtle, and that teaching and learning is a partnership between and among all members of the class. Collaboratively co-constructing text, as occurred in several of the Time 2 lessons, was a way into finding that balance and experimenting with possibilities. The teachers reported with initial surprise and increasing delight that as a result students were expressing their co-constructed text days and weeks later, transferring vocabulary and grammatical structure into other text and topics, and into their writing. Clearly, learning and acquisition had occurred.

We learn from this study that the extent and manner of control needs to be fluid and flexible, is situation, context and topic dependent, that lessons become more lively, dynamic and engaging, and students more expressive and engaged, as a result of relinquishing control at least partially. By students taking over some or considerable control over what they say, when and how, students and teacher become dialogic and expressive partners. Teachers tread cautiously across the continuum from most to least control and may well backtrack when in their minds there are signs of chaos, as was the case with the School A teacher who reported the need to take tighter hold of the reins at several points across the implementation phase. However, she ventured forth again after a stocktake, as the evidence was persuasive. She realised rich rewards were on offer when the balance of control is shifted - dialogic and semiotic-rich meaning exchanges occur more often, teacher and students both gain deep insights into each other's thinking , expression and realities, and the teaching and learning relationship is more closely aligned.

Neither teacher fully explored topicalisation possibilities but came a long way in a short time, with a strong realisation that when students take greater 'control (of) the way, ….receiving assistance in expressing and developing own ideas', that is, the provision of 'acquisition rich' text, 'the resulting text and interaction contributed to language acquisition and learning' (Ellis, 1998, p. 155).

Discourse patterns

At the fore in this study was identifying and enabling students' expressive capacities and potential within the context of schooling. For the students' cognitive and expressive resources and potential to flourish, environmental conditions needed to be optimised. It required teachers to have a duality of focus and attention - providing an environment conducive to rich cognitive, grammatical, and lexical expression in the classroom and in lessons whereby acquisition and uptake potential of each student is opened up and enhanced, and providing students with the linguistic means to become increasingly expressively effective and enabled. Evidence in this study supports and contributes to existing understandings of factors affecting discourse optimisation.

Elaborative expression

At the heart of students' enhanced capacity and potential to express is the availability of grammatically and lexically rich expression that is noticed, engaged with and practised (Gass, 1997; Ellis, 2009). It is this in particular that influences and determines the expressive resources of each student. For teachers to make available text and expression of grammatical and lexical quality, they need to understand how, how much and when to provide moment-by-moment and across time for each individual student, and all students, and how to maximise their expressive resources and potential as optimally as possible within their own capacity range/s.

The School B and School A teachers both had sound grammatical knowledge and well understood elaborative style caregiver speech as they were themselves parents, although the term 'elaborative style' was new to them. They could not confidently explain the grammar of elaborative style expression and when practising in the workshops found it challenging to respond without hesitancy. Even more challenging for them was to pick up the meaning and message of the student's expression and somehow include it in their response, at the same time offering cognitive and linguistic expansion in the 'goldilocks zone' of the student, and in such a way that the student noticed and engaged with the meaning and structure.

Despite what the teachers intrinsically and professionally knew about the important role elaborative style discourse plays in the language acquisition of young children, neither had consciously considered its importance, role and implementation in the classroom. This is reflected in their Time 1 lessons where optimal elaborative style responses rarely occurred. The interactional and discourse patterns in operation in these lessons were both causal and consequential factors, exacerbated by the teachers' lack of explicit applied linguistic knowledge about language acquisition. The School B teacher's utterances tended towards being very lengthy, and cognitively, grammatically and lexically complex; that of the School A teacher, simple and not extensive. Both were outside the 'goldilocks zone' of the students. Their utterances were generally not contingent elaborative responses to students' utterances, but rather advancing the teacher's message and meaning.

During the implementation phase of the study, elaborative style expression was foregrounded in the classroom by both teachers. They explained elaborative style discourse to the students as 'saying what you mean in detail' and 'adding on more' and supported this with much noticing and practice. The School B teacher especially developed a strong culture of 'normalising' elaborative style discourse by all for all. In each School B Time 2 lesson, explicit metacognitive attention was given to this prior to commencing on the specifics of the lesson, resulting in conscious effort by the students to express with cognitive and grammatical quality. Elaborative style expression was not only part of dialogic meaning exchanges between and among teacher and students, but also the focus of discursive text shaping. The teacher became more sensitised to the message and meaning of student utterances, and

more attuned to offering students expression of grammatical and lexical quality with individual and combined 'goldilocks zone' parameters. The shift from grammatically complex and often lengthy didactic expression that dominated the teacher expression at Time 1 was marked. The School A teacher, on the other hand, was less metacognitively explicit but equally strongly orientated towards offering students 'goldilocks zone' elaborative style expression as often as possible, dialogically and discursively. The shift from grammatically simple and short expression by her at Time 1 to elaborative style 'goldilocks zone' expression at Time 2 was also marked and deliberate.

Using these two teachers as examples, no assumptions can be made that even experienced teachers have detailed knowledge about elaborative style discourse and its role and importance in language acquisition, nor how it can be transferred into classroom practice. It takes time and practice for teachers to become skilled, especially so that their responses to students are linguistically *and* cognitively enhancing. Optimally, elaborative style discourse is made explicit and attended to by all discourse members in the classroom as collaborative expressive partners. Student-student support and modelling is valued and given space, the teacher is strategic and contingent in her responses to students, offering timely cognitive and linguistic enhancement, and deliberate in foregrounding discursive text that is elaborative and meaningful.

Dialogicity

This study did not identify the extent and quality of conversational exchanges in the out-of-school lives of the case study students, however, micro-analysis of lessons clearly indicates limited and limiting dialogic exchanges at Time 1 between teacher and students, and student and student. There is considerable discrepancy between the frequency, importance and role of dialogue, particularly conversation, in shaping expressively competent children, and classroom dialogic opportunities and practice. Dialogic exchanges were largely absent in the School B Time 1 lessons, the discourse strictly controlled and dominated by teacher, with students uninvolved as discussion partners. No opportunities arose for peer dialogue either. In the School A Time 1 lessons, there was occasion for teacher-managed conversations and for peer dialogue. In neither case were these rich, dynamic and sustained exchanges of ideas and thinking, although the teacher-managed conversations were potentially rich opportunities. Between peers, dialogic exchanges were limited by the quality of the students' expressive resources and their lack of experience as partners in rich dialogue and conversation. Supporting Jenlink and Carr's (1996) observation, transcending and transforming conversations and conscious collective community dialogue were non-existent.

At Time 2, the teachers were much more alert to the importance and potential of dialogic exchanges, and endeavoured to stimulate collective dialogue within their lessons. For example, when a student spontaneously contributed an idea, the teacher responded in a manner that stimulated other students to also contribute, further mediated by her to shape a flow of linked ideas between students and teacher.

Although not sustained in the School B Time 2 lessons, in one of the Time 2 School A lessons especially, a large chunk of the lesson comprised a transactional teacher-managed conversation and discussion as identified by Jenlink and Carr (1996). In the two other lessons, the informal dialogue exchanges between teacher and student/s were sustained and enhancing expressive exchanges rather than the minimalist dialogue exchanges of Time 1. Pedagogically, there was dialogic progress between Time 1 and Time 2 but there was a long way to go before teacher-managed dialogic exchanges transformed into rich, dynamic, collective and public discourse as in Russian classrooms (Alexander, 2003).

For classrooms and lessons to become optimally dialogic, a pedagogical attitude and knowledge shift needs to take place first and foremost. Engaging in sustained dialogue in lessons is often seen as a diversion or 'waste of time' by teachers, a distraction from the 'stuff' of curriculum. Expressively, it needs to be recognised for its intrinsic value as an enriching expressive act between two people, and the important role dialogue and conversation plays in the cognitive and linguistic acquisition of children and in their lives in general (Alexander, 2005; van Lier, 2004). Children need high levels of engagement in rich and sustaining dialogue and conversation to become increasingly dialogically expressive and capable. They become enculturated into this form of discourse and have available to them many of the optimising conditions for language acquisition. For students whose level of engagement in rich, sustaining conversation and dialogue outside school is restricted, as with many of the students in this study, the classroom and lessons can fill this gap. When conversational and dialogic turn-taking using elaborative expression is explicitly taught as well as engaged in, students gain cognitively and linguistically. Slow steady crafting of students as quality dialogic exchange partners is not only possible but highly desirable as a key discourse form and learning tool.

Collaborative saying

Collaborative saying is a term used in the study to describe collaborative co-construction of text and expression by students and teacher as in two of the Time 2 lessons using an approach called dialogic reading (van Hees, 2006). With the book visuals as the stimulus and guide to shape the co-constructed text, the teacher and students were partners in constructing a narrative that partly mirrored the visual and text of the book, but was essentially a novel and unique re-construction of the original. Especially at the beginning, the teacher led the way and text more strongly, establishing with the students the basic storyline. The students were involved right from the beginning and invited to contribute ideas based on visual happenings, evident characters, and noticed features. Contributions were either spontaneous comments stimulated by the developing plot and visuals details or simply a student's own thinking directly or indirectly related. The purpose was to express a text of cognitive, grammatical and lexical quality under optimising interactional and discourse conditions, where all students were involved expressive partners, deeply engaged, frequently expressive and contributory,

control of the way and topic shared between and among students and teacher. There was heightened meaning-making where students' intrapsychological and interpsychological worlds merge and collide, resulting in the expression of a memorable, richly semiotic narrative, uniquely authored, uniquely narrated, collaborative yet individualised. The conditions were such that the students' acquisition and uptake potential was enhanced, as evidenced in analysis of the case study student in each of these Time 2 lessons. The students were engrossed in the evolving text and the telling, and expressed a text of quality and quantity with increasing fluency and confidence as the lesson proceeded.

The skill of the teacher in collaborative expression of this sort is to stimulate, involve, and engage each and all students, build in expressive redundancy by frequent and timely retelling along the way, stimulate contributions, open up spaces for thinking, commenting, viewing and feedback by students, steer but not control, co-contribute but not dominate, and intersperse collaborative expression with peer and individual expressive opportunities. In the School B lesson, collaborative saying, peer pair sharing, and individual expression were included by the teacher to optimise the students' frequency of expression and enhance their acquisition and uptake potential. The School A lesson, on the other hand, focused completely on collaborative co-construction and expression of a rich narrative text. This more singular approach was nonetheless enhancing expressively and cognitively, and the students were highly absorbed and involved in the text and process throughout. In the both classes, the teachers and their students came to the realisation that expression of this type resulted in 'clever thinking' and 'clever saying'. The students were proud of their newly acquired expressive quality and quantity, could be heard retelling post the lesson and transferred elements into other curriculum areas as noted by the teacher. The teachers and students alike found that it liberated minds and voices.

Collaborative saying has much potential in classes where students have limited expressive resources to draw on, as is true of students in the classes in this study. It is highly adaptable as illustrated in the Damhuis and Litjens (2003) approach where teacher and students engaged in small circle talk and work using collaborative saying and rich dialogic exchanges based around the contextualising stimulus of real materials and experiences. Unlike Ellis's (1998) 'lock-step' collaborative scaffolding and task-based (Ellis, 1998) approach, collaborative saying as in this study was more fluid and flexible. Dialogic exchanges and informational narrative text expression converged - sometimes merged, sometimes complemented. Collaborative discourse may challenge 'typical' interactional and discourse patterns operating in Year 1 and 2 classrooms and lessons, but the acquisitional outcomes and potential are too valuable to ignore. In combination with other optimising discourse patterns, it has much to offer students such as these case study students.

Questioning

Of all the utterance text processes identified in the lesson analyses in this study, the use of questioning features was a key determinant in the construal of discourse in the lessons. The multi-dimensional

nature of questioning - the frequency and type of questioning, by whom and to whom, and where, when and why they occurred expressively in the lesson were context dependent and specific. However, there were some noteworthy generalised trends across the lesson and some distinct differences between the two teachers.

At Time 1, the questioning patterns mirrored that identified in the literature as 'typical', with display and inferential question, closed and known, the most frequently occurring types (Cotton, 1998; Lynch, 1991; Shamoossi, 2004). The dominance of questioning utterances by both School A and School B teachers in the Time 1 lessons, the majority of which were known-closed or new-closed, highly constrained the students cognitively and expressively. In the School B case, frequently there was a volley of questions, with no think, prepare and response space between questions. The School A teacher's questions were generally more spaced and posed with an expectation of a response from students, but again, as known-closed and new-closed, display and referential questions were dominant, student responses were also highly constrained. Strict control of student responses accompanied high levels of teacher-posed questioning discourse. As a result, students' thinking and expression was framed in accordance with parameters set by the teacher's discourse and control. The number and type of questions posed by the teacher imposed considerable restrictions on the availability and potential of rich, engaging, elaborative style expression.

Dramatic shifts in questioning behaviour by the School B teacher occurred between Time 1 and Time 2. Less dramatic but nonetheless significant was the shift made by the School A teacher, especially in the number and type of questions posed. The Time 2 lesson structure and orientation was towards acquisition and uptake of quality and quantity of expression as described earlier, however, this did not result in greatly reduced lesson time involving questioning behaviour, as her style was to throw in quick prompting and triggering questions along the way. The third Time 2 lesson, although it differed very little from the Time 1 lesson averages of number and types of question, to a considerable extent questioning served to open up students' thinking and expression. There was, however, a trade off in the quantity of elaborative style expression to the students by the teacher as a result.

Like the School B and School A teachers, teachers in general find it extremely difficult to minimise their use of questioning and questions, so engrained is the habit. Potential loss of control and conflicting messages about the significant role questions play in student learning present them with a pedagogical dilemma. By minimising teacher posed questions, they feel their role as educators may be severely compromised. However, as this study illustrates, by significantly changing teacher questioning, there are significant expressive gains. As noted by van Hees (2007), for teachers never to ask questions would be unnatural and counterproductive. 'Questions can serve as effective scaffolds – a means to frame, shape and expand thinking, expression and enquiry ...to direct students' thinking and saying (van Hees, p. 116). However, there are persuasive reasons why alternatives to high levels of questioning behaviour by the teacher are needed. This study makes evident that dominating

questioning behaviour positions students as responders, their thinking and expression framed by the parameters set by teacher questions, and minimises their opportunities to engage in rich dialogic exchanges and collaborative saying.

The shift in questioning behaviour by both teachers in the study was a direct result of increased theoretical and practice knowledge, and a mindset shift. They found alternatives presented to them, such as using 'teacher prompts, probes, and contributory statements (which) stimulate and encourage students' thinking, expression and expansion' (van Hees, 2007, p. 114), expressively optimising. Attention to and inclusion of other discourse forms by both teachers, and more knowledge about questions and questioning, resulted in an easing away from questioning 'habitus of practice' towards lessons where expression of quality and quantity was increasingly available and evident.

Self talk

An unexpected discourse pattern that became evident in the lessons in this study was students' self-talk. Although self talk is not strictly a classroom discourse form in that the students engaged with self not others in an externalised expressive sense, what became clear was that the self-talk the students engaged in was a convergence of intra- and interpsychological spaces and meaning-making through mental and verbal expression (Vygotsky, 1978). It goes largely or completely unnoticed by teachers, revealed only when there is a micro lens on students' expressive realities in the classroom. There is little if any consideration or attention given by teachers to its role and potential in cognitive and expressive acquisition. As described in Chapter 6, all case study students engaged in self-talk at various times in some lessons. For four students, self-talk fulfilled an important role in enhancing their noticing of available expression and offering them 'private' practice time and opportunity. Self-talk or 'private speech' by these students was acquisitionally strategic. This study suggests that such in-built regulatory and acquisitional discourse behaviour could well be of great importance in enhancing students' cognitive and linguistic acquisition potential, and teachers would do well to observe and foreground self-talk in lessons. It may simply mean consciousness raising by giving self-talk some metacognitive attention, discussing with the children that by 'saying to themselves' they can try out what they are noticing and hearing or about to say, and conveying to them that self-talk is permitted and even desirable. One of the student's self-talk included what might be termed 'nonsense talk', playing around with sounds and words as very young children are prone to do as they experiment with language.

The fifth student's self-talk was an interesting indicator of her need to engage in dialogue and conversation in the classroom. Because her needs were not being met, she expressed to her inner other. If nothing else, it serves as a reminder that children with or without extended dialogic experience are seemingly 'wired up' to engage with others, she especially so as her life outside school offered her high levels of rich, engaging dialogic exchanges with her caregivers. She was an example

of dialogic enculturation, a child whose expressive competency in this regard was rich but curtailed by the discourse patterns in operation in the classrooms and lessons, at least at Time 1.

Theme 3

Micro-analysis of interaction and discourse patterns

To investigate Year 1 and 2 students' expressive realities in a way that is deeply revealing of the often unseen and unknown worlds of students in the context of classroom and lessons, and to develop an explanatory theory of the teaching and learning relationship involved (Nuthall, 2004), a penetrating micro-analytical lens was required. This study does not support the notion that expression in the classroom by teacher and students is 'heard', highly visible and observable, and students' expressive realities are understood and known by teachers. With teachers so deeply embedded in their own teacher-managed contexts within the complexities of processes, interactions and discourse in the classroom and lessons, deep insights into the students' expressive realities and the impact that pedagogical design and execution has on their realities remained largely hidden and unnoticed by the teachers in this study before the intervention.

Inspired and informed by the work of Nuthall and his colleagues at the University of Canterbury (1993-2004), with the realization that young students' expressive realities in the classroom is under-researched despite deep concern about the 'problem' of Year 1 and 2 students' expressive limitations in low socio-economic schools, and driven to reveal these realities and explore new possibilities, it became obvious that a micro-analytical observational study would best serve the enquiry. However, an enquiry's worth is perhaps best measured by its potential impact on student achievement and teacher practice. As discussed in Chapter 4, assessment of Year 1 and Year 2 students' expressive competencies in New Zealand schools is extremely limited, and usually does not include micro-analytical observational analysis. The assessments of students' vocabulary and expression competencies, and micro-analysis of their expression in the classroom and lessons as used in this study, has the potential to lead the way.

The researcher had become increasingly aware that teachers seldom if ever viewed the unfolding patterns of one or more of their lessons to analyse the impact moment-by-moment conscious and unconscious pedagogical choices had on their students, nor closely observed their students as they endeavoured to express a sustained descriptive or sequential oral text. Using video recording as the capturing lens of students' expression during sustained oral text expression and classroom lessons, and Observer XT and a micro-analytical tool such as that used in this study, teachers could gain deep insights into their students' expressive realities and into the relationship between teaching and learning, or more precisely, between the interactional and discourse patterns operating in the classroom and lessons, and students' expressive and acquisitional potential. While micro-analysis of observational evidence of this kind is time-consuming, precise work, what it reveals is too important

to go unnoticed and unexamined. It could be made manageable so that teachers undertake timely, continuous, explanatory guided analyses of the interactional and discourse patterns of the students and themselves so as to 'ensure effective learning (and acquisition) regardless of abilities and cultural backgrounds of the students' (Nuthall, 2004, p. 301).

The tools and processes used by Nuthall in his landmark classroom observational studies (1999-2004) guided those used for this study. However, new technologies offered new methodological possibilities as to how and what expressive realities were captured and analysed. On the horizon and not beyond reach are digital tools that allowed the researcher, and eventually will allow teachers, to capture and analyse on multiple planes '… the relations between language use and the world within which language is used' (van Lier, 2004. p. 44) in the context of classroom and lessons. With the particular taking precedence over the general – particular students, lessons, teachers, and points in time, recognising that individual students experience lessons differently, and by examining commonalities and differences between individuals at the micro-system level, meso-system level 'truths' can be uncovered. In the study, the initial point of departure was all students. Each filtering lens in the funnel of lenses through which students were passed involved fewer students, and was more fine-grained, and more detailed than the lens before, till six individual students were filtered through a micro-analytical lens. The individual realities of six case study students, three in each of two classrooms, serve as the point of departure for deriving a tentative explanatory theory of factors affecting the expressive realities of five and six year old students in low socio-economic schools and classrooms.

The capturing of potential evidence using high quality cameras and microphones was relatively simple and easy technically, and not new. Young as they were, the students in the study handled the presence of cameras and microphones without fuss and obvious distraction. Being recorded and micro-analysed was a new and somewhat challenging experience for the teachers however, despite having participated in numbers of classroom-evidence based professional development and research projects previously. As the study progressed, they became more relaxed and less tense when lessons were being video recorded, and more openly analytical and reflective about their own pedagogy, as evidenced in their self reports throughout the implementation phase and the Time 2 lesson recordings. Supported through a process of informed reflection, classroom observations with a focus on the particular began to feel increasingly professionally comfortable and important to the teachers. It could well have become 'habitus of practice' had the study continued. Breaking through teachers' pedagogical comfort zone was a necessary requisite to reveal the visible, semi-visible and private worlds of classroom interaction and discourse.

A number of interlinking informational flows were needed in order to gather data that would illuminate the study's three research questions. The approaches and tools developed and selected have served this purpose well enough to suggest their possible use by teachers – namely, BPVS to assess five and six year old student's receptive item vocabulary, and analysis of students' oral text

production in response to self-selected photos, and students' and teachers' interaction and expression during classroom lessons using Observer XT 9.0 human behaviour software.

British Picture Vocabulary Scale (BPVS)

As has been discussed elsewhere, there is minimal and varying vocabulary information gathered by teachers, receptive and productive. Until an appropriate New Zealand developed vocabulary assessment tool is available, using BPVS to assess five and six year old student's receptive item vocabulary is a recommended option. It is easy and quick to administer and mark (timing 5-8 minutes), is student-friendly and particularly suitable for young students, and the sample of words assessed represents a range of content areas such as actions, animals, toys and emotions, and parts of speech such as nouns, verbs or attributes. It has high reliability and validity coefficients, and provides a range of useful measures including standardised scores, score range descriptions, and percentile ranks. While there is some northern hemisphere bias in the pictures, and the pictures are small and sometimes obscure, these do not pose major obstacles. For the first time for the teachers involved in this study, chronological-vocabulary age comparisons and standardised scores of the twelve case study students were available. It was a revelation to them.

Human Behaviour analysis software - Observer XT (9.0) and analysing students' expressive realities

In seeking multi-faceted computer software suitable for analysis of interactional and discourse analysis, the researcher happened upon Observer XT animal and human behaviour analysis software. Used in a wide range of scientifically and technically related research disciplines globally, Observer XT has been minimally used in educational research internationally, and never in New Zealand. Compared to other analysis software examined, Observer XT had greatest potential as an interactional and discourse analysis tool and so began the pioneering work in this study of using the software to analyse students' oral text production, and interactional and discourse patterns operating during classroom lessons. Each student and teacher utterance was micro-analysed linguistically and interactionally according to each of the coding schemes across the total time of the video recording, so that a quantitative cumulative set of linguistic and interactional data was built up that could be transported into statistical programmes. By combining quantitative data and utterance transcriptions, a cumulative representation of the students' expressive realities as seen through their oral text production and the interactional and discourse patterns operating in the lessons as seen through teacher and student lenses accrued, as is evidenced in the study findings.

The software developers (Noldus, 2009) had never envisaged Observer XT being stretched to the degree of analytical complexity that it was in this study, and acknowledge the pioneering nature of this work. While further trialling is desirable to fine-tune the coding schemes, the basic analytical framework is now developed. The use of Observer XT as a classroom observational analysis tool as

developed in this study has enormous potential for educational research by academics, and for teachers in classrooms, offering them deep level insights into their students' expressive realities. As always, there are drawbacks in using Observer XT as a classroom observational analysis tool, most of which are technical. They include the cost of the software (not inexpensive), its degree of sophistication and intricacy which may challenge those less digitally literate, initially at least, and the sometimes fickle nature of the software. Noldus acknowledge all three, and have been extremely grateful for the experimental nature of this study in widening the scope of Observer XT in terms of educational observational research and foregrounding unpredicted technical hitches as they arose in the study. Using the researcher's rather limited technical expertise at the commencement of the study as the baseline, it would be within most teachers' capabilities to master the software with some training. However, should the demands in time and effort to master and use this software to analyse students' expressive realities as in this study be beyond most teachers, it nonetheless has much potential as an in-school research and analysis tool and approach managed by a teacher specialist, or as part of cross-school assessment and tracking package whereby micro-analysis of students' expressive realities becomes 'normalised' practice. Such insights are well overdue, the current gap being a major contributor to inadequate attention to addressing the students' expressive gaps and needs, capitalising on their expressive capabilities, and optimising interactional and discourse conditions in the classrooms so that the students' acquisitional and uptake potential is enhanced.

Further research

This study has provided detailed insights into the expressive realities of Year 1 and 2 students in low socio-economic schools. Because of the micro-analytical nature of the study overall, by necessity it has confined itself to a small number of subjects. Of the original four participating teachers, eighty students, twelve case study students, the study honed in on two teachers and the expressive realities of six case study students. The findings offer valuable insights into how six students' learning was shaped by their environmental realities. While this is a small study, its multi-layered findings suggest a number of important further research directions and possibilities.

Extending the study

As Nuthall (2004) suggested, while micro-genetic studies are 'a rich source of new ideas and potentially valuable insights..... , scholars must move on to studies that can produce knowledge that is ...(more) profound and generalisable...(p. 300) to produce the kind of evidence-based explanatory theory that has the potential to guide teachers' moment-by-moment decision-making and provide a valid basis that enables them to learn from their daily experiences' (p. 301). A response to this challenge would be to extend the study to involve a greater number of schools, classes, teachers and students, and to gather evidence at much more frequent intervals and across extended periods of time than was the case in this study. It may become evident that by teachers knowing more about each

student's expressive realities day-to-day, week-by-week, they are more willing and able to adjust their pedagogy in order to optimise classroom conditions according to individual students, resulting in more effective acquisitional and uptake potential being available to each student.

The timeframe of this study was over three school terms, offering insights into short term change over time. However, to follow the case study students and their teachers over a greatly extended period of time, for example over two to three years, would offer continuous evidence about the students and the teachers – whether the effects seen in this study can be sustained and expanded, or whether there is a natural regression. The design of an extended study might include further investigation into 'habitus of practice' of the teachers involved, and into the effects on the case study students post this study when they find themselves in classes where interactional and discourse patterns typify that found at Time 1 in this study.

Assessing students' expressive competencies and realities

The filters used in this study have the potential to address a worrying gap in teacher information about the lexical and expressive competencies of their students. Both CombiList and BPVS offered insights into students' participatory and expressive behaviours, and their vocabulary resources, not previously known and attended to by their teachers. Each is relatively simple and short to administer and could well be adopted by most low-socio-economic schools as a starting point to becoming better informed about and responsive to their students' expressive gaps and strengths at any point in time and across time. A future project would be to trial the usability and effectiveness of these two assessment measures alongside investigating other further measurement options. Such work is necessary in order to assess the extent of five and six year old students' expressive disadvantage in low socio-economic schools as a starting point for intervention.

Video evidence, a major source of data in this study, is a powerful teaching and learning tool offering 'continuous observational data on individual student experience' (Nuthall, 2004, p. 297). It is currently an under-rated and minimally used pedagogical tool yet has the potential to deeply affect positive 'habitus of practice' changes related to teaching and learning. Nuthall's pioneering work, in conjunction with the expanded methods and data gathering developed and used in this study derived from his work, needs to continue and be extended across more schools and classrooms. While obtaining more detailed information about students' expressive realities may place extra pressure on teachers, it must be weighed up against the potential benefits. This study suggests such work is likely to make a considerable contribution to better understanding and addressing the needs of the many cognitively and linguistically under-resourced and under-potentialised five and six year old students in low socio-economic schools.

Teachers' interactional and discourse knowledge and pedagogy

The study's intervention workshops brought to the fore some considerable gaps in teachers' knowledge about the nature of the interactional and discourse pedagogy likely to enhance the quality and quantity of students' expression. Surveying a large number of Year 1 and 2 teachers in low socio-economic schools to ascertain the extent of their interactional and discourse knowledge and pedagogy related to their students' expressive realities and needs would act as an alert and open up dialogue about causality issues related to the persistent 'tail' of achievement of Year 1 and 2 students in low socio-economic schools. To the researcher's knowledge, no such comprehensive survey has been conducted in New Zealand or internationally. A future project could create an information database and open up dialogue between teachers and researchers to work collaboratively on addressing the linguistic disadvantage of so many five and six year students in low socio-economic schools.

Study findings suggest the intervention was a critical factor in changes made by the teachers in their classroom, in turn positively affecting the quality and quantity of the case study students' participation and expression in class lessons between Time 1 and Time 2. An evaluation of the intervention workshops and a detailed identification of implementation successes and challenges from the point of view of the participating teachers in this study, and some further trialling of workshop design and content, could lead to the development of a generalisable intervention model. If this professional development were made available to more teachers, more students could benefit from the resulting pedagogical changes likely to occur.

Micro-teaching groups

A concern arising from this study is the effect on five and six year old students' learning when lessons are organisationally orientated towards rotational micro-teaching groups with the teacher working with a few students at her teaching table while the other students work on independent activities and task round the classroom. The insights gained have important implications for teaching and learning effectiveness in classrooms where such organisational and pedagogical practice is relatively frequent or dominant. It suggests that students' quality and quantity of learning, and effective pedagogy may be significantly compromised. This needs further investigation, including a) whether this study's findings are representative of some or most Year 1 and 2 classrooms in low-socio economic where such micro-teaching practices occur, b) whether differences occur when students are more or less well resourced compared to the case study students in this study, c) under what circumstances such micro-teaching practices might be more effective, if at all, and d) whether there are effect differences between students at lower or higher class levels. Considering micro-teaching groups are relatively common in New Zealand classrooms at least, and promoted as pedagogically highly effective, and there is on-going concern about the learning gap of many students in low-socio economic schools, such an investigation is of importance.

Computer-based observational analysis tools

The computer-based Observer XT human behaviour analysis software used in this study proved to be a powerful micro-genetic analytical tool of the videoed evidence. As pioneered in this study, Observer XT offers much potential in terms of observational research and as teacher professional development and analysis tool. An exciting future project would be to build on and fine tune this analytical tool for use in schools so that teachers could view and micro-analyse the expressive competencies of their students, and the interactional and discourse patterns and their effects on learning for themselves. An alternative would be to set up a group of analysis experts who could code and analyse observational video files supplied by teachers and provide quick turn-around findings and feedback. A priority component of such a development would be fine-tuning the coding schemes used in this study whereby analysing the expressive realities of Year 1 and 2 students and the interactional and discourse patterns in class lessons becomes simpler, quicker and 'normalised' evaluative practice in schools. Developing other coding schemes in response to specific analysis needs related to classroom teaching and learning is one step beyond that.

Concluding remarks

'A rich description of the environment and its effects is … necessary for an understanding of how environment supports and shapes language development' (Hoff, 2006, p. 80). This thesis has provided a rich and detailed description of the expressive and interactional realities of five and six year old students in the context of schooling. The linguistic disadvantage these students bring into the classroom, lexically and grammatically, limits their independent participatory and expressive capacities in the classroom. It is the attitude, knowledge and pedagogical choices teachers have and make in relation to the way interaction and oral discourse is operationalised in the classroom that is the potential enabler in enhancing the expressive quality and quantity of these same students. As evidenced in this study, typically the environmental conditions in Year 1 and 2 classrooms inadequately support students' language acquisition and use. What this study shows is that teachers are powerful mediators in the cognitive and linguistic expansion of their students. By explicitly attending to optimising interactional and discourse conditions in the classroom, by tuning into the linguistics as well as the curriculum content of learning, and focusing on rich and varied communicative of meaning-making exchanges informed by language acquisition knowledge and understandings, the students' expressive quality and quantity is enhanced. A rich linguistic environment where students and teacher collaboratively engage in meaningful and elaborative exchanges of ideas is at the heart of cognitive and linguistic development of five and six year old students.

'The concept is not possible without the word. Thinking in concepts is not possible in the absence of verbal thinking' (Vygotsky, 1987, p.131). Thinking verbally in the classroom requires the continual

expressive activation and merging of a child's intrapsychological and interpsychological planes. The teacher holds the key.

Appendices

Appendix 1: Analysis coding schemes

Students' oral text production

Behaviours	Modifiers per utterance
Silence: Utterance	*Clause type*
	Below clause
	Minimal clause
	Expanded clause
	Clause complex
	Multi-clause – no clause complexes
	Multi-clause – with clause complexes
	Number of clauses 0-20+
	Number of syllables 1-21+
	Grammaticality categories - syntax / lexical
	Standard English
	Minor errors
	Major errors
	Propositional categories
	Major idea
	Minor idea
	Combination – major/minor
	Incomplete idea
	Completing previous idea
	Own story + text idea
	Total own story
	Hesitancy categories
	Fluent – near native like
	A little hesitant
	Laboured

Teacher lesson interactions and expression

Behaviours	Modifiers per utterance
Silence: Lesson response	*Clause type*
	Below clause
	Minimal clause
	Expanded clause
	Clause complex
	Multi-clause – no clause complexes
	Multi-clause – with clause complexes
	Number of clauses 0-20+
	Number of words 1-21+
	Directionality
	Whole class
	Small group
	Child
	Combination
	Self
	Relatedness
	Directly related
	Somewhat related
	Unrelated
	Combination
	Text processes
	Question
	Explain
	Prompt
	feedback
	Instruct
	Comment
	Direct
	Praise
	Criticise
	Thank
	Describe
	Inform
	Confirm
	Musing
	Utterance form
	Ask
	Statement
	Both
	Question type
	Known-closed
	New-closed
	Open-known
	Open-new
	Pseudo
	Zero
	Combination

Student lesson interactions and expression

Behaviours	**Modifiers per utterance**
Silence: Lesson response	*Clause type* Below clause Minimal clause Expanded clause Clause complex Multi-clause – no clause complexes Multi-clause – with clause complexes
	Number of clauses 0-20+
	Number of words 1-21+
	Directionality Self Partner Other peers Teacher Group Combination
	Relatedness Directly related Somewhat related Unrelated Combination
	Text processes Question Explain Prompt feedback Instruct Comment Direct Praise Criticise Thank Describe Inform Confirm Musing
	Utterance volume Quiet –just audible Normal Voice Loud Shouting Inaudible
	Confidence Minimally hesitant Unconfident Confident

Appendix 2 - Intervention workshops

Overall focus of the five workshops:

a) language and cognitive acquisition in terms of schooling, and why that matters
b) implementing classroom practices that optimise interactional and discourse conditions to enhance the quality and quantity of students' cognition and expression

Workshop	**Purpose/s and contents**	**Interactional and Discourse Mode/s Workshop Handouts**
1	• Discuss and critically review own practice in terms of the quality and quantity of students' expression, and operating classroom interactional and discourse conditions • Examine and discuss: - Language acquisition evidence – first, second, pre-school, at school, including the five year factor - Learning and cognitive acquisition evidence Core focus: • Examine and discuss elaborative style discourse theory and evidence • Practice elaborative style discourse among the group and with students (+demonstration) Connecting and on-going focus throughout all workshops: • Examine and discuss optimising classroom interactional and discourse conditions	Oral and written reflection; discussion and collaborative dialogue; notes and text; live and videoed demonstrations *Handouts – notes on:* - Linguistic expansion - Language acquisition evidence - Optimising interactional and discourse conditions – notes and model Core text: *Expanding oral language in the classroom* (van Hees, 2007) - Class lesson analysis guide
2	• Report on implementation trialling and review previous workshop contents • Examine and discuss - Triggering and guiding students to express with fullness, using expanded expression (+ demonstration) - Expanding students' vocabulary – high/low frequency; 'goldilocks zone' - Explicit attention; metacognition Core focus: • Grammatical complexity and elaborative style discourse • Vocabulary expansion as part of elaborative style discourse	Oral and written reflection; discussion and collaborative dialogue; notes and text; live and videoed demonstrations *Handouts – notes on:* - Levels of knowing vocabulary; signage - Thinking and prepare; Think-pair share; Wait time - Student grouping; collaborative saying
3	• Report on implementation trialling and review previous workshop contents • Examine and discuss - Dialogicity and dialogic teaching – principles, indicators and characteristics (+demonstration) Core focus: - Dialogic reading - Collaborative dialogue	Oral and written reflection; discussion and collaborative dialogue; notes and text; live and videoed demonstrations *Handouts – notes on:* - Dialogicity and structuring extended conversations - Questions and questioning
4	• Report on implementation trialling and review previous workshop contents • Examine and discuss - Interactional patterns affecting quality and quantity of oral expressions - Optimising conditions affecting linguistic and cognitive expansion Core focus: • Optimising interactional patterns Demonstrations: - wait time; think-pair-share; collaborative gathering; balanced control of way and topic	Oral and written reflection; discussion and collaborative dialogue; notes and text; live and videoed demonstrations *Handouts – notes on:* Factors affecting usage-based language and cognitive acquisition
5	Core focus: - Recap and review previous workshop content and materials - Matters arising Examine and discuss: - implementation phase	Discussion and reflection; collaborative dialogue *Handouts:* - Self-report rating form - Self-report feedback on implementation – semi-structured form

Appendix 3: School B teacher – Comparison between Time 1 Lesson 2 and Time 2 Lesson 1

Time 1 Lesson 1	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class – with teacher – explanation of what class will be doing
00:06.7	Recap on 'big' learning intentions and a focus on specific learning intention of the lesson
01.00.4	Teacher introduces focus materials – three containers filled with water – to be used as an analogy of how the Holy Spirit fills us – explains a little; asks students to observe and think – what they see and notice
02.14.1	Students asked to buddy talk – discussing what they observe about containers – no prior input from teacher – organisation of buddy pairs – teacher works with a buddy pair while overseeing others
04.25.0	Whole class – teacher gathers student ideas – selects students to express – poses questions to elicit answer she is seeking
05.22.0	Teacher elaborates on water and overflow; moves on to container with wilting plant – explains and questions
12.04.1	Teacher identifies two important ideas about how the Holy Spirit is important to us derived from container examples – students into buddy pairs – teacher works with a buddy pair
13.40.8	Back to whole class with teacher – feedback from students – teacher eliciting responses – focused on preferred answers – students finding it difficult to fully understand and respond as the teacher would wish - use active board to summarise
16.53.2	Prior to sending students off to complete RE pages related to lesson topic, recaps on learning intention – students to think before buddy sharing
17.29.7	Back to buddy talk – to tell each what they were learning about today and whether it was easy or hard – teacher works with a buddy pair for some time before moving on to another group
20.48.3	Whole class group – teacher gathers understandings from students and identifies what they found easy or hard – realises students are struggling with concept and expressing key ideas – begins to re-explain
26.46.4	Teacher explains colouring in task and sets them off to work at their tables
27.04.8	Formal part of lesson ends

Time 2 Lesson 1	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class group – two-tiered horse shoe shape
00.22.7	Recap on speaking in detail –students and teacher read and recall prompts and example; focus on + ++ +++ signage to signify adding detail – this as a forerunner to contributing detail to the story they will develop together
04.30.3	Book as context for evolving story co-constructed by students and teacher – *The poor sore paw* – collaboratively, class and teacher begin on shaping the text
06.32.9	Student invited to express try o express the text so far – teacher supports
08.06.2	Next picture – further co-construction of story – teacher leading the way with students saying and commenting
11.46..7	Teacher selects a few students to recall and say text related to last part of co-constructed text
12.40.2	Teacher continues on to next pictures, with further collaborative shaping an oral text – student contribute alongside teacher lead text – collaborative saying
15.00.3	Api invited to construct the next piece of text – teacher and students continue with shaping the story based on the next pictures
20.26.0	Almost all the text has been shaped, students recalling and re-saying frequently – teacher invites students to recall and say the text so far – decides they should do so in buddy pairs
20.30.1	Students turn to a buddy to tell each other as much of the text as they can as related to last part shaped up together – teacher joins in with a buddy pair, supporting and prompting
25.01.4	Back to class group – selected students say parts of the text individually – teacher and other students prompt when needed - Ana supports others trying to say – quite confident and knows text well
30.47.8	Videoing stopped

Appendix 4: School B teacher – Comparison between Time 1 Lesson 1 and Time 2 Lesson 3

Time 1 Lesson 1	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class - reading title, author, of book *The new cat*
00:20:2	Whole class – identifying the theme of the book
01:32:4	Students chorus read book text
02.15.3	Teacher led discussion about Greedy Cat had done
02: 45:8	Focus on what sequencing means: students in pairs explaining – teacher works with a buddy group
3.56: 6	Back to whole class group - recap of sequence of story – negotiating order of pictures shown on active board
4:16:6	Think and prepare time before peers share with each other what they think the sequence of the pictures is – students move into buddy pairs – again teacher works with a buddy group
5:31:3	Active board – pictures the students need to put in order – students view and negotiate what mum bought first, etc, moving pictures
10:13:7	Students go through the sequence of pictures one more time to confirm order
10.53.9	Focus on nouns - 'picking up' nouns from the story
12:00:2	Buddy sharing – identifying what a noun is – teacher working with buddy pair
13:09:2	Whole class discussion - what a noun is – read learning intention about nouns - eliciting explanations and examples
15:27:7	Whole class - students identify nouns in the book text
17.36.0	Focus on using nouns from the book in own sentences – students finding it hard so given time to try out with buddy
19.19:9	Buddies telling each other their sentence – teacher with buddy pair
20:48:3	Whole class sharing of sentences - milk – teacher selects students to say their – comments by teacher
24:11:0	New word in focus – cake – buddy pair sharing – teacher with buddy pair
25:37:0	Whole class sharing of sentences – cake- as above
29.08:2	Recap on learning intention – what we learnt today
29:56:1	Buddy talk about what the learning intention was/is – teacher with buddy pair
31:50:2	Lesson videoing stopped

Time 2 Lesson 3	
Lesson time (minutes/seconds)	Lesson stage description
00:22.8	Whole class – with teacher – recap on previous Camera Cameos topics done in class
01.04.7	Recap on what it means and how – expressing in detail
01.46.5	Teacher begins telling text of Camera Cameo text: History of Mary MacKillop
03.43.1	Recap on text so far – collaborative saying
05.20.3	Teacher continues with next part Camera Cameo text
05.54.1	Another recap of text so far
07.01.7	Students given think and prepare time before buddying with peer to try out and express the text so far
08.12.8	Buddy pair expression begins – teacher works with two younger students
11.31.2	Whole class resumes – some students chosen to recall text
13.25.8	Recap again on text so far – collaborative whole class saying
14.25.3	Teacher continues with text, introducing the next part
16.05.4	Collaborative saying of the new part of the text as a recap
16.40.9	Recap of the complete text – collaborative saying
18.23.4	Teacher continues with new part of text backtracking somewhat to re-explain the last ideas and expressions of the text
19.42.4	Teacher continues with next part of the text, accompanied with some explanations
20.51.1	Collaborative recap of text starting halfway through up to new part just expressed
21.56.0	Buddy saying of new part of text – teacher's drawings on whiteboard a trigger for students' expression – teacher joins a buddy group
25.09.4	Students back into whole class group – selected students express parts of the text, supported by other students and teacher when needed
26.26.1	Mele chosen to say new part of text by herself to class
27.52.8	Other students continue – expressing to the whole class
28.59.2	Teacher continues with new part of the text
31.34.8	Lesson videoing ends

Appendix 5: School B teacher – Comparison between Time 1 Lesson 3 and Time 2 Lesson 2

Time 1 Lesson 3	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Teacher reminds students they have been learning about role models; prompts them to think and prepare to say what a role model is
00:53.5	Instructs students to move into buddy pairs to explain what a role model is; teacher overlooks and contributes to a number of buddy groups
01.57.6	Teacher moves across to Palo and his partner; questions and prompts for quite a sustained time
03.30.8	Class feedback and discussion – teacher questions without gathering responses – students read what had been written up in previous lesson – Palo can't read so mumbles
05.17.1	Teacher questions Palo to say what a role is or should be – tried to express –
06.13.9	Students with teacher guidance read what was written up on the Y-chart in previous lesson; further discussion about what a role model looks, feels and sound like
09.34.6	Students directed to read the lesson's learning intentions – teacher alerts to next step - examining/discussing role models in our families; had been previously discussing
10.56.9	Palo asked to explain who is in his family – other students also explain theirs – teacher selects and questions
12.43.3	Teacher talks at length about her family, supported by photos – who is in her family and who is her role model – students generally interested – student reads teacher written text about her mother
17.08.6	Students asked to think about their role model – ready to describe and explain to a partner; teacher prompts and questions not expecting a response
18.14.8	Focus on learning intention – teacher reads, explains and directs – students to explain who and why their role model is – reiterates what she said previously
20.08.3	Students in pairs - who their role model is and why – teacher joins Palo's pair – question and response exchanges – Palo and other student try to respond and describe
23.53.4	Class feedback / sharing – teacher selected students express who and why during this extended sharing
31.32.2	Teacher goes back to identifying the success criteria give instructions as to what they will do next
31.53.6	Videoing ends
03.30.8	Class feedback and discussion – teacher questions without gathering responses – students read what had been written up in previous lesson – Palo can't read so mumbles

Time 2 Lesson 2	
Lesson time (minutes/seconds)	Lesson stage description
00:06.5	Teacher puts up a selected picture from text *My poor sore paw* and alerts to steps and stages of lesson
01.09.4	Teacher gets students to recap on key ideas and examples about speaking in detail as a lead-in tp expressing sentences about the picture; gives students time to think
04.12.4	Teacher alerts to word groups she has prepared – directly related to the picture – to act as prompts for further sentence expression by students; a student asked to come up, select and read a word group; from this all students think and prepare a sentence using the word group
11.48.8	Buddy partner talk – students to express a sentence using *stuck in the bridge* – teacher works with Palo alone – mostly prompting by teacher – offers input and recycled text – collaborative saying at times – pushing Palo to try
14.21.9	Palo asked to express on his own to the teacher while others in pairs
15.05.2	Class feedback and sharing of their sentences – Palo selected – began on his own – teacher tended to take over
16.43.6	Other students share – some spontaneous contributions and comments
20.34.2	New word strip in focus – student selected to choose - students asked to think and prepare to use in a detailed sentence – teacher gathers selected student's ideas and sentences
24.10.9	Palo asked to share his sentence using words *the farmer* – prompting by teacher and peers
25.43.6	other students selected to express their sentences
26.45.4	New strip in focus *the traffic jam* similar approach as with previous strips
28.14.0	Students re-read all strips – Palo joins in
30.03.0	Videoing ends

Appendix 6: School A teacher – Comparison between Time 1 Lesson 1 and Time 2 Lesson 3

Time 1 Lesson 1	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Roving round classroom checking on students working on independent tasks while teacher works with two students at teaching table
02.11.8	Begins lesson with two students (Rana and Ant) at teaching table – general organisation matters
03.34.9	Distraction – teacher attends to some students in other parts of the classroom
03.54.9	Begins on book in focus for lesson – mini contextualisation to introduce the book – teacher moves through the pages, prompting students to notice key words – 'round and round'
05.37.8	Brief discussion about racing cars – instigated by students – picked up by teacher
05.50.6	Back to book – continues moving through pages of book – repeating 'round and round' students and teacher – the students try to read the text – teacher prompting for accurate reading
07.49.4	Another distraction – a behavioural issue
08.25.8	Back to reading – students continued while teacher attended elsewhere – teacher supports students as they read text – teacher also preparing materials for next step
10.28.5	Recap of story before students begin making words using movable letters – a distraction in between as teacher attends to other students – back to students making words – focus on word 'goes'
13.20.1	Teacher stops class to organise next rotation – dismisses two students working with her – attends again to organises students for new rotation – some informal conversation - gets up and moves around to check students are beginning on new tasks – takes quite some time to get everyone going and focused
18.15.3	Teacher begins with new group at her teaching table – Ara and Har – spends time on organisational matters – informal conversations ensue
19.56.2	Teacher about to begin on book reading – a mini distraction – introduces book – focus on beginning letters – teacher moves through pages – she does most of talking and contextualising – asks students to focus on words – questions students
23.08.6	Mentions one part of the story – students begin to read text – teacher supports as they try to read the words – some distraction along the way
24.53.2	Videoing ended prematurely

Time 2 Lesson 3	
Lesson time (minutes/seconds)	Lesson stage description
00:04.4	Whole class – with teacher – quick fire rote counting using number board – a usual routine – all students participating in chorus
06.41.6	Teacher organises students for independent tasks –most students work with her on mat on Maths focus – some issues arise to be sorted by teacher
08.06.5	Group on mat begin to settle ready for lesson – some matters arise – takes some minutes to sort – informal conversations ensue
09.05.4	Teacher begins with group Maths lesson – tells anecdote of tuckshop broken into to give context to the group's maths problem – students highly interested; spontaneous responses by students – informal conversations occur
10.21.2	Problem solving sharing the fruit begins – collaborative problem solving triggered by the teacher – lots of prompting by teacher to stimulate students Mathematical thinking and expression – lots of informal discussion – lots of questioning by teacher
15.02.8	Distraction as student returns to class and joins in – maths solving continues – moves onto – focus on shape and sharing – oblong / moon shape compared to circle – spontaneous contributions by students
17.57.2	Focus on sharing chocolate block – some discussion before a focus on sharing – teacher triggers and supports collaborative problem–solving; suggestions picked and tried out; counting used as check
30.21.3	Videoing ended

Appendix 7: School A teacher – Comparison between Time 1 Lesson 3 and Time 2 Lesson 1

Time 1 Lesson 2	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class – with teacher – explanation of what class will be doing
01:47.9	Begin reviewing information / knowns about T Rex
4:50.3	Class works on finding dinosaur and matching name label, which some discussion about dinosaur habits and features
20:05.5	Board work and discussion ends - teacher begins organising table work – colouring; teacher goes through possible choices for dinosaur colours
21:37.1	Teacher hands out books and students move to tables to begin colouring in
23.08.9	Teacher wanders round the classroom interacting with students at their tables as they colour in their picture
30.01.8	Lesson videoing ends

Time 2 Lesson 1	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class – with teacher – teacher contextualises story briefly and co-construction begins
00:29.2	Students invited to contribute to evolving text led by the teacher – this proceeds all of the lesson; students engrossed; teacher leads the way of the text narrative but picks up and includes students' contributions; whole lesson dedicated to oral shaping and retell of co-constructed narrative; whole lesson all students together
30.43.0	Videoing stopped – evolving story extensive but not yet complete

Appendix 8: School A teacher – Comparison between Time 1 Lesson 3 and Time 2 Lesson 2

Time 1 Lesson 1	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class – with teacher – rote counting together
02.21.1	Popcorn smell noticed by a student – some discussion about this
02.41.1	Teacher alerts students to T-Rex picture and the need to be able to count to complete the T-Rex sheet
03.30.3	Teacher and students revise counting as on sheet - 1- 20
04.38.4	Brief discussion of T-Rex on a nest
05.08.0	Teacher organises tasks and groups and sets the students off – some behaviour and organisational matters arise – Rana sent off to work at table
09.05.4	Teacher with two students, Ara and Jae, at teaching table – recalls what they did last Maths time
10.08.6	Focus on today's Maths – sharing – numbers over 20; uses jellybeans for students to work our sharing – some distraction - attention to other students at tasks
11.19.7	Teacher resumes – presents problem of sharing jellybeans evenly; works with students to decide how to do it; counting out one by one tried out
13.13.4	Teacher distracted – attention to other students; resumes with two students; some further distraction but they continue; teacher guides thinking and recording
17.25.9	Teacher suggests trying again – another turn; students count out jellybeans trying to share evenly between them; again some distraction – attends to other students interspersed between guiding students with their maths sharing
20.24.1	Teacher attends to other students then resumes with two students at her table
21.08.0	Again a distraction; resumes with students at her table; some further distraction occur followed by intense attention to jellybean sharing by two students
24.26.1	Ara begins talking about a television programme; teacher briefly responds then maths solving resumes
26.42.5	Ara and Kae sent off to work on their own; calls all students to attention; organises next rotation; teacher roves around the classroom organising and directing
29.04.5	New group of students at teacher's teaching table; still attending to others students; teacher roving, directing and guiding
30.28.1	videoing ends

Time 2 Lesson 2	
Lesson time (minutes/seconds)	Lesson stage description
00:00.0	Whole class – collaboratively students and teacher recall details about main steps and stages of making stewed apples - accompanying strips are matched and read – spontaneous saying is picked up by teacher alongside controlled scaffolding of steps by the teacher
07.04.2	Teacher triggers a recycle of text so far, mostly a recall of matching strips
14.54.3	another recycle of text strips – teacher prompting students to collaboratively say and read
16.42.2	Teacher explains and organises group work – sequence photos collaboratively as a group (talking as they do this) followed by matching text strips; teacher roves around groups guiding, prompting, interacting, revising, directing what students are doing and know;
20.46.3	A diversion – a card in the eye of a student
21.14.4	Teacher goes back to supporting groups as they work; checking if students can read strips; spends some time with Rana's group
30.17.6	Videoing ends

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