



**Institute of Education**

**DEGREE OF DOCTOR IN EDUCATION  
(INTERNATIONAL)**

**EXPLORATION OF TALK AND GESTURES FOR  
DIALOGIC SCAFFOLDING: A STUDY OF  
PRIMARY AND SECONDARY READING INSTRUCTION**

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**Statement of Originality**

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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### **Abstract**

This sociocultural research aims to explore the use of semiotic resources for meaning-making that takes place in primary and secondary reading instruction in Singapore schools and Singapore-based British international schools. The research extrapolates similar interesting observations found across age groups to make the theory generated, a redesigned dialogic scaffolding model with a gesture element, more robust. The study highlights the theoretical and methodological contributions arising from this research, along with pedagogical implications as it explores common strategies for practitioners' implementation.

While many previous studies have tended to focus on the role of speech used in classrooms, there is a growing recognition that the spoken language only provides a partial understanding to what goes on during lessons. Since students' learning experience is essentially multimodal, the study of pedagogic semiosis (meaning-making) should, in fact, involve an interplay of semiotic resources.

Using multiple case studies of one primary English and one secondary English teacher, each from the Singapore schools and Singapore-based British international schools, this observation research applies an analytical approach, informed by theories of scaffolding and gesture. The study looks at how speech and gesture are used during reading instruction (text comprehension). This involves the teacher's and/or student's 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning-making of the reading classroom. Using multimodal transcription and conversation analysis, this study discusses linguistic and multimodal features of the pedagogic discourse between teachers and students, such that the multisemiotic teaching and learning experiences are explicated.

From the findings, it is observed that while speech plays a central role in mediating learning, the use of other semiotic resources not only favours students' comprehensibility of the reading text but also gave support to their construction of meaning. The use of gestures constituted a crucial tool for the teacher's adaption of scaffolding strategies. Additionally, students benefited from the use of gestures in opportunities for self-repairs, which facilitated their understanding and meaning-making inferences in the reading classroom. It is through this interplay between speech and gesture that effective meaning-making and understanding are achieved.

### **Associated publications**

- \*Patel, N. S. (2014). Orchestration of talk and gestures for dialogic scaffolding in reading instruction: a comparative study of the UK and Singapore classrooms. Paper presented at the Graduate Student Seminar, Education and Cognitive Development Lab, National Institute of Education, 12th of March 2014, Singapore.
- Sen, N. S. (2013). Orchestration of talk for meaning making in reading comprehension instruction: a study of Singapore English secondary classrooms. Paper presented at Redesigning Pedagogy International Conference, National Institute of Education, Singapore. (Awarded Best Graduate Student Research Paper)
- Sen, N. S. (2013). Orchestration of talk for meaning making in reading comprehension instruction: a study of Singapore English secondary classrooms. Poster presented at American Educational Research Association (AERA) International Conference, San Francisco, USA.
- Sen, N. S. (2013). Orchestration of talk for meaning making in reading comprehension instruction. Paper presented at Doctoral Summer Conference, UCL Institute of Education, London.
- Sen, N. S. (2012). Orchestration of talk for meaning making in reading comprehension instruction: a pilot study of Singapore English primary classrooms. Paper presented at 3rd International Conference on Education and Educational Psychology (ICEEPSY), Istanbul, Turkey.
- \* Author's name has been recently changed to Patel, N. S. following her marriage. She was formerly known as Sen, N. S.

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There are so many people that supported me and loved me throughout this process. To think for even a moment that this thesis was accomplished through the efforts of only one person would be remiss. I feel compelled to thank several others who are key in seeing me through this journey.

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## **Reflective Essay**

### **Introduction**

It has always been my conviction that “when you want something, all the universe conspires in helping you achieve it”. A true fan of Paulo Coelho’s work, I have always lived by this quote, incorporating its principle and essence into my life endeavours. Education, for me, emerges as the perfect avenue for indulging my impulses; to contribute in a field I am passionate about, to be actively involved in educational research and to establish important links with fellow educators and academics around the world. I realised that the impetus behind this endeavour is my indefatigable desire to achieve my aspiration of becoming an academic in a field that is so close to my heart.

### **Learning Experiences**

Enrolling into the EdD (International) programme at the UCL Institute of Education has been a tremendously enriching experience. Be it the multitude of international perspectives of educational practices and research work from multinational colleagues, or the learning and sharing that takes place during the intensive, yet highly enriching course work - it has all been absolutely invigorating for me. I must admit that my four years as an EdD student at the IOE has been richly satisfying.

The first three taught modules that I had completed allowed me to widen my perspectives of educational research work conducted around the world. Teaching contents of the modules had exposed me to scholarly knowledge work, which a doctoral student is expected to demonstrate - from the fundamental theories and concepts of educational research to the methods of enquiry and analysis a research work demands. I was pleased with my learning and progress in the modules. The formative and summative feedbacks provided for each of the three assignments proved to be really useful in shaping my learning. Moreover, achieving a grade A and two grade B’s for my work only encouraged me further to solidify my research plans for the follow-up Institution Focused Study (IFS). My consistent consultations with my module tutors and main supervisor proved to be very helpful for my progress. The regular communications we had established throughout the terms strongly guided my work. I am fortunate to have had great rapport, guidance and support from them.

## **Reflections on Module Assignments**

### Foundations of Professionalism

In my Foundations of Professionalism (FOP) essay, entitled *'In Pursuit of Activist Professionalism: A Singapore Teacher-Researcher's Changing Professional Identity'*, I examined the changing nature of teacher professionalism and the drive for teacher professional development in Singapore. I had contextualised the discussion to primarily two key national initiatives under the Ministry of Education (MOE), Singapore - *Teach Less Learn More* and the *Research Activist (RA) Scheme*. Based on my personal reflections, I addressed the challenges I had faced surrounding the issues of Singapore teacher-researchers as activist professionals and changing professional identities. Towards the end of the essay, I suggested strategies, which teacher-activists can adopt in order to encourage activist professionalism among teaching professionals globally. This paper was successfully accepted for an oral presentation at the American Educational Research Association (AERA) 2013 International Conference in San Francisco and the Joint 7th SELF Biennial International Conference and ERAS Conference in Singapore.

I truly enjoyed working on the FOP assignment for much of the joy came from the opportunity to reflect on my own changing professional identity. At the heart of the paper, there were personal reflections on the evolution of my own professional identity; how it transformed, was negotiated and finally evolved, while juggling firstly, personal aspirations to be the best educator that I could be and secondly, the challenging demands of national initiatives amidst a period of redefining professionalism and pursuing activism under the MOE. I was glad that I had begun to be able to link quite clearly the theories and arguments surrounding professionalism as an area of study to my own professional practice. Following Solomon's (2007) vexing human questions of 'What is my purpose? What has been my purpose? What kind of person do I aspire to be?', as if in a state of a higher-order consciousness, I too began to mull over my own questions, 'What kind of a professional person am I? What is my professional purpose?' I realised that in the strive to develop my educational research competencies further and pursue doctorate studies, I had begun to develop a distinct professional self-image – one that stems from my personal stance as an educator, pedagogical beliefs and even epistemological assumptions.

This awareness created an 'open mind' to shape my research ideas for the

subsequent Methods of Enquiry (MOE) assignments - particularly in using my knowledge gained of different research methods relating to philosophical and sociological conceptions of knowledge to interrogate ideas and practices within my examined research context and making informed choices between methodologies relevant to my pilot (Phase 1) and main (Phase 2) research studies.

#### Methods of Enquiry 1 (MOE1)

The proposed research under my MOE1 assignment was to study the kind of talk for meaning-making that takes place in reading comprehension classrooms in Singapore primary schools. The research study entitled, *'Orchestration of Talk for Meaning Making in Reading Comprehension Instruction: A Pilot Study of Singapore English Primary Classrooms'*, aimed to tease out teachers' understanding of reading comprehension instruction and the 'orchestration of talk' in enhancing students' ability to make meaning and gain deep understanding from their 'social construction' of and 'interaction' with texts. Working on the research proposal was a natural follow-up to my initial research ideas that I had already penned for my *Statement of Research Interest* for the EdD programme application last year. I was happy to continue developing my ideas and shaping the theoretical and conceptual issues surrounding my research topic, primarily under classroom discourse and reading instruction.

I gained valuable lessons from the module as I had decided to take on a sociocultural perspective on the study of teaching and learning processes in my research study. A fundamental aim of the study is cultural interpretation of the Singapore English Language classrooms, where English Language is taught as a first language to most learners whose home language is not English Language. As Punch (1998, p.160) suggests, commitment to cultural interpretation is an 'overarching characteristic of the ethnographic approach'. I realized that ethnography does fit the research study's observational design. Besides, my plans for a conversation analysis of classroom talk stems from ethnomethodology. In addition, with consultations from my tutor as well as my supervisor, I decided that grounded theory (Glaser & Strauss, 1967) was suitably adapted for data collection processes rather than the intent to form new theory. This was because, while I had specific theoretical underpinnings to support my research aims, I prefer to analyse the data collected with an opportunity for the data to 'speak for itself', allowing for themes to emerge without any restrictive

personal lens. Therefore, its use in the pilot exploratory research was still well placed. The MOE1 paper was successfully accepted for an oral presentation at the 2013 Graduate Student Conference in Oxford University and a poster presentation at the American Educational Research Association (AERA) 2013 International Conference in San Francisco.

### Methods of Enquiry 2 (MOE2)

In the MOE2 assignment, I shifted my focus to the role of the teacher in orchestrating classroom talk in a reading comprehension instruction. This involves the teacher's 'shaping', or orchestration, particularly of the numerous 'modes' – gestures, signs, objects, speech, illustrations, (Jewitt, 2009) and resources used to support learning of planned objectives and unplanned explorations in making meaning in secondary English Language reading comprehension lessons. By the time I started work on the actual pilot study implementation, I felt that I had gained an immense amount of knowledge and skills in conceptualizing a research design and conducting one. In fact, I believed the world-class coursework experience had single-handedly been the most meaningful learning journey I ever had as a graduate student. I had managed to progress so seamlessly through the taught courses, gain the opportunity to build on my learning cumulatively and see very clearly the important linkages between my learning. Conducting the actual pilot study, presenting my chosen methods, data collection procedures and preliminary data analysis in the study had been absolutely encouraging.

In completing the MOE2 assignments, I realize that the fields of multimodality, classroom talk and reading instruction may have a noteworthy corpus of literature when they are taken as distinct and separate fields. However, there are limited studies that draw a relationship between the two fields, thus the research study critically attempts to address this gap in the literature. Having said that, reflecting on the preliminary findings and data analysis, I was confident that the study's line of enquiry would provide opportunities for me to share my research with Singapore schools - a detailed description of how teachers and students can and do use multimodal potentials in reading instruction settings. This would be an important move from currently, at best, a mere a description of the structure and meaning-making potentials of multimodal texts in Singapore schools' reading instructions. Overall, I was quietly confident that the work that I had done across the taught

courses would undoubtedly prepare me for the IFS and thesis work to come in the following years of the EdD programme. The MOE2 paper was successfully accepted for oral presentations at the ICEEPSY 2013 in Istanbul and Redesigning Pedagogy International Conference 2013 in Singapore.

### **Development of Ideas for IFS and Thesis**

Gathering feedback from all the assignments and in an effort to consolidate my learning, I made plans to discuss in greater depth the roles (e.g. epistemic authority of teachers), power relations between teachers and students and gender differences between interlocutors of the classroom for my work in the IFS and thesis. In addition, I aimed for the study to start from the ground of a distinct learning environment (reading instruction) to identify instructional efforts or features of reading instruction that may facilitate or impede the orchestration of talk for meaning-making and deeper understanding, rather than searching theoretical and empirical literature to identify elements that make a difference in general classroom talk. This would be particularly interesting in the context of an international comparative study against the backdrops of UK's and Singapore's recent reviews of national curriculum. I believe findings of the research would have practical importance for teachers from both the Singapore-based British international school and Singaporean schools as the analysis would uncover issues and areas requiring immediate attention or long-term commitment to sustain and improve reading instruction practices in both countries. New and important theoretical contribution would potentially be made to the field of classroom discourse, reading instruction and teacher education.

### **Professional Practice and Development**

With my dedication and commitment for the programme, I believe that I have made several personal achievements with respect to my early research work. Firstly, taking on my FOP assignment's summative report, I am currently working on its revisions for a potential publication in an international journal; Journal of Teacher Education. I am also extending an invitation to my module tutor for an opportunity to co-author the planned journal article. While it would be very humbling to have it accepted for publication (if successful), I aim to simply gain the experience of working on an article to ensure of its scholarly quality, worthy of constructive (hopefully positive) feedback from reviewers - even if it is not eventually accepted for actual publication.

I have had a similar collaborative co-authoring experience with my previous Masters supervisor on an article we wrote for an international journal, which was accepted and later published in the International Journal of Innovation in English Language Teaching and Research (IJELTR) in March 2014. Secondly, I was thrilled to be awarded a Grade A for my IFS paper, which was also awarded with a ‘Best Graduate Student Research Award’ at the Redesigning Pedagogy International 2013 Conference. To make the experience sweeter, the conference organisers had arranged for me to be a personal usher to one of the keynote speakers, Professor Neil Mercer, during the 3-day conference. It was surreal to receive the award from him as I had been following his work quite closely even before the start of my graduate studies. He was most interested to listen to my paper presentation and we had some great discussions about the topic. That was an experience that I will always treasure.

Currently, I am working in the Education and Cognitive Development Lab (ECDL) at the National Institute of Education, Nanyang Technological University, Singapore as a Research Fellow. Previously, I was involved in a large-scale project, ‘Core 2 Research Programme: Pedagogy and Assessment’, which was funded by the Ministry of Education. The data used in my pilot study for the MOE assignments as well as the IFS work was taken from this massive nation-wide research project. The research institute and the university had approved the ethical application for the research. Permission was granted to use the project’s data as a secondary source of data for my research work. I was grateful for this opportunity and was heartened to be able to relate my learning experiences under the EdD programme to the professional research work that I did at the research centre. Furthermore, I am in an enviable position to be able to build upon the professional development opportunities at work, for my IFS and thesis work.

## **Conclusion**

All in all, I am absolutely cognizant of the rigour, commitment and challenges of the highly demanding doctorate programme. Nevertheless, I believe, besides simply *wanting* something, *having the heart* at the right place is the quintessence of achieving success. I look forward to completing the EdD doctorate programme with a renewed passion, ardour and discipline as I embark in the work of academia.

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## Chapter One

### 1.0 Introduction

It is hard to imagine a classroom without talk as Edwards and Furlong (1978, p.10) state, “there is so much of it”. As a medium for teaching and learning (Edwards & Mercer, 1987, p.20), classroom talk also plays the role of a ‘mediator’ between teachers’ adoption and translation of syllabus into lessons, implementation of teacher-designed tasks or activities, and evaluation of learning outputs and outcomes. As “a teacher’s main pedagogic tool” (Mercer & Littleton, 2007, p.2) for “cultural and pedagogical intervention in human development and learning” (Alexander, 2008, p.93), teachers are generally aware of the fact that they need to guide students and *scaffold* their learning by balancing the control of *dialogue* between their students and themselves (Myhill, Jones, & Hopper, 2005). However, it may be problematic when one tries to define classroom talk within teaching and learning. According to Mercer and Littleton (2007), “in much research on the processes of teaching, learning and cognitive development, there has been little recognition that these three elements are connected by talk” (p.135). Nevertheless, in recent studies, there are increasing focuses on how the quality of talk seems to influence learning and the development of thinking (Mercer & Dawes, 2008). Furthermore, there are also increasing focuses on the advantages of teaching students to take part in dialogues, exploratory talk, and kinds of talk, believed through empirical investigation, to support cognitive and intellectual skills (Mercer, Dawes, Wegerif, & Sams, 2004).

In spite of this, international research still refers to the under-representation of such ‘dialogic’ practice in teaching, in which students contribute to the progression of their understanding by being given a chance to refine and work on their own ideas (Alexander, 2004; Skidmore, 2006). ‘Dialogic pedagogy’ is a term used by many to describe learning processes in which teacher and students critically interrogate the topic of study, express and listen to multiple voices and points of view, and create respectful and equitable classroom relations. Recently, Lefstein and Snell (2014) explore the term ‘dialogic pedagogy’ and develop an approach to review its central ideas. They argue that it is informed by actual practice, grounded in existing classroom conditions and is multi-dimensional. Communicative practices in the classroom include, not only communicative forms but also interpersonal relations, the



exchange and development of ideas, power, student and teacher identities, and aesthetics. Lefstein and Snell's (2014) publication explores the educational potential of classroom talk and, in particular, the promise and problems of dialogic pedagogy through the analysis of carefully chosen video clips from primary school literacy lessons. Classroom talk, in an effective and sustained way, should engage children cognitively and scaffold their understanding (Alexander, 2008). However, it is found that teachers rather than learners control what is said in the classroom - who says it and to whom. In fact, Tharp and Gallimore (1988) argue, one kind of talk predominates: the so-called 'recitation script' of closed teacher questions, brief recall answers and minimal feedback which requires children to report someone else's thinking rather than to think for themselves. This is otherwise known as 'monologic' talk (p. 93).

From a sociocultural (Vygotskian) perspective, learning is a socially situated activity and what a learner at first accomplishes only in a social setting, she or he will eventually be able to do independently (Lantolf, 2005). Individuals learn not as isolated beings, but as active members of society, what they learn and how they make sense of knowledge depends on where and when, such as in what social context they are learning (Yang & Wilson, 2006). This view of learning was first defined by Wood, Bruner and Ross when they coined the term 'scaffolding' (1976). More authors (Cazden, 1988; 2001; Hammond, 2002) have since demonstrated the merits of scaffolding. Recent publications (Sahadi & Ghaleb, 2012; McKenzie, 2011) focus on scaffolding for the teaching of reading by creating the conditions where meaningful learning is fostered. This requires an effective instructional strategy, where students need to elaborate, or generate activities, such as self-questioning, semantic mapping, summary writing, monitor learning, and construct meaning from a reading text (Sahadi & Ghaleb, 2012; McKenzie, 2011). Such strategies can be considered effective in reading instruction (McGriff, 1996). If provided with appropriate assistance, students can attain a goal or engage in a practice or task that is beyond their reach. Reiser (2004) points out that in scaffolding, learners receive support and assistance to successfully perform certain tasks and move to more complex ones. Without such assistance, these tasks would be beyond their ability; therefore, building on the acquired experience and skills, students reshape their knowledge and improve their performance.

Indeed, it is commonly agreed how critical and important the quality of classroom talk as well as the use of effective scaffolding strategies are to students' learning and developing understanding, implying consequently that certain kinds of talk need to be promoted in teaching practices, and that research needs to pay attention to investigating this issue. However, while many previous educational studies have tended to focus, intentionally or inadvertently, on the role of speech used by the teacher and students in teaching and learning, there is a growing recognition that spoken language only provides a partial understanding to what goes on in the classroom. As Baldry (2000) rightly observes that we live in a multimodal world, we constantly make meaning of our experiences multimodally. Even though language is usually the dominant resource used in classrooms, the multimodal perspective recognises that language is almost always co-deployed alongside with other semiotic resources, like gesture, gaze, images and movement (Unsworth, 2001; 2002).

In other words, while the spoken language is often used as a modality for developing effective scaffolding strategies, there has yet to be ample research studying the use of other semiotic resources (for example, the use of gestures) as part of a teacher's development of effective scaffolding strategies within reading instruction. Perhaps, there is a way to 'configure' the use of speech and gestures in constructing and developing effective scaffolding strategies to help students make meaning and gain deep understanding. For this reason, this study adopts a multimodal approach to the analysis of pedagogic discourse within reading instruction.

### **1.1 Research Context**

Supporting the current climate of advocating 'evidence-based pedagogy' (Nystrand, 2006), this cross-country comparative study examines the exploration of talk and gestures for scaffolding in reading instruction, in light of international comparisons involving Singapore-based British international junior and senior schools and Singapore primary and secondary schools. Both countries have recently been involved in various national reviews of primary and/or secondary curriculum and education. It is noteworthy to contextualize the proposed study within the backdrops of UK's 'The Cambridge Primary Review', initiated by Professor Robin Alexander (2009a; 2009b; 2010), as well as Singapore's 'Teach Less Learn More initiative' (TLLM) under the Ministry of Education (2006). In the past, Alexander (2001)

published 'Culture and Pedagogy' as one of the first major international comparisons in primary education. It features case studies of teaching and learning in five countries, France, Russia, India, the USA and England. However, there has not yet been a purposeful comparison of case studies at the primary and secondary level in any country in Europe (e.g. England) and a Southeast Asian country (e.g. Singapore). Besides, in Alexander's study, or in any other international research studies for that matter, secondary education had not been included. Hence, the uniqueness of this study, an exploration research involving Singapore schools and Singapore-based international schools, is that it focuses on classroom talk within a primary and secondary level reading instruction.

The study offers the researcher an opportunity to be closer to the data. Aligned with the interpretivist metatheory (Babbie & Mouton, 2006), this in-depth 'case-oriented comparative' study is favourable to answering the 'what', 'how' and 'why' questions of the research. Thus, the problems of comparability and concept stretching (Sartori, 1970) - the distortion that occurs when a concept does not fit new cases, (e.g. in a quantitative study of many-country comparisons) are alleviated. Besides, increasingly researchers are highlighting the seemingly casual overlook of a potentially careless use of data in education (e.g. Waldow, 2001; Moss, 2014). According to Moss (2014), "Over enthusiastic adoption and misapplication of a small number of statistical techniques for the purposes of monitoring and control are preventing many aspects of good teaching from being understood or fully recognized" (p. 371). Thus this in-depth qualitative study aims to extrapolate interesting observations found across age groups to make the theory generated - a redesigned dialogic scaffolding model with a gesture element, more robust. It highlights the observations' effectiveness and reflects on their challenges so as to recommend common strategies for practitioners' implementation, with a unique focus on the use of speech and gesture.

In recent years, the pace and extent of changes to the educational system in Singapore have posed challenges and opportunities for classroom teaching, assessment practice and the goal of education. According to Tan (2007), the increasing authority vested in schools and policies means that more high stakes assessment and curriculum development will be managed directly by schools (p. 3).

Such increased responsibility for teaching, curriculum and assessment also provides teachers with opportunities to utilise the full benefits of educational initiatives for school-based reform in order to pursue student-centred interests (Tan, 2007). In this context, the TLLM is a relevant policy for examining how recent changes in Singapore education are interpreted, reconstructed and applied on students and their learning. The TLLM movement helps teachers and schools to focus on the fundamentals of effective teaching, so that students are engaged, learn with understanding, and are developed holistically, beyond preparing for tests and examinations (MOE, 2006). With the support of school leaders, teachers ideally form teams of teacher-researchers or communities of practice to develop their own 'school-based curriculum innovations', addressing any particular area of need they deem fit for themselves and their students (e.g. improving spoken discourse strategies in the classroom).

Yet, recent studies (Kramer-Dahl, 2008; Kwek, Albright, & Kramer-Dahl, 2007) still report that the dominant interactional patterns in Singaporean English classrooms are 'Initiation-Response-Evaluation' (IRE), whole class lecture and individual seatwork in which students give either one word answers or remain silent. Classes are teacher-fronted and monologic. This pedagogy does not lead to extended oral narratives and critical thinking on the part of the students thus leading to a tension between the demands of the TLLM national initiative, the English Language syllabus and the way English is taught in the classroom (Vaish, 2008).

In the UK, according to Fisher's (2005) review of teacher-child interaction in the teaching of reading, despite changes in the curriculum over twenty years with the introduction of a national curriculum and a national literacy strategy (NLS), classroom discourse is still dominated by 'teacher talk' (i.e., monologic talk). Recently, Alexander (2014) pointed out that if UK ministers were concerned about national standards and international competitiveness in English language, Mathematics and Science, then the evidence about test gains from academically productive talk in these same subjects must on no account be ignored (p. 2). He also added that since the requirements of England's national curriculum now shape the form of teaching as well as its content, it was essential to ensure that in this curriculum, and especially in its English/Language Arts requirements for 'speaking

and listening’, talk is profiled in a way which encourages a pedagogy of dialogue rather than mere recitation and recall (Alexander, 2012). After a series of debates with the Department for Education (DfE) and a controversial comment made by the education minister that his reluctance to raise the curriculum profile of spoken language was because this would divert teachers from their much more important task of raising standards in literacy – encouraging ‘idle chatter in class’, England drafted a revised national curriculum (DfE, 2013). Interestingly, when the DfE’s secretary launched the first national curriculum draft, he said in his letter to Tim Oates, Director of Research and Assessment who led an expert panel on the National Curriculum Review “we must ensure that our children master the essential core knowledge which *other nations* pass on to their students” (DfE, 2013, p. 2). These *other nations* could very well be Singapore, whose students have been coming up in one of the top spots on the PISA podium.

Therefore, in relation to teachers’ pedagogical practices, this exploration study discusses its findings in relation to the UK and Singapore’s national curriculum for reading and speaking. In the UK’s Framework for English at Key Stage 3 (DfE, 2001) some of the objectives for improving children’s competence in speaking and listening, involve teachers supporting children in using talk for learning and thinking. While in Singapore’s English language syllabus 2010 (MOE, 2008, p. 16), in reading and viewing (which refers to receptive skills used by students for the making of meaning from ideas or information originating from books, newspaper articles and magazines), teachers are to support students in “learning to read, view, enjoy, respond to and understand critically a variety of texts” (p. 29) whereas in speaking and representing, students will develop their knowledge of language for coherent and effective communication” (p. 46). In a study by Kwek, Albright and Kramer-Dahl (2007), they highlight that both Singapore and UK share somewhat similar literacy practices. Thus, this study offers great potential to compare instructional practices of both primary and secondary literacy teachers in the selected Singapore-based British international schools and Singapore schools.

The literature on existing perspectives on the use of classroom talk and dialogic teaching for meaning-making will be reviewed critically as there is a lack of ‘clarity’ particularly for the uptake of English language learning practitioners.

Addressing this theory-practice or practice-theory gap, the study aims to make it easier for practitioners to conceptualize the utilisation of talk for meaning-making in reading instruction. Alexander (2004) has only provided descriptors of ‘dialogic teaching’ based on research in general elementary classrooms, which is why the proposed study has also set out to investigate if dialogic teaching is a way to go in reading instruction both at the primary and secondary levels. It is expected that insights into these processes as implemented in a comparative study of Anglo – Asian context, would enhance understandings of pedagogical practices, change traditional discourse patterns towards a promotion of guided construction of knowledge, especially in the context of literacy education in the 21st century.

The findings of the study provide opportunities to move away from just a simple description of the structure and meaning-making potentials of multimodal semiotic resources. Instead, it aims to achieve a detailed description of how teachers and students can and do use those potentials in reading instruction settings. Moreover, it allows the researcher to conduct a close study of how teachers and students differently ‘configure’ and put to work multimodal semiotic mediation in their meaning making experiences. The fields of multimodality, scaffolding and classroom talk particularly in reading instruction individually may have a notable corpus of literature. Given the relative dearth in the number of studies that draw a relationship between the fields, this study aims to contribute to the literature in this area.

This study selected a secondary source of video-recorded literacy lessons from a large-scale research project called ‘Core 2 Research Programme: Pedagogy and Assessment’, which the researcher was currently involved in as a member of research staff at the Centre for Research in Pedagogy and Practice in Singapore. The participating national schools were examined for the changes in teachers’ classroom practices in response to the national initiative TLLM (Core 2 Research Program Project Details: Refer to Appendix 1). However, none of the Core 2 research frameworks, models or approaches and processes for quantitative analysis (Refer to Appendix 2 for Singapore Coding Scheme 2 (SCS2) Scale Names and Passes for the Core 2 Project) were adopted for any of the 2 phases of this research study – (i) Phase 1: Institute Focused Study (IFS) pilot study; (ii) Phase 2: Thesis as main study. Building on a successful pilot study conducted at the Phase 1 IFS stage, this larger

comparative research studied the use of multisemiotic resources, speech and gestures in reading instructions in English Language primary and secondary classrooms of selected Singapore-based British international schools and Singapore schools. New data was collected from a junior school and a senior school of a Singapore-based British international school, forming a convenience sample for the study. This study also provides a cultural interpretation of the Singapore English Language classrooms, where English Language is taught as a first language to bilingual students whose home language may not be the English Language (Sen, 2010). In Chapter 3, the students' language background are described as either largely monolingual (English as first language) or bilingual (English either as first or second language). Also, a review of literature on the role of talk and reading instruction in English as first language (L1) and English as second language (L2) classrooms was undertaken before data collection commenced. This review served as the researcher's additional development of background knowledge in the area. (Refer to Appendix 5) The Phase 1 IFS study conducted in 2013-2014 piloted its adopted analytical approach. With a clear understanding of the theoretical framework informing the analysis, a Phase 2 comparative study was designed for the purpose of this larger scale comparative study.

## **1.2 Rationale for reading instruction**

The current study focuses on reading instruction, similar to text comprehension, as defined by the National Reading Panel (2000), in which studies from grades 2 to 11 are analysed. Reading instruction or widely termed as reading comprehension is not just understanding words, sentences, or even texts, but involves a complex integration of the reader's prior knowledge, language proficiency and their metacognitive strategies (Hammadou, 1991). Many cognitive language-learning tasks require the use of metacognition. Metacognition refers to "one's knowledge concerning one's own cognitive processes and products or anything related to them" (Flavell, 1976, p. 232). It also includes "the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective" (Flavell, 1976, p. 232). Bearing these definitions in mind in the context of classroom discourse research in the 21<sup>st</sup> century, one should ask: could the study of talk in a reading instruction remain as it has always been, one that is only focusing on speech? For sure, in the

new era, classrooms have changed, learners have changed, and thus it would be acceptable to expect that effective instruction will no longer be one where it is controlled entirely by the teacher's didactic style of teaching. In order to engage students to respond to a reading text, encouraging deeper understanding, surely such a 'configuration of cognitive processes' requires more than just teacher talk.

Teachers have always been exploring a variety of teaching approaches and intervention strategies to develop students' reading comprehension skills, perhaps driven by students' low scores in formal school examinations (Sen, 2010). There are many contributing factors to students not performing in reading comprehension tasks. Tan and Nicholson (1997) found that students' comprehension levels are low because of their low levels of accurate and fluent decoding. Biemiller (1999) suggested that another possible contributing reason could be more language-based; that is, students' vocabulary may be insufficient for the texts used in reading comprehension tasks or that they might even be less familiar with text genres. Pressley (2002) discussed the possibility that students may have learnt a limited set of reading strategies, for example they may be able to recall well but are weaker in more complex reading strategies for drawing inferences, synthesising and evaluation. More importantly, Pressley (2002) also claimed that students might not have been taught well in the first place to control and regulate the use of the reading strategies they may have learnt. In other research, Sen (2010) reflected—based on personal and professional experience—that students in Singapore primary English instruction are required to demonstrate their understanding by answering comprehension questions that are either multiple-choice or open-ended in nature. However, student feedback indicates many tend to experience persistent difficulties in perceiving intended meanings in reading passages. A key finding in the research supports Prain and Waldrip's (2006) argument that such difficulties arise especially given the absence of students' use of reading strategies designed to extend and deepen understanding, and opportunities to demonstrate comprehension multimodally (Sen, 2010).

English language reading comprehension instruction in Singapore is in a state of flux in response to the evolving media and technological landscape both nationally and globally (Sen & Towndrow, 2013). On the one hand, Ministry of Education curriculum developers recently combined reading instruction with 'viewing' in a



move that acknowledges the multiplicity of textual formats employed in contemporary communicative contexts. As a result, teachers are now required to develop students' reading and viewing skills, learner strategies, attitudes and behavior, and text type-specific comprehension skills and strategies, strengthened by exposure to wide reading and viewing (Ministry of Education, Singapore, 2008, pp. 37-45). They are also encouraged to teach reading through the development of strategies including the use of prior knowledge, contextual clues, asking questions about texts read or viewed, making predictions, noting and recalling main ideas and key details, and making inferences (Ministry of Education, Singapore, 2008, pp. 39-43). At first glance, these seem to be reasonable and practicable suggestions but, in fact, they cut against the grain of actual practice in local classrooms. For example, in research on English literacy practices in Singapore secondary schools, Kramer-Dahl (2008) citing McDonald (2004) found the teacher was often acknowledged as "the interpretative authority on the text for the students (and) mediates the text to the students" (p. 18). According to Kwek, Albright, and Kramer-Dahl (2007), this mediation typically involves clear predictable responses by students as they perpetuate single interpretations of texts. As for instruction, work done tends to focus on the mechanical and/or procedural nature of tasks rather than on literacy issues or cognitive dimensions in particular (pp. 73-74). Hence, in line with the researcher's interest in classroom discourse and reading research, this study was designed to explore how the use of multisemiotic resources, particularly speech and gesture, would contribute to the literature on the theory of scaffolding and dialogic teaching.

### **1.3 Research Questions**

This study seeks to answer the following research questions.

- (i) What range of semiotic resources do the teachers and students employ?
- (ii) What evidence of contingency, fading and transfer of responsibility do the teachers demonstrate?
- (iii) What role does the use of gestures play in the teachers' and students' formulation of repairs?
- (iv) How does the use of gestures complement the teachers' construction of scaffolding strategies?
- (v) How can teachers and students employ the use of speech and gestures to achieve a dialogic approach to teaching and learning?

## Chapter Two

### 2.0 Review of Literature

#### 2.1 Whole-class interaction and the IRE/F cycle

Sinclair and Coulthard (1975) analysed, from a sociolinguistic perspective, the structure of classroom talk (CT) in secondary classes. In their analytical model of CT, they categorised CT under five hierarchical levels of 'lesson', 'transaction', 'exchange', 'move' and 'act'. Sinclair and Coulthard are remembered for their description of the moves in the 'I-R-F' exchange structure, which refers to an initiation by a teacher (where I refers to initiation) that elicits a response from a student (where R refers to response), to be followed by a feedback from the teacher (where F refers to feedback). In addition, as part of Mehan's (1979) ethnographic study that aims to look into the social organisation of classroom lessons, he focused on analysing the structure of the teacher-student interaction. He used the exchange structure of 'I-R-E' (where E refers to evaluation) to describe the turns of talk between the teacher and students, before using the frequency of the moves: I, R or E to characterise the CT of the whole lesson. These studies followed a systematic analysis of the classroom interaction, depending on defining categories and estimating frequencies. While these studies can be seen to start the movement from systematic observations towards insightful observations of CT, they are, however, less designed around the development of understanding and meaning making (Edwards & Mercer, 1987; Christie, 2002).

Nassaji and Wells (2000) point out that the teacher has a variety of options in the F move of the IRE/F though teachers do not always exercise this variety of options. They show that even within the traditional "triadic dialogue" or IRE/F, by choosing the right kind of question and follow up move, the teacher can create a more 'dialogic' classroom. In Alexander's (2001) international, cross-cultural research, involving 'dialogic teaching', valuable insights into the ways in which pedagogical assumptions shape dialogue in elementary/primary classrooms are provided, showing how teachers can encourage students to participate actively in extended dialogues which enable the students to articulate, reflect upon and modify their own understanding. Similarly, Hardman, Smith, and Wall (2003) analyze lessons from the literacy hour, which was mandated in the national literacy strategy (NLS) in the UK.

The literacy hour was firmly based upon criteria aimed at improving standards of literacy highlighted in the National Curriculum that was introduced to schools in 1988. This sets out details of what must be taught, the standards that should be achieved at different stages of the education sequence and recommends a minimum teaching time for core subjects (Machin & McNally, 2004). Through detailed transcripts Hardman et al show directive teaching with an overuse of IRE/F in which the last move is mainly evaluative. They also found infrequent use of “uptake” which Nystrand, Gamoran, Kachur, and Prendergast (1997) define as the teacher’s use of the students’ response to extend the dialogue. Similarly, Moss (2004) notes how the literacy hour restricts opportunities for teaching more complex, text-level literacy competencies, which involve greater student autonomy. According to Moss, “tasks shrink to fit the time slots available, whilst the time slots available are determined by the need to cover the curriculum” (p. 129). In another study of Years 5 and 6 in English primary schools in England, it was found that classroom talk was more directional and less cognitively demanding, with fewer open and uptake questions (Higgins, Smith & Wall, 2005). Similarly, Skidmore, Perez-Parent, and Arnfield’s (2003) study of guided reading and writing in England, analysed examples of discussions during the guided reading session in four primary schools, visiting each of them three times. On each school visit, they recorded the same group of six Year 6 children (10–11-year olds) working with their class teacher. They found that teachers were replicating whole-class discourse patterns as teachers did most of the talking, asked mainly closed questions, and tightly managed the turn taking and direction of the talk (Skidmore, Perez-Parent, & Arnfield, 2003). Also, in Abd-Kadir and Hardman’s (2007) research, they study transcripts from Kenyan and Nigerian English classes where an overuse of the IRE/F format does not allow the children to engage in higher order thinking or learn new knowledge.

Many researchers, teachers, and students would agree that teachers often dominate talk in classrooms. In Alvermann et al.’s (1996) study, an eighth grade student who was interviewed, shared, “talk is one of the things we are pretty deprived of at school” (p. 253). While in Coppola’s (2003) study, when an English as a second language (L2) teacher told her students to calm down, they lamented that they “had not talked all day” (p. 182). Scholars explain that teachers typically engage students in a question-and-answer routine or ‘recitation’. Alvermann, Dillon, and O’Brien

(1984) characterize recitation as “a rapid fire question and answer format aimed primarily at ensuring factual or knowledge level learning among students” (p. 5). As a classroom talk structure, or speech exchange system, recitation follows a very strict pattern in which teachers initiate a topic (I), students respond (R), and teachers evaluate (E) the student’s response (IRE).

According to many scholars, IRE is the most frequently occurring classroom discourse pattern (Cazden, 2001; Mercer, 1995, Nystrand et al 1997). Cazden describes it as “the *default option* – doing what the system is set to do ‘naturally’ unless someone makes a deliberate change” (p. 31). In the typical IRE/F sequence, teachers make twice as many utterances as students and student responses are usually limited to a single word or phrase (Nystrand, 1997). In their study of various bilingual education program models, Ramirez, Pasta, Yuen, Billings and Ramey (1991) found that students either listened or responded with non-verbal gestures or actions in over half their interactions with teachers. When students did respond, their answers were typically limited to simple information recall statements. Almasi (1996) explains that repetitive IRE chains characterize recitation and provide little opportunity for students to interact with one another or construct meaning collaboratively. In fact, most recitation questions have pre-specified, or already known, answers. The students’ job is to recite these answers. Consequently, the epistemic function for students in recitation seems to be that of reproducer of knowledge as opposed to producer of knowledge.

In traditional recitation talk structures, knowledge and meaning reside in the teacher and the text, not in the student. Almasi (1996) explains that in recitation there is little interaction among students, so the teacher is the member of the group whose thoughts might influence a person’s interpretation. The fact that the teacher determines the questions that will be asked, the order of those questions, and the correctness of students’ responses to those questions means that the teacher becomes the ultimate interpretive authority. Students will tend to shape the nature of their responses to meet their perceptions of what the teacher wants or to construct an interpretation favored by the teacher. Meaning is then viewed as being located within the text and can be extracted or realized by students through teacher questioning (p. 7). However, as Barnes (1990) and Rubin (1990) explain, recitation serves a

legitimate epistemic function in schools. Rubin portrays it as a suitable vehicle for reproducing or reciting content knowledge and calls recitation “knowledge-reproducing talk.” Barnes puts recitation forward as a way that students present and teachers evaluate learning. Accordingly, he calls this speech exchange system “presentational talk.” So, when the goal is to recite or present knowledge, the IRE is an appropriate talk structure.

However, when the goal is to develop or transform meaning, increase higher order thinking, promote academic language, facilitate unconstrained literacy skills, and navigate large problem spaces, the recitation speech exchange system is a misfit. If Vygotsky (1981, 1994) and Swain (2000) are correct and both higher-level thinking and language are realized through and within talk, then the overuse or misuse of the IRE talk structure is potentially devastating for English language learners. Within this common classroom talk structure, opportunities to develop complex language and thinking skills are extremely limited. Barnes (1990) explains that if we take seriously what constructivist theorists tell us about learning, we see that, if teachers rely too much upon presentational talk and writing, this leaves the students no time for ‘working on understanding.’ We should not expect them to arrive without having traveled (p. 56).

## **2.2 Monologic and Dialogic Talk in the Classroom**

In recent years of CT research, Michaels, O’Connor and Resnick (2008) studied classroom discussion practices that would lead to reasoned participation by all students. Their study emphasises the careful ‘orchestration of talk’ and tasks in academic learning - sensemaking and scaffolded discussion. Furthermore, they echo Mercer and Dawes (2008), that the configuration of ‘particular forms of talk’ is “seen as the primary mechanism for promoting deep understanding of complex concepts and robust reasoning” (pp. 284). Within the perspectives of ‘orchestration of talk’, the image of a teacher as the ‘orchestrator’ of talk in many research studies has always been limited to one who “conducts responses from the class, signals who should contribute, and controls the outcomes” (Myhill, 2010).

Edwards and Westgate (1994) also elaborate a teacher’s role in whole-class teaching as one who

“takes turns at will, allocates turns to others, determines topics, interrupts and re-allocates turns judged to be irrelevant to those topics, and provides a running commentary on what is being said and meant which is the main source of cohesion within and between the various sequences of the lesson” (p. 46).

Notably Myhill (2010) stresses the evident differential power relations between teacher and students, which seem to affect the configuration of talk in class.

Transforming classroom talk into an instrument of greater rigour is easier for some teachers than others, for it may be deemed as detrimental to classroom control. A move from recitation or IRE/F to exploratory or reciprocal talk necessitates a loss of control over what is said, how it is said, and who says it. However, since most transactions in school take place through linguistic interactions initiated by the teachers, IRE/F is regarded as the main indicator of the teacher–student interaction (Wells & Arauz, 2006), with the teachers regulating the students’ participation in the class activities through the management and control of linguistic exchanges (Burns & Myhill, 2004). The IRE/F structure is also associated with “traditional” pedagogy (e.g. Cazden, 2001; Edwards & Mercer, 1987), particularly because of the types of questions teachers use to initiate the exchanges. More often than not, these are questions to which the teacher already knows the answer, which has the effect of limiting students’ contributions. Those contributions are also the ones positively evaluated in the teacher’s evaluation move. Therefore the effect of the IRE/F dialogue structure on students is that they learn to follow the cues that the teacher uses to guide them towards the correct answer instead of developing the ability to participate genuinely in the discourse of the discipline (Edwards & Mercer, 1987; Mercer, 2005).

Tharp and Gallimore (1988) argue that the IRE/F sequence is essentially a monologic recitation script, providing few opportunities for students to voice their ideas or perspectives. They contrast it with dialogic discourse, which promotes reflexive thinking, intellectual curiosity, and the exploration of alternatives. From this perspective, monologic and dialogic talk can be conceptualised as binary opposites and as such are proving useful for those engaged in classroom-based observational research, where, following Bakhtin, traditional patterns of classroom discourse are increasingly identified as monologic, and contrasted in the literature with the Bakhtinian concept of ‘dialogism’ (Lyle, 2008, p. 225). For teachers of English as a

first and second language, their buy-in of the instructional potential of dialogic or ‘discussion talk’ is demonstrated through teacher elaborations during question-and-answer recitation (Wells, 1993), IRF structure (Sinclair & Coulthard, 1975), open-ended sharing of ideas and multiple uninterrupted turns by teacher test-like questions (Alvermann, O’Brien, & Dillon, 1990). Nevertheless, a wide variation of practices among classrooms exists. Yet, Commeyras and DeGroff (1998) found that only 33% of English language arts teachers regularly make room for discussion in their classrooms.

Researchers propose that discussion, an alternative to the recitation speech exchange system, facilitates meaning making, higher order thinking, and academic language acquisition (Almasi, 1995; Nystrand, et al 1997). Discussion provides learners an opportunity to transform knowledge and understanding, a very different epistemic function than reproducing or evaluating it. Consequently, it differs from recitation in myriad ways. One notable difference is that students have extended turns at talk as opposed to one-word or short phrase responses (Almasi, 1995; Nystrand, et al, 1997). Elongated responses provide greater opportunities to develop elaborated and substantive thinking and language. Bridges (1979) defines discussion as ‘an oral exchange between group members around a question, subject, or issue in which discussants offer and examine multiple viewpoints and alternative perspectives or angles, and examine and respond to differing opinions’. According to Bridges, this does not require an entirely open mind, but it implies a willingness to understand, appreciate, and be affected by the contributions of others. Alvermann et al. (1984) say that in addition to offering multiple viewpoints, discussants should “be ready to change their minds after hearing convincing counterarguments” (p. 3).

Vacca and Vacca (2005) refer to discussions as an open exchange of ideas, during which both teachers and students would ask questions and provide responses. According to Vacca and Vacca, students and teacher share power, responsibility, and authority as teachers frame and facilitate, but do not dominate, classroom talk. In short, teachers talk less and students talk more. Students “have opportunities to participate more fully by talking more, and by sharing their understanding, interpretations, and perspectives related to the ideas and concepts under discussion” (Vacca & Vacca, pp. 145-146). Students and teachers negotiate topics and subtopics

of discussion, students self-select when to speak, and questions do not always have specific answers. In a classroom that fosters discussion, teaching and learning is about the co-construction and sharing of knowledge. Many voices, not just the teacher's, "come together and intermingle to organize and support learning" (Freedman & Delp, 2007, p. 260).

Furthermore, discussion provides students with opportunities to engage in the kinds of talk that researchers propose facilitate higher order thinking, discourse, and comprehension (Applebee, Langer, Nystrand, & Gamoran, 2003; Freedman & Delp, 2007; Nystrand, 1997). Authentic and meaningful classroom talk carries many different labels, but shares similar characteristics. Fisher (1996) suggests that students need opportunities to engage in effective educational talk. She describes effective educational talk as "talk within educational settings, which leads to the proposal and critical evaluation of ideas relevant to the topic under discussion," (p. 238). Wolf, Crosson, and Resnick (2005) propose that classroom talk should be accountable. Accountable talk has three characteristics. First, it is accountable to the learning community. For example, students ensure that all participants understand ideas and positions, make efforts to link utterances, and build upon one another's ideas. Second, speakers use accountable talk to back-up their contributions with specific and accurate knowledge as evidence. Third, speakers "explain their thinking by using rational strategies to present arguments and by drawing logical conclusions" (p. 34).

Rubin (1990) explains that we use talk not only to present knowledge, but to transform it. Students use transformative talk to sift through observations and evaluate some information as more important than some other, compare claims, arrive at new syntheses, and take schema or metaphor that applies to one domain or experience and apply it to a new domain. Furthermore, Rubin (1990) suggests that transformative talk yields critical consciousness or "the power to see oneself and one's world from more than just a single perspective" (p. 19). Anderson and Roit (1996) explain that English language learners (ELL) need frequent opportunities to engage in 'real talk'. Real talk is much like a natural conversation in which people share problems, solutions and information. They ask and respond to authentic and critical questions, including language-learning questions. Through real talk, ELLs learn both content and language in a 'user-friendly' and unthreatening way.



Mercer (1995) proposes that higher order thinking and academic language proficiency develop as students engage in 'exploratory talk'. He defines exploratory talk as talk in which learners engage non-critically but constructively with each other's ideas. Statements and suggestions are sought and offered for joint consideration. These may be challenged and counter-challenged, but challenges are justified and alternative hypotheses are offered. In exploratory talk, knowledge is made publicly accountable and reasoning is visible in the talk. Participants actively seek each others' ideas and all children are actively involved (pp. 8-9). Engaging in exploratory talk allows students to take an active part in learning and to assimilate, accommodate, and transform new and existing knowledge and understanding. Barnes (1990) notes that children often grope (untidily) towards meaning. This is often characterized as exploratory talk. He explains that exploratory talk is "usually marked by frequent hesitations, rephrasings, false starts and changes of direction" (p. 28) as students engage critically but constructively with each other's ideas. Exploratory talk occurs in the extended student utterances usually associated with discussion. Wegerif and Mercer (2000) found that long turns at talk "turned out to be the most reliable indicators of the incidence of exploratory talk" (p. 188). As they explain, reasoning "requires longer turns, as claims have to be backed up by sufficient support, which in practice means linking clauses together in a single utterance" (p. 188).

Furthermore, Barnes (1992) found that exploratory talk usually develops within small groups of children with limited teacher presence. The limited presence of a teacher in the students' discussion influences the advent of exploratory language in critical ways: first, the learners control the questions they ask; second, because the teacher as authority is not present, or is only minimally present, the students have to formulate and evaluate their own hypotheses by testing them against their existing world knowledge and going back to the text for evidence. Barnes states that "the more a learner controls his own language strategies, and the more he is enabled to think aloud, the more he can take responsibility for formulating explanatory hypotheses and evaluating them" (p. 29).

Clearly, the opportunity to discuss text fosters different student responses than the IRE talk structure. Almasi (1996) explains that within discussion, students assume an active stance in their own learning through four primary roles: inquisitor,

respondent, facilitator, and evaluator. As inquisitors, they “negotiate the topics for discussion that are of interest and concern to them” (p. 11) and “ask questions that are personally meaningful because the questions will help them interpret and make sense of the text” (p. 7). As respondents, they are “actively involved in reacting to the thoughts of their peers” (p. 11) and engage in “substantive dialogue with one another in their efforts to resolve interpretive issues and make sense of text” (p. 7). As facilitators, they “steer the discussion and maintain responsibility for their actions” (p. 11) and encourage active participation by all group members. Finally, as evaluators, they offer alternative or divergent viewpoints (as opposed to assessing for accuracy) and “demonstrate their ability to listen and to think critically about their peers’ comments” (p. 11). These acts, or responses to talk opportunities, constitute the critical “travel” of which Barnes (1990) spoke.

In fact, other studies of classroom discourse in primary levels indicated that teacher talk is often managerial rather than conversational in nature (Cummins, 1994). During a dialogic discourse, a teacher’s engagement in teacher-student interaction is considered a method of scaffolding, only if the latter consists of three parts: contingency teaching, fading, and transfer of responsibility (Van de Pol, Volman, & Beishuizen, 2010). Here, the teacher needs to apply strategies for learning that are contingent on student responses, gradually removes (fades) support over time, and as a result, transfers the responsibility from teacher to student for completing a particular task. Three elements are claimed to work interdependently and are necessary for scaffolding to be faithfully implemented in the classroom (Many, Dewberry, Taylor, & Coady, 2009). As such, only when there is evidence of high quality discourse and a teacher does not exercise tight control over interactions in the classroom, that the principle of transfer of responsibility and scaffolding are possible.

Therefore, the current study aims to extend the research conducted in recent years by the likes of, Michaels, O’Connor and Resnick (2008) as well as Mercer and Dawes (2008), on the importance of talk for “sensemaking and scaffolded discussions” to “promote deep understanding”, with a special emphasis on multisemiotics resources – speech and gestures, in a reading classroom.

### **2.3 Reading Comprehension Defined**

According to Anthony, Pearson and Raphael (1993) “Reading is the process of constructing meaning through the dynamic interaction among the reader’s existing knowledge, the information suggested by the written language, and the context of the reading situation” (p. 284). Nystrand (2006) states that cognitively, reading comprehension is understood as the processing of textual information relating new information to established schemata. Reading comprehension is “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (Snow, 2002, p.11). Extracting meaning from text is to understand what the author has explicitly or implicitly stated. Constructing meaning is to interpret what the author has written based on the reader’s background knowledge, experiences, capabilities, and abilities.

The relevance of this study in studying scaffolding techniques in the construction of meaning through an active interaction with the written text is high. This is attributed to the lack of strategic pedagogical adoptions of reading comprehension instruction in an era where the written word may not be the truest form of a demonstration of understanding. As such, this calls for further research into designing instruction that allow students to demonstrate their understanding in other forms, specifically using multisemiotic resources like the use of gestures. Aligned with the conversation analysis (CA) approach, the study’s research questions focus on the interactional patterns of both teachers and students. Furthermore, in order to achieve a dialogic teaching and learning, the study seeks to explore the use of semiotic resources in constructing scaffolding in reading instruction. This includes the use of speech and gesture as evidence of uptake. This is most apt as teachers continue to redesign the curriculum to match the multimodality needs of 21st century learners.

#### **2.3.1 Reading Instruction at Upper Primary Level**

This section aims to highlight research findings of reading comprehension instruction, particularly at the upper primary level, from countries like the USA, England and Singapore. There is evidence from research that explicit teaching of specific reading strategies improves children’s reading comprehension (e.g. Rosenshine, Meister & Chapman, 1996; Palincsar & Brown, 1984; Garcia & Pearson, 1990). Palincsar and

Brown (1984) identify four important self-regulating strategies for comprehension, which are: generating questions about the text, predicting, clarifying, and summarising. In their 1984 study in the USA, Palincsar and Brown provided specific instruction and practice in the use of these strategies to a group of seventh grade poor comprehenders (described as reciprocal teaching, to reflect the active role of the student in the teaching and learning process). This intervention led to significant gains on criterion tests of comprehension, reliable maintenance over time, generalisation to classroom comprehension tests, and improvement in standardized comprehension scores.

Subsequent evaluations of other interventions in the USA and UK, which explicitly teach children how to generate questions and carry out higher-level cognitive functions, support the Palincsar and Brown study (e.g. Rosenshine, Meister & Chapman, 1996). In Rosenshine et al's review of intervention studies, students have been taught to generate questions as a means of improving their comprehension. It found that teaching students the cognitive strategy of generating questions about the material they had read resulted in gains in comprehension, as measured by tests given at the end of the intervention. While the UK national initiatives in education such as the National literacy strategy place considerable significance on whole class interactive teaching and the importance of classroom discourse (Hargreaves et al., 2003). Linda Hargreaves' team evaluated interactive teaching in the National Literacy Strategy (NLS) in England. Interestingly, the evidence, which consisted of interviews and video recorded lessons of thirty teachers conducting lessons during the daily literacy hour as part of the NLS, showed that primary school teachers in England have in fact made their teaching of literacy more interactive, in the simplest sense (Hargreaves et al., 2003). In literacy sessions in both Key stages 1 and 2, they recorded an increase in the ratio of questions to statements since the first research project in 1976 (Galton et al, 1999) thus giving children more opportunity to answer questions. However, they also found that these responses were rarely extended and children were not engaging in genuine dialogue. They describe this type of interaction as 'surface interaction' characterised by a rapid exchange of question and answers. However, while the study's system-based observation revealed some evidence of the teachers' increased levels of interactivity, it is more helpful in developing competencies and raising awareness in teachers, than in classroom research. It might

not be adequate to deal with the complexities and nuances present in classroom interaction, particularly in reading instruction – the focus on this study.

Therefore, according to Parker and Hurry (2007), the discourse of the teaching and learning of comprehension skills would need to include a high level of reciprocity to enable students to engage in personal responses to text. However as Debra Myhill (2006) points out in her study of classroom discourse, teacher discourse will not support student learning if it is “concerned first and foremost with curriculum delivery and with leading students to a predetermined destination” (p. 39). Her research which analyses classroom discourse in six middle/ primary schools in the UK found that “despite explicit educational initiatives which seek to improve the quality of teacher talk, the discourse patterns in whole class teaching remain very similar to previous studies” (p. 36). She concludes that “whole class interactions appear to be characterised by teacher control and by curriculum content” and that “the potential of teacher talk for developing student understanding or for exploring students’ misconceptions has not yet been fully recognised.” (p. 39)

In Parker and Hurry’s (2007) study sampling London schools, direct oral questioning was shown to be the dominant strategy for teaching reading comprehension. The prevalent form of questioning in the classroom was shown to be a ‘recitation script’. This type of directive questioning tends to produce predictable correct answers, and only occasionally are teachers’ questions used to assist students to develop more elaborated ideas. According to Parker and Hurry (2007), the range of the teachers’ questions was wide and appropriate however this places the student in too passive a role (p. 18). It could be that the format of the literacy hour itself constrains the teachers. It has been suggested that teachers are acutely aware of time pressures to meet the objectives within the literacy hour and when under such pressure tend to use a more directive form of teaching with less emphasis on active learning (Moyle et al., 2003).

In a two-year intervention research aimed at promoting Singaporean students’ self-regulated English literacy learning ability, Gong et al (2011) conducted a preparatory study which intended to collect students’ basic English learning information and identify the gap in their knowledge of literacy learning strategies.

They found that students did attempt to use different literacy learning strategies, though the average frequency of strategy use was not very high. Their findings also showed that students' home languages are not related to their use of learning strategies, unlike their gender, motivation, self-efficacy, and out-of-school effort Gong et al (2011). In the language learning strategies literature, Cohen (2011) summarizes the significance of strategy instruction in second language learning. Carrell et al. (1989) conclude that the combined effect of cognitive and metacognitive strategy instruction in second language reading is effective in enhancing reading comprehension. Zhang (2008), among many others, have extensively argued in favour of strategy training and offered evidence of its success. In a similar fashion, Zhang (2008) studied, through the examination of classroom processes, what EFL learners were doing in strategy-based reading instruction lessons and found that students were implicitly making the links between what they did as new reading tasks and what they had completed earlier on.

### **2.3.2 Reading Instruction at Upper Secondary Level**

Lower reading scores than desired on the PISA literacy test for 15-year-olds have drawn attention to the reading proficiency of secondary school students and instituted a number of policy initiatives. These initiatives have prompted the search for methods to improve reading instruction at this level (Brevik, 2014). Solutions have focused on training secondary school teachers to change their instructional practices and include reading comprehension strategies instruction (Hargreaves, 2003; Moje, 2008). As pointed out by Duke, Pearson, Strachan, and Billman (2011), "Teachers matter, especially for complex cognitive tasks like reading for understanding" (p. 51).

However, even as research has begun to document that teachers matter (e.g., Grossman et al., 2010; Hattie, 2009) and that strategy training is effective for student reading comprehension (e.g., Duke et al., 2011), uncertainty remains about which strategies contribute to such an improvement and how teachers conceptualize the process of developing better readers (e.g., Block & Duffy, 2008). Pressley (2008) recently stated the need to conduct research on the professional development of comprehension instruction teachers in the USA. He argued that, despite the urgings of the USA's National Reading Panel (2000) and professional development initiatives,

there was “no evidence of much comprehension strategies instruction occurring extensively now” (p. 406). Then he reminded us of the importance of such instruction, bearing in mind that “very effective readers actually use a small repertoire of strategies” (p. 407). Other scholars have echoed this description (e.g., Grossman et al., 2010; Hattie, 2009), and called for more research about teachers’ metacognitive learning related to the teaching of strategic reading, along with the knowledge necessary to engage in such practices (Block & Duffy, 2008; Duke et al., 2011).

Studies have shown that a large number of reading comprehension strategies may have been successful in developing reading skills, when teaching students to read systematically. This abundance of strategies can lead to a few problems, as there are simply too many to agree on a fixed set (Roe, 2010). Teachers might feel the need to collect strategies to fill their already full lessons (Fisher & Frey, 2008), at the risk of becoming “strategy junkies” (p. 262). Researchers have attempted to codify the useful strategies. Weinstein and Meyer (1986), for example, captured the main strategies of memorization, organization, elaboration, and monitoring while Pressley and Afflerbach (1995) found more than 100 strategies in their study of verbal protocols of reading. Block and Duffy (2008) listed 45 strategies proposed from 1978 through 2000, where main strategies such as monitoring, organizing and elaborating appear together with specific strategies such as asking questions, summarizing, and relating what one reads to prior knowledge. Similarly, Roe (2008) described 15 reading strategies in work she reviewed. She argued that, while some were main strategies (e.g. monitoring), others were specific strategies (e.g. “visualize” can be a form of monitoring). This illustrates how strategies can be complementary and interrelational (Brevik, 2014).

Students in Grades 4-12, in the USA, have been observed to spend the majority of their days in content-area classes. As students advance in school, researchers suggest reading instruction should become more disciplinary (tied to content areas), reinforcing and supporting students’ academic performance (Shanahan & Shanahan, 2008). All content-area instruction (e.g., English language arts, Mathematics, Science, and Social Studies) utilizes literary or informational text in some manner, so students must comprehend specific texts and grasp the concepts

being communicated in them. This is a particular concern as the texts students are asked to read become increasingly complex with unique linguistic and cognitive features that are not necessarily shared across disciplines. Thus, reading instruction continues to be important for secondary-level students.

Perhaps one of the most important goals of reading instruction is to help students understand written language (Hargreaves, 2003; Moje, 2008). Students who comprehend well monitor their understanding as they read and use fix-up strategies, such as re-reading or summarizing, when understanding breaks down (Bernhardt, 2011; Duke et al., 2011). Self-monitoring also helps students relate new information to their prior knowledge, fostering better understanding (Block & Duffy, 2008). However, many adolescents in secondary level struggle to comprehend text due to a lack of background knowledge, an inability to relate content to prior knowledge, an inability to read text fluently, difficulty decoding words, an inability to attend to meaning while reading, an inability to use comprehension strategies, deficits in metacognition (often not aware they are not comprehending), or difficulty understanding the meanings of words (Boardman et al., 2008; Pressley, 2008; Reed & Vaughn, 2010). Thus, a strategic instruction in reading comprehension at the secondary level may aim for all students “to read a variety of materials with ease and interest, read for varying purposes, and read with comprehension even when the material is neither easy to understand nor intrinsically interesting” (Snow, 2002, p. xiii). This is particularly true for adolescent readers who increasingly need to gain meaning from conceptually dense texts, as well as to remember and use the information (Biancarosa & Snow, 2004; Perfetti, Landi, & Oakhill, 2005).

It remains the case that the dominant source of readings in secondary English classrooms is the commercial literature anthology. However, there is insufficient attention in literature classrooms to the nuts and bolts of how to read a range of literary texts (Lee, 2004; Smith & Hillocks, 1988). Literature teachers are more likely to ask students about the symbolism in literary texts than to model or teach how to detect the symbolic from the literal and how to re-construct the figurative inferences to be made about symbols in the literature (Lee, 2004). One of the challenges to the literature curriculum at both the middle and high school levels is how to help students, especially struggling readers, develop conceptual understanding of all these



knowledge sources to help them learn to appreciate and develop a disposition to read complex literary works. Perhaps it is ever so critical now for secondary teachers to review their reading instruction to incorporate ‘reading for deeper understanding’ as an aim. In addition, as this study shows, with an effective instruction of the utilization of multisemiotic resources using scaffolding techniques, that aim may be possible after all.

#### **2.4 Talk for Meaning-making in a Reading Instruction Classroom**

Reading comprehension, which is mediated by text, is defined as a dialogic exchange of meaning or transformation of mutual knowledge between the writer and reader (Nystrand, 1986). Studies, which drew upon the dialogism of Bakhtin (1981, 1986), highlight the configuration of talk between teacher and students as they actively construct meaning together in the classroom (Alexander, 2004; Wells, 1999). This view of talk for meaning making in reading comprehension instruction emphasizes the deliberate, strategic, problem-solving processes of the readers (teachers and students) as they engage with a text, a process which Durkin (1993) terms “the essence of reading”. Similarly, there is an increasing amount of research arguing for reading as a ‘social and cultural construction’ act (Webb, 2009). Freebody, Luke, and Gilbert (1991) suggest ways of rethinking the approaches to reading instruction. Reading instruction, not at the early years level but at the primary and secondary levels, has always been related to reading ‘comprehension instruction’ as reading passages are typically accompanied by oral or written comprehension questions. They stress that it should not be about the ‘best’ way to approach reading comprehension instruction but rather to critically examine different “reading practices and positions that are interactively built by particular instructional activities” (p. 438).

A key presupposition within the vast body of literacy research is that discussions about and around texts enhance students’ comprehension, thinking, and reasoning (e.g., Almasi et al., 1996; Cazden, 1988). Such a perspective is situated within a rich sociocultural tradition emerging from the classic work of scholars such as Vygotsky (1978) and more contemporary theorists like Bakhtin (1981, 1986) who suggest that thinking and reasoning are inherently dialogical. Research has identified a number of approaches to conducting intellectually stimulating discussions that appear to be effective in promoting high-level responses to text in elementary as well

a high school settings (e.g., Collaborative Reasoning, Philosophy for Children, Questioning the Author, Instructional Conversations, or Book Club). These approaches serve various purposes depending on the goals teachers set for their students: to adopt a critical or analytic stance (e.g., Anderson et al., 1997), to acquire information (e.g., Beck, McKeown, Sinatra, & Loxterman, 1991), or to respond to literature on an aesthetic level (e.g., Raphael, Gavelek, & Daniels, 1998). Discussion approaches that give prominence to interrogating or querying the text in search of the underlying arguments, assumptions, world views, or beliefs (Maybin & Moss, 1993), align with what Wade, Thompson, and Watkins (1994) describe as a critical–analytic stance. Such a stance encourages a discussion in which the reader’s querying mind is engaged, prompting him or her to ask questions, and promoting a more subjective, critical response toward the text.

Recent literature on reading comprehension instruction has focused on the concept of ‘talk around text’ or ‘literacy talk’. Being seen as a wider view of literacy, according to Wallace (2008), during ‘literacy talk’, “texts become amenable to critical scrutiny when students and teachers are able to speak as producers or interpreters of texts” (p. 63). Conversely, text in classrooms is often perceived as lifeless, treated simply as an object to be used “rather than given new life, or re-authored by readers in new settings”. In other words, it is unfortunate that reading texts are used in a very ‘mechanical’ manner where teachers simply teach vocabulary and comprehension. Over a decade has passed since Freebody et al’s (1991) study, yet the worksheet culture in reading instruction still prevails; where students are “invited to act *on* text, rather than recreate it or reshape it to their own ends” (Wallace, 2006, p. 21). Such factors continue to hamper the configuration of talk in reading comprehension classes for meaning making and deep understanding. Similar to Myhill, Wallace also cautions against denying the “impact of power differential in teacher-students interaction” (2008, p. 63). According to Hofstede’s (1986) categorisations, ‘power distance’ appears to influence classroom interaction, largely in Asian classrooms, and it seems to work as an opposing factor to applying communicative activities. In large power distance societies teachers dominate students, who are expected to act as teachers instruct them (Hofstede, 1986; Richards & Lockhart, 1994). In this type of classroom, interaction between teachers and students or students and students is limited. On the other hand, in small power

distance societies students interact with teachers and other students more actively and freely (Kasuya, 2007). These different power dimensions affect classroom interaction. Students are often reluctant to participate in communicative activities. Thus, cultural factors such as power distance seem to underlie the prevalence of the monologic discourse in the classroom.

In the current research climate, Nystrand (2006) highlights that rigorous experimental studies of classrooms' 'instructional scripts' (Gutierrez, 1994), which refers to the measurable, strategic balance of turns in classroom talk, are generally favoured. Noteworthy of mention however, is Murphy & Edwards' (2005) meta-analysis study, measuring the effects of various approaches to 'discussion talk' on reading comprehension. To add, numerous studies have mainly focused their investigations on the role of classroom talk, as an environment for reading comprehension, in the middle and high schools.

In a study conducted in the United States, Wolf, Crosson, and Resnick (2005) found that the use of collaborative talk during reading lessons was positively associated with student gains in comprehension and knowledge building. The researchers believed that classroom talk, in which teachers support students, can play an important part in helping students between the ages of six and fourteen - across primary to secondary levels, to deepen their understanding of text. They also suggested that as students develop into independent readers they begin to take increasing responsibility for leading the conversations that surround a text. The study examined the quality of teachers' and students' talk in ten different schools. It found that effective classroom talk was linked to a high level of student's thinking and active use of knowledge. Discussion based activities, in combination with academically challenging tasks, were positively related to students' development of literacy skills. More importantly, it also found that a failure to reformulate ideas or press students to elaborate on their ideas, resulted in exchanges that tended to be brief and did not contribute to students' substantial understanding of the text.

In the end, just as the researchers of the meta-analysis revealed, indeed not all discussion approaches are created equal, nor are they equally powerful at increasing students' high-level comprehension of text (Wolf, Crosson, & Resnick, 2005). In fact,

very few approaches were effective at increasing literal or inferential comprehension and critical thinking and reasoning about text (Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009). Nonetheless, talk appears to play a fundamental role in text-based comprehension. In effect, Sen (2010) emphasized that talk is a *means* and not an *end*. It is one thing to get students to talk to each other during literacy instruction but quite another to ensure that such engagement translates into deep understanding and effective teaching and learning. Simply putting students into groups and encouraging them to talk is not enough to enhance comprehension and learning; it is but a step in the process. Therefore, this proves how crucial it is to develop a defined and strategic approach to support the pedagogical effect on classroom talk for teachers to adopt effectively (Sen, 2010).

### **2.5 Semiotic Mediation in the Classroom**

Previous studies have tended to focus on the role of speech used in classrooms. However, there is a growing recognition that the spoken language only provides a partial understanding to what goes on in the classroom. Since students' learning experience is essentially multimodal, the study of pedagogic semiosis (meaning-making) should involve an interplay of semiotic resources. This calls for the necessary contextualization of the research within the body of literature on multimodality.

Multimodality (Kress & van Leeuwen, 2001), like multiliteracies, has emerged in response to the changing social and semiotic landscape. Multimodality attends to meaning as it is made through the situated configurations across image, gesture, gaze, body posture, sound, writing, music, speech, and so on. From a multimodal perspective, image, action, and so forth are referred to as *modes*, as organized sets of semiotic resources for meaning making. Key to multimodal perspectives on literacy is the basic assumption that meanings are made (as well as distributed, interpreted, and remade) through many representational and communicational resources, of which language is but one (Kress & van Leeuwen, 2001). Thus, in a reading classroom of rich interactions, where meaning is constructed and co-constructed between participants (Maybin & Moss, 1993), it is noteworthy to highlight that the use of semiotic resources, like verbal and non-verbal features of discourse, is constantly being mediated.

According to Vygotsky (1978), human social and mental activities are mediated by tools and signs. Essentially, humans have created tools such as language, mathematics, music, and art to mediate interaction in the world (Lantolf, 2000). The term *semiotic mediation* refers to the fact that the human mind organizes the world by negotiating the meaning of signs and symbols that appear in a variety of everyday sociocultural situations (Daniels, Cole, & Wertsch, 2007). Language and gestures are two of these semiotic systems. Through its use, thought and action are shaped. Therefore, language, gestures and thought are interconnected. They are linked in the sense that gestures and language influence thought, and thought influences language and gestures. McNeill states “gestures do not just reflect thought but have an impact on thought. Gestures, together with language, help constitute thought (1992, p. 245). In this study, speech and gestures work in synchrony, and are considered the main tools involved in the process of scaffolding in a reading comprehension instruction. Such tools can also be powerful tools for teachers when supporting, enhancing, and extending students’ learning. In fact, the use of speech and gestures can also provide the opportunity for learners to become more able in using language to demonstrate their learning and gain deeper understanding. With opportunities to be involved in thoughtful and reasoned dialogue in a reading classroom, teachers can become conversational partners for learners to 'model' language use to reason, reflect, enquire and explain their thinking to others.

### **2.5.1 Scaffolding and Scaffolding Strategies**

Vygotskian learning theories focused attention on the learner as a social being and on the importance of the adult in learning. The assumption that all learning is socially based played a major role in shaping the research agenda (Wilkinson & Silliman, 2000). The metaphor ‘scaffolding’ was originally used by Wood, Bruner and Ross (1976) in their examination of parental tutoring in the early years. Later, scaffolding became situated in the socio-cognitive psychological frame developed out of the work of Vygotsky (Edwards & Mercer, 1987; Cazden, 2001; Wells, 2000; Hammond & Gibbons, 2005). He considered that “there is a close relationship between the use of language as a cultural tool in social interaction and the use of language as a psychological tool providing the resources for individual thinking” (Gibbons, 2006, p. 21). He argued that learning to know the language offers the learner cognitive strategies, which can be developed via the social and the psychological plane.

The concept of scaffolding has been used most frequently to describe the kinds of instructional exchanges that take place in informal educational situations, such as parent-child interactions. Rogoff and Wertsch (1984) developed this concept further in their presentation of the term "transfer" to describe the process from other-regulation to self-regulation. Successful scaffolding requires establishing "intersubjectivity," or a shared understanding of the task (Rogoff, 1990). In this process, the caregiver leads the child toward such understanding and helps him/her develop his/her own conception of the task. Such an outcome is achieved by creating a balance of support through scaffolding. This process has been called "assisted performance" (Tharp & Gallimore, 1988), "cognitive apprenticeship" (Rogoff, 1990), "guided participation" (Rogoff, 1991), and "responsive teaching" (Gaskins, Anderson, Pressley, Cunicelli, & Satlow, 1993). Together, these theories present a consensus about socially mediated models of learning.

In addition, the work of Bruner (1985) later explored the nature of the adult role and described how the adult can scaffold the learning by building bridges between what the child already knows and what the teacher is teaching. He paid special attention to the role of the teacher who has the task of transmitting the language to the child. He argued that "learning to know the language" may be accomplished without considerable external help while "learning to use the language" cannot be conquered solely without the assistance of other factors, such as the teacher, because the use of language demands the learning of notions that someone has to explain thoroughly (Bruner, 1985, p. 26). For Bruner the learner's consciousness and control form an internal goal, they are crucial for the acquisition of new material, because when the learner conquers these characteristics s/he will be able to work autonomously. However, until that happens, the teacher will scaffold so as to support the child within its zone of proximal development. An underlying premise of scaffolding is that the support is only temporary and that, ultimately, responsibility is transferred to the learner. This is what Edwards and Mercer (1987) refer to as the 'handover of independence'. Unfortunately, it is very hard to find evidence of scaffolding, especially in large classes, as developing the learning supports to meet the needs of each individual student would be extremely time-consuming (Van Der Stuyf, 2002).

Although scaffolding can be used to optimize learning for all students, it is a very demanding form of instruction (Pressley, Hogan, Wharton-McDonald, Mistretta, & Ettenberger 1996). Despite its origin from the context of one-to-one problem-solving, conceptualising adults' supportive role in children's learning (Wood et al., 1976), several scholars have advocated its application in whole-class situations (e.g. Van Lier, 1996; Hogan & Pressley, 1997). Over the last few decades scholars in the field of content-based language instruction (Echevarria, Vogt, & Short, 2008; Gibbons, 2002, 2009) have argued that scaffolding language is a fruitful way of promoting multilingual students' development of subject-specific registers needed at school. As this type of language development permanently needs attention, whole-class scaffolding has recently been increasingly studied (Gibbons, 2002; Hammond, 2002).

Both the Campbell (1981) and Hoffman et al. (1984) papers considered the response, feedback and, when appropriate, further questioning used by teachers when listening to children read. These interchanges provide the opportunities for teachers to provide the scaffolding that will enable the child to build the bridge from what she already knows to what she is learning. Campbell argues that teachers' responses when listening to children read are more complex than had previously been thought. He categorises seven different feedback moves (four positive and three negative) given by teachers in response to children's reading. Similarly, Hoffman examines the nature of the feedback but also acknowledges that feedback is different according to the reading ability of the children. He argues that the closed response often given to less-able readers reflects low expectations and could restrict their progress.

Wilkinson and Silliman (1994) identify two different styles of scaffolding: directive and supportive. Directive scaffolding is the most commonly found and reflects the type of classroom discourse described above in which teachers control the discourse and acceptable answers are predetermined in the teacher's mind. They identify the IRF sequence as the most well-known and most studied of directive scaffolds and argue that it results in children adopting a passive orientation to learning. In contrast, Wilkinson and Silliman suggest that supportive scaffolds directly mirror Vygotsky's views. These derive from initial work by Palincsar and Brown (1984) on reciprocal teaching: a dialogue-based, active learning approach in which an attempt was made to bring about classroom interaction that avoided closing

down the interaction. The teacher models reading strategies with a group of students, who then practise using these independently. The strategies are: summarising, asking questions, clarifying content and making predictions. These all require students to be active in constructing meaning from the text, by collaboratively monitoring their comprehension, asking questions and applying inferential strategies to fill gaps left by the text. This model is premised on the theories of reading, combined with a sociocultural view of adults using talk to induct students into cognitive processes (Rogoff's "guided participation", 1990, p. 191). It suggests that students are gradually internalising the comprehension-monitoring strategies, moving from intermental to intramental understanding, by this process of "inter-thinking" (Mercer, 2000, p.1).

Further studies on instructional conversations as central mechanisms for supporting active engagement in learning to read have been conducted particularly with at-risk students or those who are already failing (Palincsar & Klenk, 1992; Pressley, 1998). In Brown and Campione (1994) study on community of learners, they utilized criterion-reference tests of reading comprehension to chart ninety fifth and sixth graders' performance. In their work, they feature students as their own designers of learning and encouraged them to be responsible for designing their own curriculum (p. 233). Van der Meij (1993) discussed the potential advantages of teaching children to ask questions. He cites Dillon (1988, p. 47), who asserted that "almost everywhere children are schooled to become masters at answering questions and to remain novices at asking them". Van der Meij found that children could be successfully encouraged to ask closed, text-based and explicit questions. He argues that in order to bring children to raise questions that search for a deeper understanding specific training may be needed. In retrospect it seems unsurprising that, if this type of questioning is pervasive in classrooms, it will be this type of questioning that children adopt. Indeed, how teachers use questions during whole-class instruction has generated many discussions on the nature and the role of this basic tool of interaction (Cazden, 1988; Mehan, 1979; Tharp & Gallimore, 1988; Wells, 1996). Most of them have focused on identifying question types and taxonomies (Chaudron, 1988) but also other input-oriented theories of second language acquisition have investigated how questions – in the form of clarification requests - might promote the modification of interaction (Long, 1981) and negotiation



of meaning. Thus, it is claimed that questions may be used to achieve higher levels of comprehensible input to learners (Gass, 1997).

Many (2002), in a 7-month naturalistic study of conversations between teachers and children in third-fourth and fifth-sixth grade classrooms in the US about literacy and non-fiction texts, proposes that such classroom environments are socioconstructivist in nature and deviate from traditional classroom structures that emphasise teacher talk and the IRF discourse structure. She argues that scaffolded instruction underscores both the role of the teacher and the role of the child as “co-participants in negotiating meaning and in informing the nature of the instructional conversations” (p. 379). She quotes Meyer: “First, we must maintain the theoretical underpinnings of social constructivism. Scaffolded instruction must reflect the understanding that learners construct knowledge; teachers cannot simply give knowledge to students. Scaffolded instruction also must reflect the understanding that context will influence how and what is learned.” (Meyer, 1993, p. 51) The constant-comparative analysis of data, which includes field notes, interviews, and student artifacts, however, may not be sufficient to explore the pedagogic discourse in the multimodal reading classroom, where both speech and gesture may be used as tools for scaffolding learning.

From a sociocultural perspective learning is seen as situated within certain forms of social co-participation (Lave & Wenger, 1991). Lave and Wenger demonstrate that learners, working individually, do not acquire a body of knowledge that can be applied to real contexts, but achieve a series of skills to perform by participating and cooperating within a social context. This participation is initially limited, dominated by the ‘expert’ who takes the major responsibility in the completion of the task, and including a short intervention on the “novice’s” side. Nevertheless, the degree of autonomy in learning increases when the learner becomes more and more proficient. In order for the learner to attain a considerable degree of autonomy the teacher will mediate and guide him/her along the process of knowledge acquisition.

The construct of mediation is central to the sociocultural theory of Vygotsky (1986; Lantolf, 2000) and to the study of collaborative interaction. He believes that

“human activities and mental functioning are mediated and facilitated by tools, cultural practices, and artifacts, the most extensive tool being language” (Gibbons, 2003, p.248). Therefore, mediation is a familiar concept in social contexts as law or, in this case, classrooms. It can be described as occurring in situations characterized by difference, difficulty, or social distance. The site where social forms of mediation develop is the ZPD (Zone of Proximal Development) (Vygotsky, 1978). The ZPD refers to the gap between what learners can do without help and what they can perform in collaboration with others. According to Vygotsky, “Learning occurs through this assisted performance and the context of joint activity: Human development, including language development, is thus intrinsically a social process and, in the broadest sense, educational” (Gibbons, 2003, p.249). In the reading instruction context, there is evidence of a teacher acting as a mediator helping learners to “construct events in terms that they understand (Webster, Beveridge, & Reed, 1996) by means of using their personal experiences to make sense of a broader phenomena” (Gibbons, 2002, p.174). An important feature of this performance is that it involves not simply helping to do but helping to know how to do (Mercer, 1994; Wells, 1999).

Following Stone’s (1998) view, scaffolding is seen an interactive process that occurs between teacher and student who must both participate actively in the process. Despite the many different definitions of scaffolding encountered, some common characteristics can be distinguished, as summarised in a scaffolding review by van de Pol, Volman and Beishuizen (2010). The three key characteristics, contingency, fading and transfer of responsibility, are summarised in a conceptual model, depicted in Figure 1 below. In general, scaffolding is construed as a support given by a teacher to a student when performing a task that the student might otherwise not be able to accomplish on their own (van de Pol, Volman & Beishuizen, 2010).

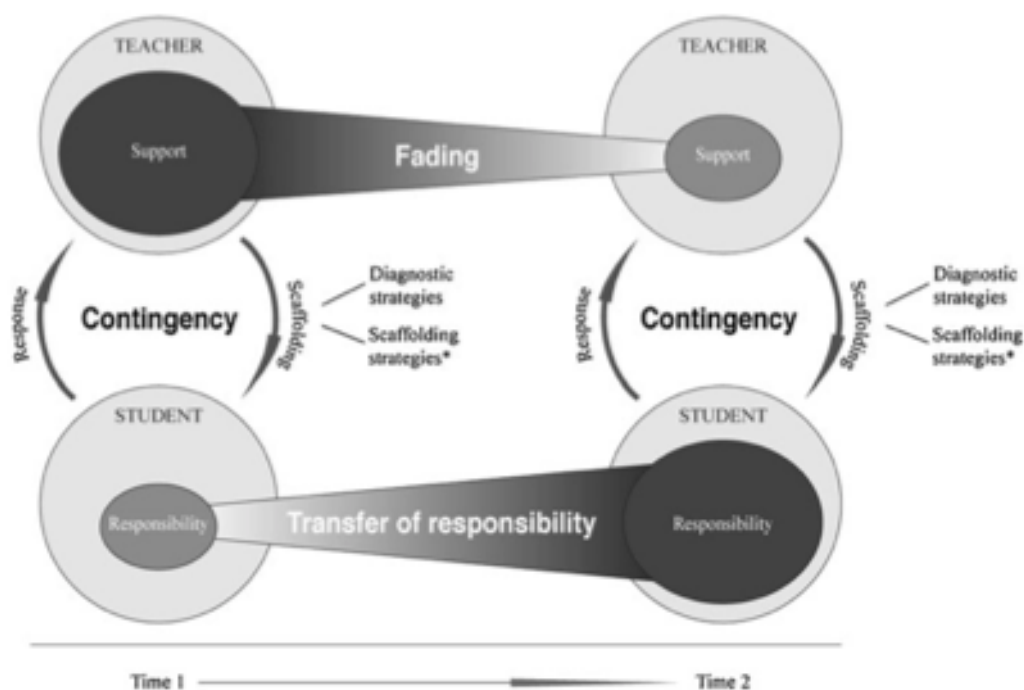


Figure 1 Conceptual Model of Scaffolding (van de Pol, Volman & Beishuizen, 2010)

As highlighted by the authors of the review, although there is a widespread interest in scaffolding strategies, and many valuable classifications have already been made in the last decade, no generally accepted framework for the analysis of these strategies is yet available (2010). However, the scaffolding classifications of Tharp and Gallimore (1988) and Wood, Bruner, and Ross (1976) are fundamental in any scaffolding analysis research work. Tharp and Gallimore (1988) speak of six means of “assisting performance”: modeling, contingency management, feeding back, instructing, questioning, and cognitive structuring. Wood et al. speak of six scaffolding functions: recruitment, reduction of degrees of freedom, direction maintenance, marking critical features, frustration control, and demonstration. These classifications are essential in this study’s analysis.

The examination of dialogic interactions among the participants (teacher and students) in providing scaffolds to promote learning and developmental processes is an area that is under represented in the literature (Rojas-Drummond et. al., 2013). Although recent research in the field of educational practices has emphasised the key role played by the dialogic interactions among teachers and students in supporting children's development, reasoning and learning (e.g. Littleton & Howe, 2010; Mercer & Littleton, 2007), it is noteworthy to highlight that there are major methodological

challenges in studying micro analyses of ‘dialogic scaffolding’ in whole-class discourse (Rojas-Drummond et. al., 2013). In Rojas-Drummond et. al.’s study, the team explored two functional aspects of such ‘dialogic scaffolding’ interactions. The first is teachers' use of dialogue as a means for ‘scaffolding’ children's learning and development (Mercer & Littleton, 2007; Rojas-Drummond & Mercer, 2003; Wells, 1999). The second is the potential value of peer group interaction and talk as another means of supporting these processes, but in a more symmetrical environment (Rojas-Drummond, Littleton, Hernández, & Zúñiga, 2010). They developed a scheme, which codifies utterances that contribute to a dialogic interaction. This is done by linking communicative acts with the strategies and principles of scaffolding to the characteristics of dialogic teaching and learning (DTL) – collective, reciprocal, supportive, cumulative, purposeful (Alexander, 2008, pp. 37 – 38). They found that ‘spiral IRE/F exchanges’ represent key higher-order units of analysis which allow the researchers to pin-down where dialogic interactions reside, and particularly those that involve scaffolding processes. This research finding justifies the study’s methodological approach is analysing thematic-based extracts, which are shorter teacher-fronted interactions, during a primary and secondary English reading instruction.

However, the concept of scaffolding would be used rigidly if we adhered so strictly to the original definitions that temporary adaptive support in whole-class settings cannot be called scaffolding even though it is in the spirit of the original idea. Loose use of the scaffolding concept is the case if it is stretched so far that almost any support in classroom interaction (Meyer & Turner, 2002), or even aspects of classroom organization, artefacts and sequencing (Anghileri, 2006) are called scaffolding. The latter trend of overgeneralising has already been criticized by many scholars (see McCormick & Donato, 2000; Mercer & Littleton, 2007). Thus, in view of this study’s focus in exploring the pedagogic discourse in primary and secondary reading classrooms, the research would bring to light the use of speech and gesture specifically for a dialogic scaffolding.

## **2.6 Conversation Analysis**

For the purposes of this study, where communicators of the classroom interact through talk, conversation analysis (CA) is a highly appropriate research tool. The

focus of CA is on the procedural analysis of talk-in-interaction, how participants systematically organize their interactions to solve a range of organizational problems, such as the distribution of turns at talking, the collaborative production of particular actions, or problems of understanding (Wooffitt, 2005). The analysis is always based on audio or visual recordings of interaction, which are carefully transcribed in detail. Furthermore, the study is "data-driven" - in the sense that concepts and hypotheses are based on careful consideration of the data, recordings and transcript, rather than drawn from theoretical preconceptions or ideological preferences. Furthermore, in studying the use of speech and gesture within the interactional patterns of both teachers and students for dialogic scaffolding, it is essential that all the participants' turns are examined. CA offers such a sequential analysis.

In line with a more social view of learning, CA's strength lies in its microanalytic methodology. Based on participant behaviour, CA allows researchers to reveal the detailed features of interaction and develop an account, which has the potential to elucidate how and when learning comes about or fails to come about. Its focus is on sequence organisation, turn-taking, repair, the structure of speech events and integration of speech with gesture. This focus is achieved through the examination of detailed transcriptions of collections of cases of ordinary or individual cases of (classroom) practices (Brouwer & Wagner, 2004). Typical findings of such studies are to be found in the work of Markee (2000). Markee has highlighted, for example, the interactional differences between teacher-fronted and small-group second-language interactions; he has also shown how, in second-language interactions – in common with first-language interaction – there is a preference for self-initiated repair over other-initiated repair; he has, furthermore, shown how learners may cannibalise topical units that occur in prior interactions in order to recycle them in novel, complex ways (Markee, 2000). Other CA studies include those of Wagner (2004), who has shown how teachers and learners orient to different participant frameworks and shift their orientation as an interaction progresses. Further interesting findings are provided by Ohta (2001), who has demonstrated how, in the IRE/F pattern of classroom interaction, material which recurrently appears in the teacher's follow-up turns eventually emerges in students' production, thus demonstrating the teaching potential of the IRE/F pattern (Flowerdew, 2013). However, these studies do not utilize any video recording, which is central in the

current research involving the use of gestures in the classrooms. Moreover, other studies did not combine the use of video recording with single line coding – this further highlights the methodological strength of the current study in addressing the research gap in classroom talk and reading instruction.

From a theoretical perspective, CA has been critiqued on a number of counts. For example, Power and Dal Martello (1986) argue that CA does not use quantitative data, that single instances are inadequate, and that intuition is valid as a means of investigating conversation, so natural data is unnecessary. Another opponent, Searle (1986), thinks that conversation does not have an underlying structure about which a relevant theory can be formulated, and that conversations are not subject to rules. Indeed, the turn-taking systematics is not and could not be followed in a conversation. Thus he is arguing that CA, while it is descriptively obvious, is not theoretically sound as the rules are not and could not be followed (McIlvenny & Raudaskoski, 1996). Even in recent years, criticisms on CA revolve around the same issues as it had in the past. It has been criticised for its lack of systematicity (Eggins & Slade, 2005). There is no finite set of adjacency pairs and there is no set of criteria for recognising them. In addition, CA is not a quantitative approach (for the most part). There is no way of comparing the relative frequencies of the various units of analysis (Eggins & Slade, 2005). Furthermore, CA has been criticised for its failure to take account of context or the psychological motivation of the participants in turn-taking, as is the case in alternative theories, such as Critical Discourse Analysis (CDA) or ethnography (see Waring *et al.*). Based on these criticisms, there have been various calls to combine CA with other social research methodologies, such as CDA or ethnography (for example, Stubbe *et al.*, 2003).

CA does tend to use a ‘restricted’ data base - recordings of naturally occurring interactions – and this is often seen as a severe limitation of the validity of its findings. The absolute detailed focus on cases of specific subjects, lessons, teachers from a certain level of school and country, which a particular CA research is studying may give rise to the criticism of limited external validity. In sum, critics of CA (e.g. Moerman, 1991) argue that it suffers from a lack of methodological foundation, a rigid formalism and a too narrow understanding of context. However, what such critics fail to realize is that the nature of CA research is one that is not aimed at

generalizing – e.g. arguing that all classrooms are exactly like the one studied in the CA research. Instead, a CA research aims to generate theory about how classrooms can potentially operate given certain conditions. Thus, the adoption of CA as a central methodological approach to this study is highly appropriate since it aims to study detailed particularities of interactions in a reading classroom.

As Moerman (1991) claims, “CA deals exclusively with structures of interaction on a micro-level, and not at the language beyond the sentence” (p. 31). Thus, there is absolutely no need for the researcher to interview the teacher and student participants in this study – to question them on why they speak the way they do and use gestures the way they do in the classrooms. A strong argument for this is that there is no way to know how an interpretation of an action by a participant relates to the action as originally intended in the actual observed setting (Have, 1991). Besides, it may be very hard for participants of teacher-student classroom interactions to reconstitute after the moment-by-moment interweaving of meaning-making has passed. They may be prone to present rather partial accounts, putting their actions in a favorable light. Furthermore, the attention of CA is not directed at uncovering hidden meanings but in the meanings that actually and observably are produced in and through the interaction, in order to describe the use of semiotic resources used to bring those meanings about.

Notwithstanding these critiques, CA offers a theory and methodology, which allow us to understand how talk is used in interaction in both everyday and institutional practices. It offers a clear and replicable methodology and a body of research findings against which ongoing studies can be benchmarked. According to Flowerdew (2013), specifically regarding foreign- and second-language learning contexts, contrastive work offers the possibility of highlighting differences in how talk is organised across cultures, with its potential for feeding into syllabus and materials design. More broadly, CA offers a powerful model of talk, which can serve as a target for learning and for understanding and intervening in classroom interaction (Flowerdew, 2013). Furthermore, CA being fundamentally concerned with the rules, norms and practices underlying the organisation of social interaction, allows the examination of discourse adopted by participants in interaction in everyday settings as well as institutional contexts. CA takes the stance of having meaning and

understanding in interaction as highly organised and orderly. Thus, CA does not solely explore “talk-in-interaction” but “talk-and-other-conduct-in-interaction” and “practices-in-interaction” such as turn-taking, adjacency pairs, sequences, repairs, absence in response, tag questions, gaze directions, intonation, and intersubjectivity (Goodwin, 1981). The use of teacher questions in the form of repairs may provide insight into how children themselves understand participating in ‘talk-in-interaction’. Wootton (1994), for example, documents some of the skills involved in the child producing and monitoring talk, noting that even very young children show sensitivity to the importance of sequence during ongoing interaction. Similarly, Tarplee (1989, 1996) describes how children orient towards adult repair during interaction. One recent theme in this literature is the focus on repair organization (Ridley, Radford & Mahon, 2002; Wootton, 2007).

Repair actions and preferences in a conversation are aimed at addressing problems of speaking and understanding (Schegloff, Jafferson, & Sacks, 1977). Repair actions, be they self- (SR) or other-initiated repair (OIR), take various forms, and occur in classroom settings as actions supporting learning (Macbeth, 2004; 2006). When difficulties arise in conversations, repairs take place: the speaker goes back and changes or repeats something he/she just said (Schegloff et al. 1977; Schegloff 1997). Repairs therefore refer to an organised set of practices through which participants are able to address and potentially resolve troubles or problems of speaking, hearing or understanding in talk (Sidnell, 2010, p. 110). In terms of repair strategies in the classroom, when responding to incorrect answers, teachers withhold outright correction and never supply the correct answer outright. As found in other studies, teachers use other-initiations of repair by supplying hints and prompts (Radford, 2010a, 2010b). Generally, teachers do use at least some strategies that encourage students to think without too much of ‘spoon-feeding’. Teachers go beyond IRE/F by using open topic invitations and some high quality feedback moves such as asking students to explain their method (Wilson, Andrew, & Below, 2006), especially when they initiate repair. Furthermore, Radford (2010a, 2010b), discusses a variety of ‘other-initiation strategies’ like, variations of prompting, hinting and supplying a model, adjusted as a form of graduated assistance. Notably, Radford and Mahon (2010) highlight that multimodal features such as gaze and gesture are crucially employed during repairs in the classroom.



Additionally, according to Radford, Ireson, and Mahon the way in which topic is generated influences student participation in a high-quality discourse (2006). When teachers use initiations such as ‘open invitations’, topic can be jointly constructed, even when a grammatically closed question is asked (Radford, Ireson, & Mahon, 2006). This is due to the opportunity for students to present their own ideas and opinions, encouraging extended responses and explanations. Still, as class sizes are typically large, a turn-taking system is created. This creates a restriction for student autonomy in terms of selecting topic of talk (Mercer, 1995). Thus, in Radford, Ireson and Mahon’s study (2006), it is reported “topic is collaboratively constructed during institutional triadic dialogue in both the speaking-book and story-writing lessons, while co-construction of topic is evident during the initiation and response turns of circle-time” (pg. 205). However, they do highlight a key feature of the study, in which the oral language tasks examined are not like a typical knowledge transmission-styled lesson. This results in the absence of test or display questions, since the teachers may not have the ‘answers’ themselves. Besides, they too are open to other ‘answers’ (Radford, Ireson, & Mahon, 2006). Methodologically, a study of topic analysis in this research highlights the need for a new way to analyse the otherwise typical IRE/F interactional patterns of classroom talk. Since it is near impossible to know exactly what is in a teacher’s head and to assume the ‘right’ answers to test-like questions, a CA approach to topic analysis is better suited for the current study. Besides this would focus on a more appropriate assumption that topic is co-constructed (between teachers and students) and therefore dialogic. For example, a topic-invitation question like “Who should be in our story?” is dialogic as the teacher does not name the story’s character but invites the child to name the character. This allows the child to contribute topical ideas. Following this assumption and approach, this research aims to study talk; speech and gestures, that tend to reflect their multisemiotic quality in contributing to the teacher’s use of scaffolding strategies.

## **2.7 Gestures Studies**

While many previous studies have tended to focus on the role of speech used in classrooms, there is a growing recognition that the spoken language only provides a partial understanding to what goes on during lessons. Since students’ learning experience is essentially multimodal, the study of pedagogic semiosis (meaning-

making) should, in fact, involve an interplay of semiotic resources (Sen & Towndrow, 2014). This is particularly relevant in the study as it seeks to extrapolate the use of speech and gesture in the construction of scaffolding strategies in a reading classroom. There may be past research in the use of gesture in the classroom, however, many are contextualized in the special needs field (e.g. Barkley, 1998; Church, 1999; DuPaul, & Stoner, 1994; Radford, 2009) as well as in the Mathematic and Science instruction (e.g. Reynolds & Reeve, 2002; Radford, 2003; Nemirovsky, 2003). This section will highlight relevant studies conducted and argue for the gap in literature where the use of gesture is studied in a typical development classroom of reading instruction for English and English as second language learners.

The use of gesture is recognised as an important resource for meaning making in Greek rhetoric. Quintilian (AD 35-100) is one of the first in recorded history to draw attention to the use of gesture. He distinguishes rhetorical delivery into *vox* (voice) and *gestus* (the use of gesture) in his exposition, *The Art of Gesture*. Cicero (106-43 BC) expounds on rhetorical skills and introduces the conception of ‘body language’ (*sermo corporis*) or the ‘eloquence of the body’ (*eloquentia corporis*). Interestingly, though unsurprisingly, given the privileging of language in academia, gesture as a subject of study has attracted little serious academic interest for decades. This is until the emergence of the field of non-verbal communication in the second half of 20<sup>th</sup> century. Research in non-verbal communication, specifically in the study of gesture, has been championed by scholars such as Kendon (1988, 2000, 2004), and McNeill (1992, 2005).

According to Koenig (2002), gesture is a performative medium. It achieves its “primary effect through its embodied coordination in and through interaction” (p. 1). Past research on gesture has focused on its linguistic and pragmatic (Kendon, 1995; 1997), psychological (McNeill, 1992), and interactional (Goodwin, 1998; 2000) aspects. However, very few have examined gesture as performance. Stucky (1993) uses the term ‘Natural Performance’ (NP) to describe the staging of naturally-occurring talk or an ethnographic representation of interaction. NP provides a powerful basis for a performative approach to an embodied cognition (Thelen, 1995) and, subsequently, to scholarship about gesture. One of the ways that cognition is seen as embodied is through the close relation of hand gestures with thinking and

communication (Nathan, 2008). However, the studies on gesture research and embodied cognition have been largely independent (Nathan, 2008).

Like every semiotic resource that is investigated from disparate disciplinary orientations, fundamental questions on its definition and nature are problematised. For instance, the question of what constitutes a unit of gesture remains contested, with compelling reasons offered for the various perspectives. Within the field of non-verbal communication, Kendon (2000, p. 8) proposes that a gesture consists of “phases of bodily action that have those characteristics that permit them to be ‘recognized’ as components of willing communicative action”. However, this begs the question of recognition by whom? In addition, there can be concerns in the subjectivity involved in identifying unambiguously what is “willing communicative gesture”. Kendon (2004) explains that a prototypical gesture passes through three phases- the preparation, the stroke, and retraction. The stroke phase is the only obligatory element in a gesture. McNeill (1992, p. 375) describes the stroke phase as “the phase carried out with the quality of ‘effort’ a gesture in kinesic term”. He argues that “[s]emantically, it is the content-bearing part of the gesture” (McNeill, 1992, p. 376).

In developing the definition and nature of gesture, some researchers in the field of non-verbal communication have classified gesture into various types. For instance, Ekman and Friesen (1969; 1974), Scherer and Ekman (1982) and others propose the categories of Emblems, Illustrators, Regulators, Adaptors and Affect Displays. The precise nomenclature may vary from one researcher to another. Also, not all of them may identify all the categories of McNeill’s taxonomy of gestures (1992). The field of gesture studies yields at least two distinct perspectives most frequently represented in the gesture literature. They are the information-packaging hypothesis (McNeill, 1992) and the word retrieval hypothesis (Krauss, Morrel-Samuels, & Colasante, 1991) In McNeill’s information-packaging hypothesis, the act of gesturing for communication is essentially inseparable from the verbal message and rests at the conceptual level. He acknowledges Adam Kendon (Kendon, 1988) as the spearhead for proposing language and gesture as a single coordinated system where the two aspects are different parts of a whole but not completely separable. Within this single system, language and gesture are ‘expressed’ via verbal and spatial

means, respectively, providing a temporally-linked, multidimensional, content-rich message. Spoken language and gesture are produced in parallel and gesture is subsumed in the planning stages of language production (McNeill, 1992). In contrast, Morrel-Samuels and Krauss (1992) argue that communicative gesture is used as an exclusively supplemental mechanism, to facilitate spoken language. Krauss and colleagues (1996), in conjunction with Butterworth and Hadar (1987), posit that gesture is engaged as a preverbal priming mechanism, and is enacted most frequently during word finding, specifically when additional (spatial) information is needed to prime and access a word for production. This view of gesture production is particularly relevant to the study on semiotic resources used in a reading instruction, given that speech and gesture are used in parallel when making meaning.

The coding systems implemented to measure and study gesture (based on a seemingly limitless number of definitions) are applied differently by subject and by communicative context. While there are several templates discussed earlier for gesture coding systems (McNeill, 1992, Krauss et al., 1991), a single coding system (i.e. what 'counts' as a specific type of gesture) has yet to be agreed upon, such that the reliability and validity of individual gesture studies is in question, and integration or a meta-analysis of findings across gesture studies is virtually impossible. Finally, at the most fundamental level, the literature proposes an array of descriptions for what constitutes a communicative gesture in the components of the available coding systems, but there is no actual operational definition of gesture (Scharp, Tompkins & Iverson, 2007). This may complicate the interpretation and the integration of gesture studies, as well as application of findings to psychological and pedagogical studies. However, this study proposes the combination of the best of McNeill's (1985, 1992) and Martinec's (2000) taxonomy of gestures. This will be elaborated in the following paragraphs.

Figure 2 shows the taxonomy of gestures that it is used in this study (McNeill, 1985). It has been divided into two major categories: imagistic and non-imagistic gestures depending on their level of concreteness and their capacity to convey imagery. Each of the gestures has its own properties:

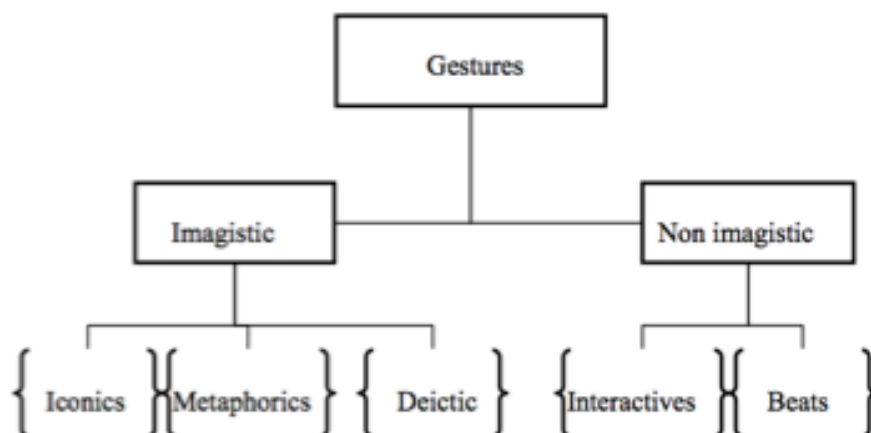


Figure 2 McNeill's taxonomy (1985)

Firstly, iconic refers to such gestures that present images of concrete entities and/or actions. They are closely link to the semantic content of the talk. It illustrates what it is being said. They can be kinetographic, representing some bodily action. Or pictographic, representing the actual form of the object. For example, see findings from classroom data (refer to chapter 4): A teacher places both her hands on the side of her head and leans it to the side, indicating an iconic gesture of going to 'sleep'. Secondly, metaphoric gestures can present images of the abstract. There is an iconic component - the form of the gesture resembles holding an object, and a metaphoric component - holding an object can also be a metaphor for representing an abstract meaning. It also involves the metaphoric use of the space. They can also be kinetographic or pictographic. For example, see findings from classroom data (refer to chapter 4): A teacher uses her hand to grip an imaginary dagger and thrusts it into her abdomen, indicating an iconic gesture of when a character is 'stabbed' or 'killed'.

Thirdly, although the prototypical deictic gesture is the hand with an extended index finger, almost any extensible body part or held object can be used for pointing. Here, a distinction is made between the ones that accompany any other visual element (images or objects) or abstract pointing (species of metaphoric gesture) -and in this case they will be considered as imagistic-, and the pointing movements that have to do normally with classroom management (talking turns) called "interactive gestures". For example, see findings from classroom data (refer to chapter 4): A teacher uses her hand, finger or objects, like a ruler, to point to a student, indicating a turn is passed for the student to take the floor or to provide a response/answer. Finally, beat gestures

are movements that do not represent a discernible meaning. They took the form of the hand beating tone. It is the equivalent use of a yellow highlighter on a written text. It is used to emphasize. For example, see findings from classroom data (refer to chapter 4): A teacher uses both her hands to indicate a ‘beat’ movement, either left and right or up and down, whenever she stresses a key point in her speech.

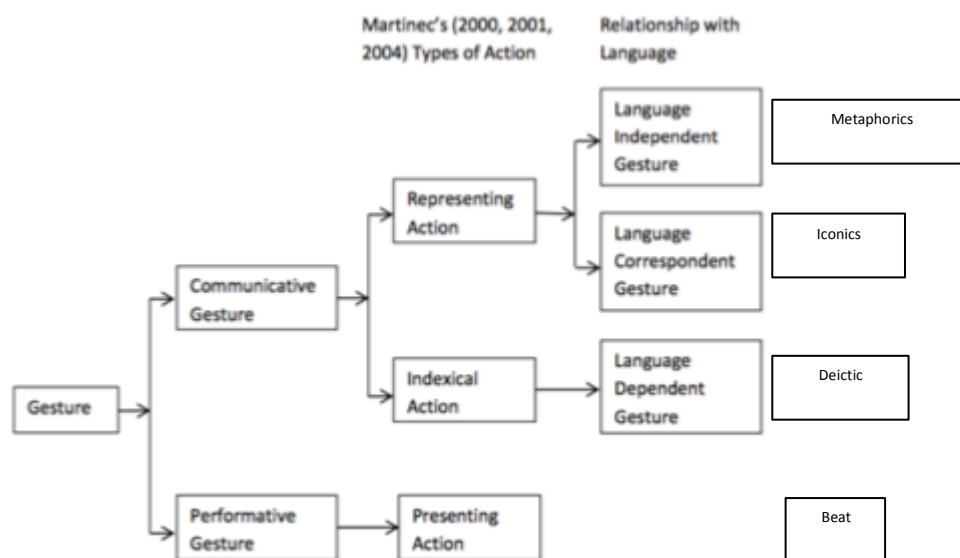


Figure 3 Study's Classification of Gestures

Martinec (2000) proposes that actions can be classified into Presenting Action, Representing Action and Indexical Action. Martinec (2000) defines Presenting Action as “most often used for some practical purpose” and “communicates non-representational meanings” (p. 243). They are classified as Performative Gestures in this study. Representing Actions function as a means of representation. They are classified as Communicative Gestures in this study. In terms of its relationship with language, Representing Action can also be described as Language Correspondent Gesture or Language Independent Gesture in this study. Indexical Action usually only co-occurs with speech and “in order to retrieve its full meaning, one has to have access to the second-order context which is represented simultaneously in indexical action and concurrent speech” (Martinec, 2000, p. 244). Indexical Action is classified as Communicative Gesture and is described as Language Dependent Gesture in this study.

In an effort to streamline the gesture classifications proposed by Martinec (2000) and McNeill (1985) to suit the current research, the overall classification of gesture proposed in this study is illustrated in Figure 3 above. It shows how Martinec's (2000) Representing Action (Language Independent and Language Correspondent) is essentially what McNeill (1985) categorized as Metaphorics and Iconic gestures. Also, Martinec's Indexical Action (Language Dependent) and Presenting Action are McNeill's (1985) Deictic and Beat gestures. Thus, the final categories adopted in the coding of gestures in this study: metaphorics, iconics, deictic and beat. (Refer to Results and Discussion in Chapter 4.) In addition, the researcher ensured that a description of the form of gestures used by the teachers and students were included in the multimodal transcriptions. Furthermore, the meaning of every gesture used was also highlighted after considering the response to the presented gesture.

### **2.7.1 Use of Gestures in the Classroom**

In the classroom, a teacher would use gestures where the information is not being understood by the student, or when the grammar of an utterance is more complex. This is where scaffolding takes place. In a related study, students' use of non-verbal practices, such as eye gaze and gesture, is examined during repairs (Radford and Mahon 2010c). In their study, Radford and Mahon focused on how children are provided with opportunities for language learning through discourse with their teacher, the ways in which they demonstrate uptake of these opportunities and the role of non-verbal resources of gaze and gesture in such discourse (Radford, Ireson & Mahon, 2012). Similarly, Roth (2001), in his literary review on the topic of gestures in teaching and learning, included an example of a physics explanation by a high school student. He discovered that the listener did not understand the message completely only with the verbal component; that is, when no gestures were used. However, only with the gesture component is the listener able to understand what it is being communicated. This is otherwise known as an augmentative function of gestures (Millar, Light & Schlosser, 2006).

Gesture is indeed a prevalent phenomenon, occurring across ages, tasks and cultures (Goldin-Meadow, 2000). Research in math lessons suggests that learners are better able to understand when speech is accompanied by meaningful gestures (Cook

& Goldin-Meadow, 2006). Goldin-Meadow, Kim and Singer (1999) studied how teacher's gestures influenced third and fourth grade students' ability to solve and explain mathematical equivalence problems. They coded teachers' verbal and gestural problem solving strategies against students' responses. It was found that the students were more likely to reiterate the teacher's use of strategies when the teachers had used gestures to accompany the strategy taught. Their findings proved that learners are able to take advantage of information presented with gestural representation. However, the same positive outcome when learners are given access to teacher's gestures may not be applicable to a classroom of learners with lower levels of language competencies or oral language skills.

According to Broaders, Wagner- Cook, Mitchell, and Goldin-Meadow (2007) implicit knowledge can be revealed when gestures are used. In their research, they were keen to determine if fourth-grade learners were able express implicit mathematical knowledge if gesture production was encouraged (Broaders et al., 2007). Students were asked to solve two sets of mathematical equivalence problems. They were asked to solve the first set and explain how they solved them without any instructions about their hand movements. For the next set, they were asked to solve the problems and explain how they solved them with either of the following conditions: (1) no instructions about their hand movements (2) instructions to move their hands or (3) instructions to not move their hands. The study assessed the number of new strategies expressed by the students and found students in the gesture-encouraged group added more problem-solving strategies in comparison to those assigned to the control and gesture discouraged groups.

This result led to a second study in which Broaders et al. (2007) explored whether children who were encouraged to gesture would be more receptive to instruction. In this study, a different group of participants completed six problems on paper and then explained their reasoning while either being instructed to gesture or being discouraged from gesturing. Subsequently, the students were given a lesson in mathematical equivalence. Those who were encouraged to gesture solved more problems correctly in a post-test after the math instruction in comparison to those who were discouraged from gesturing. These results suggest that the children had implicit access to the knowledge that they had produced in their own gestures



(Garber, Alibali, & Goldin-Meadow, 1998). Therefore, since learners have at least partial access to cognitive information represented in the nonverbal gesture, it is relevant to ask if learners would be able to access and benefit from information produced in gestures used by their teachers.

There were several attempts in the past to study the importance of gestures in English as second language classrooms. That is the case of Allen (2000), who observed one female teacher in a listening comprehension lesson. Her study deals with a detailed description of the gestures being used by the Spanish teacher. Nevertheless, the essential part focuses on the students' commentaries during interviews. They all agreed on the "great aid" the teacher's gesture was for their understanding. (Allen, 2000, p.169). Allen's (2000) observations reveal that the L2 teacher used gesture for a number of functions, including helping students understand lexical items and other linguistic aspects of the L2. More recently, Lazaraton (2004) conducted another video-recorded observational study of the speech and gestures used by a non-native English as a second language instructor. In his micro-analytic research he observed the gestures and non-verbal behavior the teacher used while explaining the meaning of 18 lexical items. He discovered that the types of gestures applied were, as in Adam's work, iconics, emblems, deictics, and beats (McNeill, 1985). Overall the results showed that gestures are an essential scaffolding tool of pedagogy in English as second language (L2) classrooms. Lazaraton states that "classroom L2 learners receive considerable input in non-verbal form that may modify and make verbal input (more) comprehensible" (2004, p.111).

As we cannot perceive gestures as an individual system, but as one aspect of the same communicative process, it is essential to highlight the fact that speech and gestures do not occur at the same time. The gesture begins slightly before the spoken component. It may happen that when the speaker departs from the topic at hand, the speaker uses gesture as an indication of that departure. Most importantly, some of the gestures occur when the speaker considers his utterance to be slightly unintelligible to the listener. The speaker uses a gesture, so the listener can understand the message. McNeill (1992, p.208) states that "a gesture should occur exactly where the information conveyed is relatively unpredictable, inaccessible, and/or discontinuous". Being aware of the gestures teachers produced in the classroom involves going one

step further in the field of language learning. According to Sime (2008), all of the learners that were under her study reported that gestures were helping in relating meaning and improve comprehension. And most importantly, gestures were “perceived as providing scaffolding assistance within the ZPD” (Zone of Proximal Development) (Sime, 2008, p. 264), that is, they contributed positively to the process of classroom interaction.

From the above sections detailing gesture and scaffolding literature, it is hoped that the researcher has shed some light into the justifications for the use of gesture and scaffolding classifications as a framework for the analysis of the study. To examine the process of scaffolding with gestures and speech, the scaffolding classifications by Wood, Bruner and Ross (1976) as well as Tharp and Gallimore (1988), and the gesture classifications by Martinec (2000) and McNeill (1992) were applied on the analysis of the teacher’s multisemiotic discourse in the reading classroom. This study demonstrates that speech, together with gestures, are used as essential tools for scaffolding in the reading classroom, in order to benefit students’ comprehension and overall understanding of their reading.

## **2.8 Conclusion: Filling in the Gap**

This research should inform teacher development and professional learning that include longer-term opportunities for collaboration, autonomy and reflection (Poulson & Avramidis, 2003). Indeed, there has not been a defined and strategic approach to support the pedagogical effect on classroom talk for teachers to adopt effectively (Sen, 2010). Given the gap in literature specifically addressing the utilization of talk with multisemiotic resources in relation to English language learning and reading comprehension at the secondary and primary level, more empirical exploration in the form of detailed observational study is needed; particularly in the promotion of desirable pedagogical effects for practitioners’ uptake and professional learning.

## Chapter Three

### 3.0 Research Design

This study takes a socio-cultural perspective on the study of teaching and learning processes in the classroom. The methodological framework is qualitative and interpretive. As Merriam (1998, p. 4) suggests, “in interpretive research, education is considered to be a process and school is a lived experience”; this is consistent with the sociocultural theoretical framework adopted in the present study. Accordingly, the search is for the interpretation of meanings in social contexts that have not been transformed or manipulated. The chosen strategy of investigation in this observation research is the ‘case study’ - specifically, multiple case studies of primary and secondary teachers from selected Singapore-based British international schools and Singapore schools.

In examining the teacher/student interaction applicable to the research aims, this study involves direct observation of teachers and students in the classroom. Classroom observation is a relatively affordable means for obtaining objective and quantifiable records of teacher and student behaviors in classroom (Medley, 1982). However, it is necessary to distinguish the types of classroom observation, and justify this study’s adoption of the unstructured, ethnographic approach. A fundamental aim of the present study is cultural interpretation of the Singapore English Language classrooms, where English Language is taught as a first language to most learners whose home language is not English Language (Sen, 2010). As Punch (1998, p.160) suggests, commitment to cultural interpretation is an ‘overarching characteristic of the ethnographic approach’. Ethnography fits the research’s observational design. Besides, the conversation analysis of the classroom talk to be studied stems from ethnomethodology. As Bruner (1996, p.6) states, ‘the meaning making of the culturalist is in principle interpretive’.

Structured or systematic observation of classrooms refers to “observations of classroom behaviour made by a trained observer who records the behaviours according to an observation system.” (Medley, 1982). It involves the collection of quantitative observational data for direct observations. Structured observation is a system consisting of a list of prespecified items or categories of behavior to be

observed, thus behaviours not listed are ignored (Medley, Coker, & Soar, 1984). Researchers collect data on frequency and length of specific behaviours in the classroom. Generally the categories for predetermined behaviours are extensive, exclusive, and well defined (Boehm & Weingberg, 1997). However, the validity and usefulness of the systematic observation have been challenged in several studies (see, for example, Mercer, 2007). Criticism of the structured observation approach to classroom research includes it being behaviourist in orientation and assuming a “stimulus/response progression to classroom discourse” (Walsh, 2006: 40). In a similar vein, Edwards and Westgate (1994) argue that such system-based observation is more helpful in developing competencies and raising awareness in teachers, than in classroom research. Furthermore, structured observation instruments have also been sometimes deemed as overly rigid and too broad. Hence, it may not be adequate to deal with the complexities and nuances present in classroom interaction.

In unstructured observation, the researcher may have some general ideas of what might be salient, but not of what specifically will be observed. Therefore, observation is holistic, unstructured, and unfocused, with the investigator attempting to document as much as possible about the setting and its participants in order to discover themes of interest (McKechnie, 2008). Unstructured observation is not constrained by checklists and coding schemes; rather, the researcher reports in narrative style about observations that are relevant to the research questions. Thus, unstructured observation is most frequently associated with an interpretivist, constructivist paradigm that emphasizes the importance of context.

Conversation analysis, which stems from the understanding that social context is constantly (re)shaped by the interlocutors’ use of language, is appropriate for the unstructured observational approach. Moreover, as the aim of conversation analysis in the classroom is to identify the structural organisation of the interaction, as determined by the participants, there is no need to suit or categorise the data into any system or framework. Levinson (1983) and Seedhouse (2004) explain that the focus is rightfully on the interaction patterns emerging from the data, rather than relying on any preconceived notions or systems. Walsh (2006) also observes that the unstructured observation approach is better equipped to interpret and account for the multi-layered structure of classroom interaction than the structured approach. This is

because it examines the utterances in sequence and in relation to the context of the classroom discourse.

However, unstructured observation does come with its limitations. It does not seem to express any 'order' on the dynamic and complex classroom interaction. Given the lack of preconceived categories proposed, Walsh (2006, p. 54) suggests that the selection of data for analysis may also be seen as "whimsical or idealised to illustrate particular points". As an ethnomethodological research, conversation analysis approach seems to focus predominantly on the reporting of trends, tendencies and patterns that might not be generalisable or replicable. Nevertheless, this study stands to counter such limitations with the assertion that the credibility of an unstructured, ethnographic research "pivots on the robustness of the conclusions drawn are consistent with the evidence provided" (Flewitt, 2006, p. 46). While both the structured and unstructured approaches identify salient features of pedagogic discourse and are useful in their own right in eliciting observations and trends for analysis, the focus has been placed overwhelmingly on language alone. Therefore, in ensuring that other semiotic resource, like gesture, is not neglected, this study adopts the unstructured ethnographic approach to classroom observation. With this approach, the participants' semiotic mediation of speech and gesture can be examined in greater detail, within the context of reading instruction.

Blaxter, Hughes & Tight (2001) argue that a research methodology is composed of the underlying paradigm and approach used within a study, as compared to research methods which apply to the specific techniques of data collection. The interpretivist paradigm is arguably well suited to the social sciences giving credence to the understanding of themes (Blaxter et al, 2001). Although the interpretivist paradigm has been criticized for a lack in rigour (Weinberg, 2002), as it is associated to the lack of statistical analysis of a systematic research approach, it is nonetheless possible to maintain a high degree of rigour within interpretivist research (Denscombe, 2002). One such approach is the use of the strategies described by Glaser & Strauss (1967) leading to the development of grounded theory. The application of such techniques has collectively become known as 'Grounded Theory', synonymous with methods of data collection, analysis, and ultimately, result. In the context of this research study, application of the Grounded theory is suitably adapted

for data collection processes rather than the intent to form new theory (Glaser & Strauss, 1967; Strauss & Corbin, 1998). While the study has specific theoretical underpinnings supporting its research aims, data collected has been analysed with an opportunity for the data to ‘speak for itself’. This allows for themes to emerge without any restrictive personal lens. Therefore, its use in this research is still well placed. Researchers may argue that the thorough application of grounded theory is arguably unsuited to small-scale projects (with negligible funding) as it places heavy demands on resources. Nevertheless, the theme-based analysis techniques rooted in the principle of grounded theory can offer an acceptable compromise. Such an approach has been adopted within this study.

### **3.1 Research Methodology**

From the perspective of exploratory research and the likely sampling frame for a small-scale research, a multiple case study strategy is a feasible option (Blaxter, Hughes & Tight, 2001). The use of case studies implies the exploration of cases (or a singular case) within a framework of contextual data; collected within the researchable setting. The present study aims to present a ‘holistic overview’ through the application of such a multiple case study strategy. The case study method: is anchored in real-life situations (Merriam, 1998); deliberately covers contextual situations (Yin, 2003); is most appropriate for studies which ask how and why questions (Yin, 2003, p.1); prefers a focus on process and understanding (Merriam, 1998); and offers insights and illuminates meanings (Merriam, 1998). For these reasons, and for the assumptions inherent in the socio-cultural, interpretivist framework adopted in the study, the case study appears to be the most appropriate investigative strategy to answer the research questions. Contextualised in a multiple case studies of primary and secondary teachers from selected Singapore-based British international schools and Singapore schools and their English reading lessons, this multiple case study (Phase 2) seeks to utilise the piloted (Phase 1) analytical approach, which is informed by theories of scaffolding and use of gesture, in studying the pedagogic discourse of reading instruction. The findings of the previous pilot study (Phase 1) have informed the design for this larger multiple case studies of selected Singapore-based British international schools and Singapore schools. As Merriam (1998, p.41) suggests,

“the case study results in a rich and holistic account of the phenomenon ... educational processes, problems, and programs can be examined to bring about understanding that in turn can affect and perhaps even improve practice.”

A fundamental aim of this research study is to reflect on the research processes so as to provide a rich and holistic account of the kind of talk for meaning making that takes place in reading instruction, and to bring about understanding that may affect and perhaps even improve practice.

### **3.2 Research Sample**

The study adopts a purposeful sampling of teacher participants from one junior and one senior school of a Singapore-based British international school and one primary and one secondary school in Singapore. While there is no data to specifically report the proportion of bilingual (L2) or monolingual (L1) students from each school, the school profiles provided the researcher with ample information about the student population of each school. The students from the schools in the Singapore-based British international school are largely monolingual while the students from the schools in Singapore are largely bilingual. The Singapore primary and secondary schools were selected from a large-scale research project ‘Core 2 Research Programme: Pedagogy and Assessment’, the researcher was involved in while working at a research centre in Singapore. (Refer to Appendix 1 for details on the Core 2 project.) The research programme participating schools are examined for the changes of teachers’ classroom practices in response to the national initiative, TLLM explained earlier. The junior and senior schools of the selected Singapore-based British international school were selected as they fulfill the geographical requirements of the researcher who is based in Singapore. British-based international schools monitored and inspected under UK’s regulatory body, Office for Standards in Education (OFSTED) were invited to participate in the study, of which the selected two schools were finally included.

#### **3.2.1 Sampling Strategy for Teachers/Students (Participant Sample)**

This study aims to conceptualize a multisemiotic dialogic teaching model of scaffolding strategies, useful for practitioners to adopt when designing reading lessons. This imposed the requirement to capture rich, high-quality classroom talk for

meaning making. Therefore, a purposeful and convenience sample of English Language primary and secondary classroom observation videos were selected to represent data from the Singapore schools and Singapore-based British international schools.

To form the Singapore cases of teacher-student discourse sample, two participating teachers, with classes of between twenty-five to forty primary five (11 years old) and secondary three students (15 years old) were selected. Under the 'Core 2 Research Programme: Pedagogy and Assessment' research project, data was collected from 70 schools. (Refer to Appendix 1 for details of the project.) This was in the form of classroom observations of 343 units of Primary 5 and Secondary 3 lessons in 7 subjects: English Language, Math, Science, Social Studies, Chinese Language, Malay Language, and Tamil Language. A total of 46 coders from the research centre, representing various disciplines, were involved in the classroom observations. The schools were chosen using stratified random sampling, taking into account the level of achievement of the school and school type. The sample of classes to be observed reflected the national breakdown of streams. Once a school had been chosen, the subject-stream combination to be observed was determined. Finally, the teachers and classrooms observed for that particular subject-stream combination were randomly chosen. For the purpose of this study, the English-Express stream (high to mixed-average ability) combination was selected, of which 2 teachers/classes focusing in a reading instruction unit of work were randomly selected to represent the Singapore data for this study.

To form the Singapore-based British international school cases of teacher-student discourse sample, two participating teachers, with classes of about twenty-five Year 6 (11 years old) and twenty Year 10 students (15 years old) were selected. When the Singapore-based British international junior and senior schools were selected, the researcher had left it to the Heads of Junior and Senior Schools to work with their Year 6 and Year 10 teachers. The selection of the classes was made in consideration of the teachers' availability for observation. When the two teachers indicated their availability and consent for the researcher to conduct an observational (video-recorded) study, the only condition shared was for the lessons to be of a reading instruction.



Findings of CA studies suggest that any phenomena described may be quite general, possibly universal or species-specific (Sidnell 2001). However, it is clear that conversation involves the mobilization of the local resources of particular languages social formations, and that conversational practices may be constrained or shaped by culture-specific phenomena (Schegloff 2006). Therefore, the researcher ensured that demographic differences between the teacher and student-participants are acknowledged in this study. The teacher participants consisted of three female teachers and one male teacher, with similar ages (mid 30s) and years of experience (7-12 years). The class sizes between the Singapore schools and British international schools were varied due to the expected norms of each context of school environment. A typical class size for a Singapore school is 38-40 students, while that of a Singapore-based international school is 20-25 students. The level of student participation was found to be similar for each age-level. Further information on the language background of the largely monolingual students from the British international junior and senior schools as well as the largely bilingual students from the Singapore schools is included in Appendix 5. This highlights the fact reiterated earlier in Chapter 1 that the data could not be representative across all teachers and students but provides a proof of concept for a legitimate area of research.

Table 1 Basic Demographic of Teacher and Student-participants

	<b>Singapore Primary</b>	<b>Singapore Secondary</b>	<b>British international school Primary</b>	<b>British international school Secondary</b>
<b>Teacher-participants</b>				
Pseudo names	Ms Anna	Mrs Sue	Mr John	Ms Jane
Gender/Age	F/32	F/38	M/35	F/33
Years of experience	7	12	10	8
	<b>Singapore Primary</b>	<b>Singapore Secondary</b>	<b>British international school Primary</b>	<b>British international school Secondary</b>
<b>Student-participants</b>				
Class size	40	38	25	20
Age	11-year old	15-year old	11-year old	15-year old
Level of Participation	Mid-High	Mid-Low	Mid-High	Mid-Low
English language ability	Bilingual	Bilingual	Monolingual	Monolingual

Table 1 above summarises the basic demographic information gathered about the teacher and student participants.

### **3.2.2 Sampling Strategy for Lessons/Activities (Event Sample)**

Since the study focuses on classroom talk for meaning making in the context of a reading instruction, lessons video-recorded and observed were of those where the teacher participant covered specifically a reading instruction unit of work – this covered reading comprehension at the primary-level and literature/literacy lesson at the secondary-level. More importantly, the genre of text type selected had to be fiction. The number of lessons for the unit of work depended entirely on the teacher's own designed curriculum. In order to ensure consistency in the context of encouraging talk for meaning making, these lessons were chosen to involve teacher expositions and teacher-students interactional (I-R-E/F) sequences.

The thematic-based extracts of the Singapore schools and Singapore-based British international schools pedagogic discourse were selected respectively from the study's (i) secondary source of data, a large-scale research project 'Core 2 Research Programme: Pedagogy and Assessment', which the researcher was involved in while working at a research centre in Singapore; and (ii) primary source of data, which consists of video-recording lessons from the two identified British-based international schools.

After all lessons were viewed, video recordings of some lessons were selected as they were found to be the most representative of the recurring reading skills and reading comprehension concepts taught in the unit of work. The selected segments were then transcribed; both verbatim and screen captures of the use of appropriate and relevant gestures. Thematic extracts selected represent (1) discourse of meaning-making learning experiences while the teacher is 'going through' or discussing the reading passage in class, (2) discourse of meaning-making learning experiences while the teacher is checking students' responses and understanding of inferences from the reading passage. These extracts demonstrate a rich discourse between the teachers and students, including the use of gestures, as part of providing scaffolding techniques to encourage deeper understanding of the students' reading. Teacher-fronted activities, rather than group work, were chosen as a context frame for examining teacher questions and gestures. After repeated viewing of the recordings, it was found that teachers use questions and gestures frequently as scaffolding tools when interacting with the entire class. Finally, the selected extracts were kept

consistently similar in length and turn length. This was done by counting the number of turns by the teacher and students in each selected extract. The researcher ensured that the number of turns was kept between 30 and 36 for all extracts. Thus this kept the extracts for each age group relatively similar in length, while the meaningful interactions within the thematic extracts were effectively captured.

### **3.3 Data Collection**

Thick description has been described as a strategy for ensuring the criteria of dependability (Yin, 2003, p. 38) and transferability (Lincoln & Guba, 1985, pp. 316, 359). According to Cohen et al (2000, p. 311) thick description might involve “recording: speech acts, non-verbal communication; description in low inference vocabulary; careful and frequent recording of the time and timing of events; the observer’s comments that are placed into categories; detailed contextual data”. Lincoln and Guba (1985) argued that it is the inquirer’s responsibility to provide a sufficient description of her/his case study that can “permit a person contemplating application in another receiving setting to make the needed comparisons of similarity” (p. 360).

In social interaction, participants construct the knowledge collaboratively by means of conversational patterns, not only by speaking and listening to one another, but also by performing and observing body language (e.g., facial expression, gesture, and posture), prosodic features of utterances (e.g., pitch variation, loudness, pausing, pacing), and linguistic signals (choice of vocabulary, level of formality, choice of pronouns) (Goodwin, 2000; Tannen, 1993). Verbal and non-verbal displays often reinforce one another and will both contribute to understanding the participants’ behaviour emerging from their interaction. Non-verbal behaviours of the students during group work that serve non-communicative functions can provide information about the non-communicative functions they serve (Robert, Yihsiu, & Purnima, 1996). The complexity of a discourse as a teacher-student interaction occurring in a social and cultural setting requires the classroom observations to utilise the video recording technique. This technique can provide a permanent and full record of the teacher’s/students’ verbal interaction and non-verbal actions in more detail and consequently enable the re-examination of the data using slow motion facilities necessary for the construction of the transcripts. Moreover, video recordings of the

gesture and facial expressions provide access to the fine details of conduct, both discourse and bodily comportment, to be taken into account while analysing the meanings and functions underlying teacher's/student's multisemiotic; speech and gestures, used for meaning-making.

The study utilized a video-recording protocol that was shared with the teacher-participants in the study (Refer to Appendix 3 for Video-recording Protocol). This ensured that the teachers were aware of the positions of the video recorders to be set-up in the classrooms. Furthermore, the protocol also served to reassure the teachers that the recording would not be intrusive and distracting for the students. The two researchers who conducted the video recording were made to study and be familiarized with the protocol before any recording commenced. There were two video recorders, each consisting of a tripod, a video camera, a wireless transmitter and receiver (paired). One video recorder focused on the whole class and another on the teacher. The latter video recorder tracked and recorded the teacher's talk, movements, interactions, demonstration, or presentation throughout the lesson, while the former video recorder had a wide-angle lens to capture a full picture of classroom interactions. At times, if a student was appointed a turn, this camera might zoom to capture the student's use of gesture more closely. Both cameras remained stationary for most parts of the lesson recording. However, the researcher may move the video camera to 'follow' the teacher if his/her movements were over a larger area in the classroom.

The recordings of the semiotic mediation of speech and use of gesture within the Singapore schools and Singapore-based British international school pedagogic discourse of reading instruction were transcribed. This was done with the inclusion of visual contextual features described – description of the use of gesture and a screen-capture of the actual gesture was embedded within the analytic table of thematic extracts (see chapter four). An adapted conversational analysis (CA) approach to transcribing was adopted in the analysis (Jefferson, 1987). Additionally, to answer the research questions and achieve the research aims, the transcription was accompanied with screen captures of the actual pedagogic discourse being examined, set in carefully selected thematic-based extracts. To include visual contextual features (gestures, facial expressions, etc), embedded within the transcription, a multimodal

text analysis and multimodal transcription were combined in order to develop insights concerning the ways in which multisemiotic meaning-making resources are integrated to a discourse level in such multimodal classroom discourses. However, since the analysis was complex and detailed, the researcher decided not to adopt a thorough CA-approach of transcription. Thus conventions such as pauses, overlap, volume, pitch and characteristics (e.g. phonetics, intonations) of delivery of utterances had not been included. It is a justifiable decision, as the research focus of the study did not depend on these specific details of the CA analysis.

Observational data are inherently vulnerable to subjectivity, which is usually influenced by observers' gender, race, age, bias, and expectations. For example, observers' beliefs and prior experiences or knowledge can lead to misinterpretation of what they observe instead of describing what really happened objectively (Good & Brophy, 1994). Thus, it was critical for the Research Programme's observation protocols to be reliable across the video-recording team (inter-individual agreement) and across time (intra-individual agreement) (Boehm & Weinberg, 1997). Additionally, in order to reduce the observer effect (e.g., Samph, 1976) or Hawthorne Effect (e.g., Mackey & Gass, 2005) and to have the data reflect the natural and usual behaviour in the classroom, both video cameras were set up swiftly just as the students enter the classroom and get ready for the lesson. Also, they were fixed in position at inconspicuous corners of the classroom. Participating teachers were requested not to make special preparations for the lesson or to do anything out of the ordinary as the research sought to collect data that are representative of regular lessons they conduct with students, thereby reducing threats to validity. In fact, it was demonstrated that when teachers are aware of and assured of the low stakes nature of classroom observations, teacher behaviors tend to be consistent from one observation occasion to another (Tollefson, Lee, & Webber, 2001).

### **3.4 Analysis of Data**

A rigorous analysis of multisemiotic data of pedagogic discourse usually involves detailed transcription and annotation of the multimodal corpus. For the purpose of analysis, teacher-fronted segments of thematic extracts were identified from all the participating Singapore-based British international school and Singapore schools. Analyzing the data included noting information about the topic, reading text, lesson

objectives and skills taught and/or concepts discussed in the lesson. In addition, for each thematic extract, the context of lesson, features of talk and use of semiotic resources were noted. Within each table of thematic extracts that were analysed, the researcher annotated for specific codes like open and close questions, short and extended responses, and teacher inputs, topic initiations/invitations, as well as teacher and student repairs. In sum, the segments identified formed a thematic sampling, where the way in which the extracts were identified for analysis was driven by theory on scaffolding, gesture and the research questions in the study.

In CA, the trouble source (TS) describes an identifiable problem in talk that is in need of repair. When the speaker of the TS repairs his or her own utterance spontaneously, it is referred to as self-initiated repair (SR). When somebody other than the speaker of the TS performs a repair of the trouble, it is referred to as other-initiated repair (OIR). It was crucial in this study that the analysis showed the distinction between teachers' corrections (high adult control) and other-initiated repairs (which foster learner independence). Furthermore, this highlights the fact that corrections would most likely reduce the student's epistemic authority while other-initiated repairs would foster active involvement in meaning negotiation (Radford, 2010a, 2010b). In addition, Schegloff, Jefferson, and Sacks (1977) highlighted a type of repair in which speakers (with the trouble source) do not correct their own error in the same turn (SR) or in another turn (OISR). This would be considered as other-initiated other-repair (OIOR). More importantly within the context of classroom discourse, as highlighted by Radford, Ireson and Mahon (2006), repair turns are crucial for learning because they potentially 'roam' in the child's zone of proximal development, both cognitively and linguistically.

When trouble occurs, there exists what Schegloff et al. (1977) call 'multiple repair spaces' for the trouble to be dealt with. Thus, the repair and repair-initiators could occur in different places in the sequence of the talk (same turn, next turn, third turn, and third-position) and could take more than one attempt to be accomplished, adding to the complexity of the pedagogic discourse organisation. Given this background, all lesson recording were viewed repeatedly in order to isolate all instances in which there appeared to be trouble in the talk highlighted by repair. Thus, the coding of CA conventions (repairs, trouble source, topics) with screen-captures of

the accompanying use of gestures, provided a great discussion in answering the study's research questions on the role of gestures in teacher's/student's formulation of repairs. In addition, the researcher also applied some 'codes' helpful in providing useful information to answer individual research question. These codes, for example, number of occurrences of close/open questions and types of gestures, etc., were used to identify instances of the use of semiotic resources related to each research question. These codes were also identified and checked reiteratively across all thematic extracts to ensure that they are valid codes, applicable across all of the teacher and student participants. The codes only served as an extension to the analysis – an illustration of the rigour of the analysis. Although these codes are applied in the analysis of data, the main approach to analysis in this study is still largely qualitative.

In addition, the captured screenshots of the use of gestures (as non-verbal behaviour) were classified into different categories: *iconics, metaphoric, deictics and beats*. These were then coded for various intentions and means of scaffolding strategies; (A) Intentions: *Direction Maintenance, Cognitive Structuring, Reduction of Degrees of Freedom, Recruitment and Contingency*; (B) Means: *Feeding back, Hints, Instructing, Explaining, Modeling, Questioning*. Throughout the analysis, the researcher adopted the ethnomethodological structure of CA, i.e., selection and analysis should rest on demonstrable evidence that the participants themselves orient towards the events in a manner indicative of, and consistent with, the analytic focus of the research. Similarly, with the above codes identified for various intentions and means of scaffolding, the analysis will provide a great discussion in answering the study's research question on how gestures complement the teachers' scaffolding intentions and means. The 2-part analysis in studying (i) the teachers' as well as (ii) the teachers' and students' interactional patterns during the pedagogic discourse in a reading instruction was aimed at providing insights into the study's focus – how teachers and students employ the use of speech and gesture to achieve a dialogic approach to teaching and learning.

Table 2 Methods of Analysis for Each Research Question

<b>Research Question</b>	<b>Methods of Analysis</b>
What range of semiotic resources do the teachers and	(i) Identification of codes for specific utterances and type of gesture (ii) Qualitative analysis of multimodal transcription (speech and

students employ?	gestures) (See Section 4.1.1)
What evidence of contingency, fading and transfer of responsibility do the teachers demonstrate?	(i) Identification of codes for specific evidence of contingency, fading and transfer of responsibilities (ii) Qualitative analysis of multimodal transcription based on scaffolding principles: trouble source, repairs (See Section 4.1.2)
What role does the use of gestures play in the teachers' and students' formulation of repairs?	(i) Identification of codes for specific type of gesture and repair (ii) A multimodal 'Visual Frame' qualitative analysis (illustrated with screen captures) based on classifications of repairs (Self-Repair & Other-initiated Repair), and classifications of gestures: <i>iconics, metaphors, deictics and beats</i> . (See Section 4.1.3)
How does the use of gesture complement the teachers' construction of scaffolding strategies?	(i) Identification of codes for specific evidence of gesture used to complement scaffolding strategies (ii) Qualitative analysis of multimodal transcription of thematic-based extracts (from teacher-student(s) or student-student interactions based on (I) intentions and (II) means of scaffolding strategies: (I) <i>Direction Maintenance, Cognitive Structuring, Reduction of Degrees of Freedom, Recruitment and Contingency</i> ; (II) <i>Feeding back, Hints, Instructing, Explaining, Modeling, Questioning</i> . (See Section 4.1.4)
How can teachers and students employ the use of speech and gesture to achieve a dialogic approach to teaching and learning?	Qualitative analysis of multimodal transcription of thematic-based extracts based on principles of dialogic teaching: <i>collective, reciprocal, supportive, cumulative, and purposeful</i> . (See Sections 4.2 to 4.5.4)

Table 2 above summarizes how each type of data analysis was employed to answer the study's specific research questions.

Two of the research questions, the second and fourth, focus on the interactional patterns of teachers in relation to the scaffolding strategies they construct in the classrooms. The other two research questions, the first and third, look at both the interactional patterns of the teachers and students as they engage in talk involving a reading text. The final research question, the fifth, aims to explore both the teachers' and students' use of speech and gesture in creating a dialogic teaching and learning.

The analysis is informed by McNeill's (1985) and Martinec's (2000) classifications of gestures; van de Pol, Volman and Beishuizen's (2010) scaffolding principles, means and intentions; and Schegloff, Jefferson and Sacks' (1977) trouble



sources and sequences of repairs. The identification of codes was then used to identify instances of the specific use of semiotic resources related to each research question. Analysis of each of these dimensions helped to inform what goes on in the classroom. Furthermore, it allowed the researcher to have a critical lens to discuss linguistic and multimodal features of the pedagogic discourse between teacher and students, such that the multisemiotic meaning making experiences are explicated. In the next chapter, findings of the study are presented and the semiotic mediation of speech and gestures used in scaffolding principles (in the form of repairs) are discussed further.

### **3.5 Ethics**

As Punch (2000) asserts, “all social research involves consent, access and associated ethical issues, since it is based on data from people about people”. The study ensured that informed consent from all teacher participants and student assent from all student participants were obtained from the selected Singapore-based British international school and Singapore schools. The research adheres to the principles outlined in the Code of Ethics and Conduct and Code of Human Research Ethics written by the Ethics Committee of the British Psychological Society (BPS).

Since part of the data collected (secondary source of data from Singapore schools) is largely from a research study at the research centre, ethics approval was granted by the Research Ethics Committee under the Office of Education Research, National Institute of Education, Nanyang Technological University, Singapore, where institutional informed consent from all participants were gathered. (Refer to Appendix 8 for submitted supporting documents for Ethics Approval.) Participants received full information about the research including the reasons they had been chosen to participate. Participants’ privacy, confidentiality and anonymity are guaranteed. Consent forms and a covering letter were provided. The schools were assured that findings would be used appropriately, as would their reporting and dissemination.

For the primary data that was collected from British-based international schools, the study ensured that informed consent from all teacher participants and student assent from all student participants were obtained. Participants received full

information about the research aims and purposes of the study, including the reasons they had been chosen to participate. Since the study involved video recordings, participants' privacy, confidentiality and anonymity were guaranteed. The 'blurring' of minute areas of screen captures (classroom scenes) were ensured to prevent any potential facial recognition. All raw and formatted video files were stored digitally in hard drives, used exclusively for the research, with password protection. Any data shared were only with those who were part of the research (supervisor and research participants). A clear set of procedures was established to ensure data was not lost during or after data collection. The schools were assured that findings would be used appropriately, as would their reporting and dissemination. If findings of the research study is shared in the future at conferences, teacher professional development workshops or published in journal articles, participants' confidentiality and anonymity will also be guaranteed. The researcher will ensure that there is no identification of the research participants or schools. In addition, all participants and schools will be informed of such sharing and publication platforms.

## **Chapter Four**

### **4.0 Results and Discussion**

In this chapter, findings from all the secondary- and primary-level thematic extracts of discourse, from the selected Singapore-based British international school and Singapore schools are presented and analysed. A qualitative analytical approach, informed by theories of scaffolding and gesture, is applied onto these extracts such that the key features of the ‘use of gestures’ and ‘scaffolding principles’ are extrapolated. Additionally, the multimodal analysis, the use of visual frames of screenshots and transcriptions from the video recording of the lesson, is crucial in presenting the study’s findings and analysis meaningfully. In the first part of the chapter, data summarizing the frequency of occurrences of codes answering the first four research questions are presented in Tables 3-6 to compare data across all four different settings of pedagogic discourse in the Singapore-based British international school and Singapore schools classrooms. In the second part of the chapter, thematic extracts from the same pedagogic discourse are analysed to answer the final research question - How can teachers and students employ the use of speech and gesture to achieve a dialogic approach to teaching and learning?

There are a total of four sections in the second part of the chapter – Singapore secondary-level, British international school secondary-level, Singapore primary-level and British international school primary-level reading instruction. Each section begins with a brief description of the lesson focus, followed by in-depth discussions on selected thematic extracts, which are presented with the applied multimodal analysis (Figures 4-15). These extracts are included in the chapter due to their richness in pedagogic discourse – most of the identified ‘codes’ as well as the means, intentions and principles of scaffolding are present.

#### **4.1 Answering the Research Questions**

The following sections will address each of the study’s research questions.

##### **4.1.1 Research Question (i)**

(i) What range of semiotic resources do the teachers employ?

Table 3 Range of Semiotic Resources Employed by the Teachers from the Singapore-based British international school and Singapore schools

	<b>Singapore School Sec-level (36 turns)</b>	<b>British International School Sec-level (36 turns)</b>	<b>Singapore School Pri-level (34 turns)</b>	<b>British International School Pri-level (30 turns)</b>
<b>Speech</b>				
Close Questions	19	25	5	10
Open Questions	<b>17</b>	1	4	7
Evaluations	7	<b>15</b>	7	7
Reformulations	1	<b>11</b>	4	3
Repetitions	14	11	14	<b>6</b>
Feedback	<b>4</b>	11	10	9
<b>Communicative Gesture</b>				
Iconic - Language Correspondent	<b>8</b>	4	<b>10</b>	6
Deictic - Language Dependent	6	4	<b>0</b>	4
<b>Performative Gesture</b>				
Beat	2	4	4	<b>6</b>

It is found that the teachers of the British international school and Singapore school secondary-level classrooms asked more close questions compared to the teachers of the British international school and Singapore primary-level classrooms. As for the number of open questions, while the British international school secondary-level teacher asked less questions than the British international school primary-level teacher, the Singapore secondary-level teacher asked more questions than the Singapore primary-level teacher. The British international school secondary-level teacher used a greater number of evaluations and reformulations than the teachers in the other contexts. The British international school primary-level teacher used the least number of repetitions, while the Singapore secondary-level teacher gave the least number of feedback. Finally, it is interesting to note that both the Singapore secondary- and primary-level teachers used a greater number of iconic gestures in their interactions, while the British international school primary-level teacher used the greatest number of beat gestures in his interactions. These codes are in relation to the relatively similar total number of turns by the teacher and student participants across all thematic extracts in each context.

#### 4.1.2 Research Question (ii)

(ii) What evidence of contingency, fading and transfer of responsibility do the teachers demonstrate?

Table 4 Teachers' Demonstrations of Intentions and Means of Scaffolding, and Evidence of Contingency, Fading and Transfer of Responsibility

	<b>Singapore School Sec-level (36 turns)</b>	<b>British International School Sec-level (36 turns)</b>	<b>Singapore School Pri-level (34 turns)</b>	<b>British International School Pri-level (30 turns)</b>
<b>Intentions</b>	<b>Number of instances</b>			
Direction Maintenance	2	2	1	2
Contingency Management	2	<b>0</b>	1	<b>0</b>
Recruitment	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Cognitive Structuring	4	2	3	2
Reduction of Degrees of Freedom	<b>4</b>	1	1	2
<b>Means</b>	<b>Number of instances</b>			
Feeding back	1	2	<b>5</b>	1
Hints	<b>3</b>	<b>1</b>	0	0
Instructing	1	0	1	1
Explaining	1	0	<b>5</b>	2
Modeling	1	0	2	0
Questioning	<b>6</b>	<b>4</b>	2	2
<b>Scaffolding Principles</b>	<b>Number of instances</b>			
Contingency	<b>5</b>	2	2	2
Fading	<b>5</b>	2	3	2
Transfer of Responsibility	1	<b>0</b>	1	1

It is found that there was no evidence of contingency management in both the British international school secondary- and primary-level classrooms. It is interesting to note that there is evidence of contingency management in both the Singapore secondary- and primary-level classrooms when there is also evidence of the teachers' use of iconic gestures (refer to section 4.1.1). The Singapore secondary-level teacher showed the greatest number of instances of reduction of degrees of freedoms. In terms of the various means of scaffolding, the British international school and Singapore secondary-level teachers used a greater number of hints and questioning, while the Singapore primary-level teacher used the greatest number of feeding back and explaining. Overall, in the analysis of scaffolding principles, it is found that the Singapore secondary-level teacher showed a greater number of contingency and fading instances.

#### 4.1.3 Research Question (iii)

(iii) What role does the use of gestures play in the teachers'/students' formulation of repairs?

Table 5 Use of Gesture in Teachers' and Students' Formulation of Repairs

<b>Gesture in Teachers'/Students' Formulation of Repairs</b>	<b>Singapore School Sec-level (36 turns)</b>	<b>British International School Sec-level (36 turns)</b>	<b>Singapore School Pri-level (34 turns)</b>	<b>British International School Pri-level (30 turns)</b>
<b>Teachers' Total Number of Gestures</b>	16	12	14	16
Ts' Topic Repair	1	1	1	2
Ts' Other-initiated Other Repair	2	0	2	0
<b>Students' Total Number of Gestures</b>	7	0	12	4
Ss' Self-initiated Self Repair	0	0	0	0
Ss' Other-initiated Self Repair	3	0	2	1
Other-initiated Other Repair	0	0	1	0

It is found that the number of teachers' use of gestures is relatively similar in all contexts, with the exception of the British international school secondary-level teacher. Interestingly, all the teachers across all contexts used gestures as a topic repair. However, only the Singapore secondary- and primary-level teachers used gestures as other-initiated other repair in their classroom interactions. In terms of students' use of gestures, while the Singapore primary-level students used the most number of gestures, the British international school secondary-level students did not use any gesture. Finally, with the exception of the British international school secondary-level students, all other students in the other contexts used gestures as other-initiated self-repair.

#### 4.1.4 Research Question (iv)

(iv) How does the use of gesture complement the teachers' construction of scaffolding strategies?

Table 6 Use of Gesture Complementing Teachers' Construction of Scaffolding Strategies

	<b>Singapore School Sec-level</b>	<b>British International School Sec-level</b>	<b>Singapore School Pri-level</b>	<b>British International School Pri-level</b>
	<b>(No. of gestures as intentions / (Total no. of intentions))</b>			
<b>Intentions</b>				
Direction Maintenance	0/2	2/2	1/1	2/2
Contingency Management	0/2	0/0	1/1	0/0
Recruitment	0/0	0/0	0/0	0/0
Cognitive Structuring	2/4	2/2	3/3	2/2

Reduction of Degrees of Freedom	2/4	0/1	1/1	2/2
	<b>Singapore School Sec-level</b>	<b>British International School Sec-level</b>	<b>Singapore School Pri-level</b>	<b>British International School Pri-level</b>
	<b>(No. of gestures as means) / (Total no. of means)</b>			
<b>Means</b>				
Feeding back	0/1	2/2	3/5	1/1
Hints	1/3	0/1	0/0	0/0
Instructing	1/1	0/0	0/1	1/1
Explaining	1/1	0/0	5/5	2/2
Modeling	1/1	0/0	1/2	0/0
Questioning	3/6	2/4	0/2	2/3

It is found that gestures were used to complement teachers' construction of scaffolding strategies. With the exception of the use of gestures complementing the intention for recruitment, all other types of intentions and means of scaffolding strategies had evidence of the use of gestures. The British international school secondary- and primary-level as well as Singapore primary-level teachers used gestures with the intention of direction maintenance and through the means of feeding back. Additionally, almost all of the teachers in various contexts used gestures with the intentions of reduction of degrees of freedom and cognitive structuring, as well as through the means of explaining, modeling and questioning. Finally, it is highly interesting to note that all of the instances of intentions for scaffolding principles by the British international school secondary- and primary-level as well as Singapore primary-level teachers were instances of the use of gestures. This is also similar in the use of gestures through the means of various scaffolding principles. In sum, it is found that the use of gestures complemented the teachers' use of scaffolding strategies across all contexts.

#### **4.2 Singapore School Secondary-level Reading Instruction – Lesson Frame Summary**

This section offers a brief description of the reading instruction unit of work for the Secondary-level (15-year old students) Singapore classroom. The thematic extracts that will be discussed later are selected from Lesson Three of the unit. Refer to Appendix 4.1 for the unit's lesson topics, skills taught and lesson objectives.

In Lesson 3, the class teacher, Mrs Sue (a pseudonym), had gone through the reading passage ‘A Fractured Fairy Tale’ extensively in class, either in the form of teacher-directed lectures and discussions or in pair/group work student activities. In addition, she had also managed to cover all of the lesson topics and skills she intended to teach in the unit of work.


From the findings, it was observed that while speech played a central role in mediating learning, the use of gestures not only favoured students’ comprehensibility of the reading text but also gave support to their construction of meaning. The use of gestures, constituted a crucial tool (as visual inputs and repairs) for the teacher’s construction and development of scaffolding strategies. Additionally, students profited from the use of gestures in opportunities for self-repairs, which facilitated meaning making and deepened their understanding of inferences.. It is through a partnership between speech and gesture that meaning and understanding are achieved in the reading comprehension classroom studied in this study.

#### **4.2.2 Reiteration of Point: Use of Teacher’s Gesture as Input for Contingency**

During the whole class interaction, Mrs Sue was recapping student understanding about the reading passage. She had gone through paragraph-by-paragraph, identifying ‘topical sentences’ and contextual clues to assist in meaning making and understanding. Specifically, this thematic sampling features the teacher-students interaction discussing paragraph three of the reading passage. She generally controlled when a ‘turn’ was given to a student. She maintained IRE/F sequences with slightly more open questions and direct elicitations. The multiple sequences of ‘I’ & ‘R’ produced an ‘exploratory talk’ (Barnes, 2008) opportunity that could be used to elicit knowledge and understanding from students. Figure 4 below shows the multimodal analysis of the thematic extract discussed in this section.



Figure 4 Multimodal Analysis 1 of Singapore School Secondary-level

Visual Frame	Lines	Linguistic Transcription
[Gesture 1: "hung his head"] 	1	/T/ Ok. Look at paragraph 3. If coach is highlighting Zang's character, so paragraph 2 will become? <b>Open Q (Topic Initiation)</b>
	5	/S/ The coach. <b>Trouble source</b> /T/ The coach? <b>Repetition functioning as Other-initiated Repair</b> /S/ The coach made Zang learn his lesson. <b>Other-initiated Self Repair</b>
	10	/T/ Is he wanting to teach Zang a lesson or has he already taught Zang a lesson? <b>Closed Q; Reformulation (Topic Repair)</b> /S/ Already taught. <b>Self-initiated Repair; Trouble Source</b>
	15	/T/ He has already taught Zang a lesson. <b>Repetition and Reformulation</b> And then? <b>Open Q: Topic Repair</b> This is when. <b>Providing Hints</b> If you look at paragraph 3 ah, [reads the passage]. <b>Other-initiated Other Repair</b> Afterwards, I told Zang that he had not impressed me. "But Coach," he pleaded, "Chris fouled me. He..." "He what?" I demanded fiercely. "Oh, oh," Zang said. His eyes widened and <b>hung his head low [Gesture 1]</b> . The young man was no fool. I was pretty sure that the lesson had been learnt.
	20	T – 4 turns S – 3 turns

Mrs Sue used open questions as a *topic-initiation* to encourage students to rethink their responses. However, responses provided by the students were *short* and vague – “The coach” (line 4). This seemingly incomplete response was a clear trouble source presented by the student-respondent, who later provided a brief sentence as self-initiated repair. When Mrs Sue realized that the students could not answer her question, she *changed or modified her questions* so that the students could actively participate more in the discussion. This serves as a teacher’s *topic repair* – in contrast to closing the topic and reducing responsibility, Mrs Sue attempted to encourage student participation by opening the topic again. Here, she reformulated the student’s response and offered an alternative response for the student’s consideration – “Is he wanting to teach Zang a lesson or has he already taught Zang a lesson?” (lines 9 – 10) The manner in which Mrs Sue *reduced the degrees of freedom* of the ‘task at hand’ included *asking a more specific question* or a force-choice question. Yet, she seemed dissatisfied with the student’s response, *prompting with another open question* for an elaboration – “And then?” (line 14). She then read out loud a snippet of paragraph three to the class.

Within this thematic extract, Mrs Sue used the means of *Feeding back* and *Questioning*, with the intention to *support students’ cognitive activity* and give some form of *cognitive structuring* so as to assist the students to organize and justify their

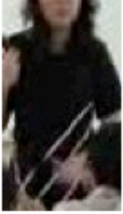
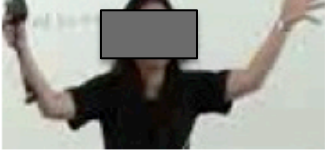

response – identifying key point of paragraph two. Furthermore, based on the student's response, there was evidence of *contingency* and *reducing the degree of freedom* as she reformulated her question to include an alternative key point for the students to consider. Here, she attempted to use topic repair (as explained above) so as to provide the scaffolding the student needed and lead the student to a more accurate key point for the paragraph.

While text as a mode remained essential within this extract as both teacher and students continued to refer to the reading passage that their discussion was based on, Mrs Sue used an *iconic gesture* to represent the meaning of “*head hung low*” (lines 18 – 19) as read in the passage. As she read out the words, she simultaneously lowered her head and looked down, acting out the representation to the phrase “*head hung low*”. The use of the *communicative gesture, which was language correspondent (iconic)* served the purpose of emphasizing the critical meaning of the phrase towards the understanding of the inference Mrs Sue was attempting to highlight the students. The use of this communicative gesture proved successful in supporting students' learning as it served as evidence of the teacher's use of other semiotic resource as an effective input for her contingency. She tailored her support by providing a hint with the use of a reformulated question followed by the demonstration of the key phrase she highlighted “*head hung low*”. This scaffolding strategy had clear potential for the facilitation of students' meaning making and development of understanding an inference.

#### **4.2.3 Exploration of Meaning: Teacher's Transfer of Responsibility**

In this thematic extract, Mrs Sue attempted to tease out the meaning of “*eyes widened and hung his head low*” as she tried to link this conceptual knowledge to a justification for an earlier inference that the character Zang had learnt his lesson. Figure 5 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 5 Multimodal Analysis 2 of Singapore School Secondary-level

Visual Frame	Lines	Linguistic Transcription
[Gesture 1: fingers spreaded out to emphasize “where”] 	1	/S/ [reads from passage] <i>The young man was no fool. I was pretty sure that the lesson had been learnt.</i> <b>Medium (R)</b>
	5	/T/ So, where [Gesture 1] is the clue* (referring to a contextual clue/details in the reading passage)? <b>Closed Q (Topic initiation)</b>
	10	/S/ Read parts of the passage. “Zang hung his head” <b>Short (R)</b>
[Gesture 2: emphasizing “the rest of you?”] 	15	/T/ So where is the clue? Can you show us how you derive the answer? <b>Closed Q (Topic Repair)</b> The rest of you? [Gesture 2] Why did Sean say that Zang hung his head? <b>Closed Q (Topic Invitation)</b> And from this sentence, this statement, whatever he has read, we can come to this conclusion. Yes?
	20	/S/ Zang said Oh... Oh... <b>Trouble source</b>
[Gesture 3: emphasizing “can somebody demonstrate?”] 	25	/T/ So what about the Oh... Oh...? <b>Elaboration, Besides the oh... oh... Closed Q functioning as Other-initiated Repair</b>
	30	/S/ His eyes widened. <b>Other initiated Self repair</b>
		/T/ So under what kind of circumstances, do we widen our eyes? <b>Closed Q functioning as Other-initiated Repair</b>
		/S/ We realize something <b>Other-initiated Self repair; Trouble source</b>
		/T/ Ok. <b>Evaluation</b> We realize something. <b>Repetition</b> So can somebody demonstrate? [Gesture 3] How do you do that? <b>Open Q (Increase Responsibility)</b> Widened his eyes and hung his head.

There is evidence of *fading* and *increase in responsibility* when the teacher attempted to give the opportunity to a student to demonstrate his understanding of the phrase by performing it to the class – “So can somebody demonstrate? How do you do that?” (lines 28 – 29).

Mrs Sue maintained multiple turn-taking sequences with mostly open questions and some cued elicitions, functioning as *topic initiations* and *topic invitations* – “So under what kind of circumstances do we widen our eyes?” (lines 22 – 23). The point when she reformulated her question, “So where is the clue?” to “Can you show us how you derive the answer?” (lines 9 - 10) serves as a *topic repair*. The students’ responses were short (a short sentence or phrase) – signaling potential *trouble sources* and attempts at *self-initiated and other-initiated repairs*. The multiple turn-taking sequences between the teacher and students produced an *exploratory talk* (Barnes, 2008) opportunity in eliciting further knowledge and understanding from the students. The teacher’s responses were generally repetitions and elaborations. Within

this thematic extract, Mrs Sue used the means of *Questioning* consistently throughout the extract, with the intention to *support students' cognitive activity* and give some form of *cognitive structuring* to get students to extend and elaborate their responses.

Mrs Sue used *deictic gestures* to point to written responses on the whiteboard to which she was referring to. She also added numerous *beat gestures* co-occurring with her speech. When referring to a student's response, she used an *iconic gesture* to refer to the 'the statement' a student identified from the passage (arms spread out high in the air as if her hands were the parenthesis of the 'floating' sentence). In sum, the use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)* served the purpose of *supporting the means of questioning* as she gave the students some form of *cognitive structuring* in elaborating on their responses. While the *performative gesture (beat)* served the purpose of emphasizing her speech when she responded to a student's opinion – “Ok” (hand on her chin).

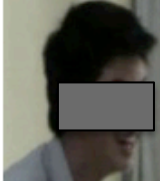
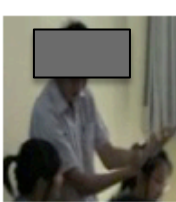
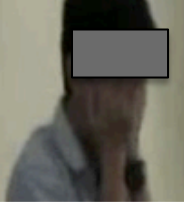
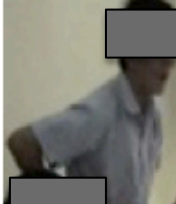


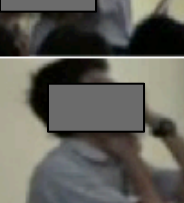
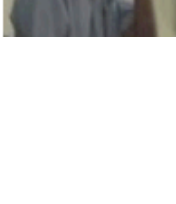
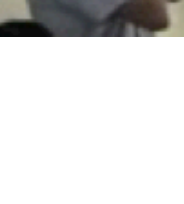
The use of gestures accompanying this pedagogic discourse did not seem to add value to the facilitation of students' meaning making and understanding of inferences from the reading text. Once again gestures evident in this extract was used without a link or connection to the means and intentions of scaffolding strategies adopted by the teacher. Perhaps a more effective use of gestures to accompany the verbal turn-taking sequences could lead to a more meaningful pedagogic discourse; one with a *transfer of responsibility*. (See next thematic extract) By the end of the extract, the teacher had given the turn or nominated a student to demonstrate his understanding of the key phrase “head hung low”. There is evidence of *contingency* here, a tailored form of support, as well as *fading* and *increase in responsibility*.

#### **4.2.4 Student's Performance of Understanding and Gradual Release of Responsibility: Student's/Teacher's Use of Gesture as Complements to Scaffolding Strategies**

Following the extract earlier when the teacher nominated a student to demonstrate his understanding of the phrase “*eyes widened and head hung low*”, she encouraged a student to read out loud the relevant sentences from the reading passage while acting out what each sentence represents. Hence, student's responses in this extract were

mainly sentences read out from the passage; for the purpose of performing their understanding. Mrs Sue did maintain turn-taking sequences with open questions and some cued elicitations. The multiple sequences of ‘I’ and ‘R’ produced an exploratory talk (Barnes, 2008) opportunity in eliciting further knowledge and deeper understanding from students, particularly on the inferences they could make from the phrase “*eyes widened and head hung low*”. The teacher’s responses were repetitions and reformulations. There was also a ‘we statement’ at the end of the extract to reflect the ‘shared experiences’ between the teacher and students – “Very good, So, you see. *We* have understood what that paragraph means” (lines 64 – 66). Figure 6 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 6 Multimodal Analysis 3 of Singapore School Secondary-level

Visual Frame	Lines	Linguistic Transcription
	1	/T/ So widened his eyes and hung his head low.. Can you show us how he did it? <b>Open Q (Topic Invitation)</b> Duncan, can you stand?
	5	/S1/ Ah.. <b>Note: Gesture</b> [Widens his eyes while <b>smiling</b> ] <b>Trouble source</b>
	10	/T/ And then? <b>Closed Question (I) as Other-initiated Repair</b> /S1/ [ <b>Gesture: While having his eyes widened, he says...</b> ] <b>Oh.. Self Repair; Trouble source</b>
	15	/S1/ [class laughs] I don’t know how to do. [ <b>Gesture: covers his face with both his face – face-saving</b> ] <b>Student encounters Trouble/Difficulty</b>
	20	/T/ Ok, I will read that part, and you do it. Or you want to read it and do it? Or Jessica wants to read to him? Ok, Jessica will read to him. Very good. <b>Organisational Talk</b>
	25	/S2/ Eh, I read this part, then you say ‘oh.. oh..’ <b>Short (R)</b>
	30	/S1/ [class laughs] [ <b>Gesture: Hands placing forward with palms up</b> ] /T/ Start from the first part. <b>(F)eedback</b> /S2/ <i>After I told Zang that he had not impressed me.</i> /S1/ Ohh..
		/S1/ [ <b>Gesture: widens his eyes</b> ]
		/S1/S2/ [Ss discuss - inaudible] <b>(student-student support)</b>
		/S2/ <i>His eyes widened and he hung his head low..</i>

	35	/S2/ [Gesture: place both hands on throat] I don't know... I don't understand. (Student encounters Trouble/Difficulty) [Another student joins in their student-initiated discussion] /T/ I think I like the part on eyes widening, you know... (Feedback (Teacher withholds
	40	correction) but erm... He hung his head so now does it look like? Open Question (Other-initiated repair)
	45	Under what kind of circumstance do we do this? [Gesture: lowering her head] When do we make this movement? Closed Q (Other-initiated repair)
	50	/S/ When we are embarrassed. Self-repair /T/ When we are embarrassed. Repetition Very Good Sally. Evaluation What else? Open Q (Other-initiated repair)
	55	/S/ When we did something wrong Extends Self-repair /T/ When we did something wrong. Repetition Yes when we are guilty. (Feedback: Adding a semantic model) Very good, (Evaluation) So, you see. We have understood what that paragraph means. Shared experiences; 'we' statements

It is interesting how when left to 'perform' on his own, Duncan (pseudonym) had misunderstood the meanings of "eyes widened" by literally holding his eyelids 'downwards' with his fingers and "head hung low" and by 'choking' his neck in a literal sense of being 'hung' (lines 37 – 38). Perhaps the teacher's input to increase his level of responsibility was not effective, thus leading to an unsuccessful other-initiated self repair by the student. Prompted by the student's demonstrations of mis-meanings (use of gestures) through a repair sequence and verbal declarations of trouble/difficulty, "I don't know" (line 38), Mrs Sue further scaffolded his understanding and provided sufficient learning support using the means of *Questioning* and *Modeling* until he was able to demonstrate the right representation of "eyes widened and head hung low" as contextualized in the reading text. These teacher questions function as other-initiated repairs to facilitate the student's meaning making through his own extended self-initiated repairs (verbal and use of gestures). This was prompted by Mrs Sue's elaboration on an inference question where she asked the students to explain how they knew the character was embarrassed (lines 49 – 51). As some students were not able to understand why the phrase "eyes widened and head hung low" was a form of contextual clue to gain a deeper understanding of the character's emotions, she invited Duncan to demonstrate his understanding of the phrase.

The teacher's *modeling* (she lowered her head) after the student's completion of his 'performance' and her means of *Questioning* as other-initiated repairs were instrumental in clarifying the student's mis-meaning. It is also noteworthy to highlight that there were student-student initiated interactions. They had initiated their own discussion about performing the act without the teacher's instructions to do so. Such collaborative exchanges potentially could have also contributed towards the student's successful performance of understanding. In sum, towards the end of this thematic extract, there is evidence of a *gradual release of responsibility*, where there was a joint responsibility (teacher and student) and co-construction of meaning making to promote understanding. Therefore, there is evidence that the teacher provided *support of students' cognitive activity* and gave some form of *cognitive structuring* so as to assist the student to 'organize' his responses and performance – acting out the representations of the phrase “*eyes widened and head hung low*”. Furthermore, based on the student's responses and performance, there was evidence of *contingency, fading and transfer of responsibility* as she provided further scaffolding strategies; example adding a semantic model in her feedback, “When we did something wrong. Yes, when we are guilty” to highlight to the student the appropriate emotion or feeling when one has his eyes widened and head hung low.

With regard to the use of semiotic resources, Mrs Sue used *deictic gestures* to point to her students and particular sentences of the reading passage on their worksheet. Furthermore, there is evidence of both the teacher and the student's use of *iconic gestures* to reflect appropriate feelings, when referring to specific representations of the phrase ‘eyes widened eyes and head hung low’ (arms stretched out, eyes widening and mouth opened, lowering head). The use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)* effectively served the purpose of *supporting the means of questioning* as the teacher gave the students some form of *cognitive structuring* to accurately infer the appropriate inference and understanding of the phrase they were discussing. Here, the teacher's and students' use of speech and gesture supported the use of scaffolding principles. In this thematic extract, the use of speech and gesture changed such that the teacher was able to *release responsibility* to the students. While in the beginning the teacher might have needed to use gestures as a form of *learning support* but towards the end of the pedagogic discourse it provided the students an opportunity to

use gestures (with the teacher's facilitation and encouragement) to demonstrate their understanding. Gestures in this extract were used to complement the means and intentions of the scaffolding strategies adopted by the teacher, such that there was contingency, fading and transfer of responsibility. Hence, both speech and gestures were effective in supporting students' learning, facilitating meaning making and developing deeper student understanding.

The use of the communicative gestures in this thematic extract proved very successful in supporting students' learning as it served as evidence of the teacher's and more crucially the student's use of other semiotic resource as effective identification of *trouble sources*, *self-repairs* and teacher input. The teacher tailored her support with the use of questions as *other-initiated repairs*. The *scaffolding principle of transfer of responsibility* was successful in the facilitation of students' meaning making and development of understanding an inference from the reading text. Arguably, without the teacher's provision of opportunity for the student to use gestures to demonstrate his inferential understanding of the key phrase, she would not have been able to successfully identify the misconception or student's trouble/difficulty. There is also key evidence of the *release of teacher control and power* as the teacher withheld correcting the student or providing with the 'answer'. By allowing student autonomy (student-student initiated discussion/support; albeit inaudible in the recording), the teacher had *increased responsibility* and allowed for *a successful transfer of responsibility*. In addition, the teacher too used gesture to confirm (by then) the co-constructed meaning and inference of having one's head hung low when one is in embarrassment or feels guilty. She also ended the pedagogic discourse with a very *high quality feedback* of adding a *semantic model* to the concepts of embarrassment and guilt.

In sum, the findings showed that while speech played a central role in mediating learning, the use of other semiotic resources, like gestures not only favoured students' comprehensibility of the reading text but also gave support to their construction of meaning. The use of gestures, constituted a crucial tool (as repairs and identification of student trouble/difficulty) for the teacher's construction and development of scaffolding strategies. Additionally, students benefitted from the use of gestures in opportunities for self-repairs, which facilitated their understanding and



meaning making inferences. It is through a partnership between speech and gesture in a reading comprehension classroom that meaning and understanding are achieved.

### **4.3 British international school Secondary-level Reading Instruction**

This section offers a brief description of the reading instruction (Literature) unit of work for the Year 10 (15-year old students) Singapore-based British international school classroom. The thematic extracts that will be discussed later are selected from Lesson One and Three of the unit. Refer to Appendix 4.2 for the unit's lesson topics, lesson objectives and classroom activities.

By the end of Lesson 3, the class teacher, Ms Jane (a pseudonym), had gone through the 'reading passage', reading excerpts from Act 2 Scenes 1 to 3 of the literature text *Romeo and Juliet*, extensively in class, either in the form of teacher-directed lectures and discussions or in pair/group work student activities.

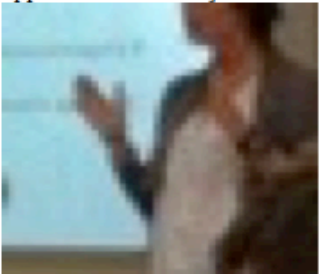

From the findings, it was observed that while speech played a central role in mediating learning, the use of gestures did not necessarily enhance students' comprehensibility of the reading text. It is used primarily by the teacher when emphasizing key inferences of their reading material discussed during lessons – in a way that gave the teacher support in her construction of meaning. The use of gestures did not constitute a crucial tool (as visual inputs and repairs) for the teacher's construction and development of scaffolding strategies. On the other hand, students did not use gestures in opportunities for self-repairs, to facilitate their understanding and meaning making inferences. Perhaps the use of gestures was not facilitated or encouraged by the teacher – in comparison to the secondary-level reading instruction of the Singapore data. A partnership between speech and gesture was evident in the teacher's 'mono-construction' of understanding in the British international school secondary-level reading instruction studied.



#### **4.3.1 Eliciting Students' Responses for Questions on the Topic of Duality**

During this whole class interaction, Ms Jane was eliciting student responses for the specific questions she asked earlier. These questions were aimed at getting students to provide responses based on their reading of the literature text so far – up to Act 1

Scene 3. She had projected the three questions onto the screen and given the students time to prepare their responses. This thematic sampling features the teacher-students interaction in a typical IRE/F structure. She generally controlled when a ‘turn’ was given to a student (Gesture 3; line 27, but this might be prompted by students’ initiation to provide a respond – indicated by their raised hand. She maintained the IRE/F sequences with closed questions and immediate evaluations. Figure 7 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 7 Multimodal Analysis 1 of British international school Secondary-level

Visual Frame	Lines	Linguistic Transcription
[GESTURE 1: left hand moves left, then right hand moves right – “contrasting characters... to oppose one another”]	1	/T/ Now, let’s talk about question no. 2. Contrasting characters. Characters that are set up to oppose
	5	[GESTURE 1] one another. To deliberately draw up contrasting elements of life and people. What kinds of pairs of characters have you seen doing that? [student’s name]? <b>Closed Q (Topic Initiation)</b>
	10	/S/ Tibalt and Mercutio. <b>Short (R)</b> /T/ Ok. Tibalt and Mercutio. <b>(Repetition)</b> That’s a very interesting pair. <b>(Feedback)</b> Why? <b>Open-turned-Closed Q (I)</b>
	15	/S/ Because Mercutio sort of like if you’re at a party Mercutio will still be the fun-loving one as opposed to Tibalt who seems rather serious. He’s more concern about the separation between the Montegues and the Capulets. As opposed to Mercutio mocking Romeo. <b>Extended (R)</b>
[GESTURE 2: [student’s name]?	20	/T/ Very nice. <b>(Evaluation)</b> Actually that’s such a good answer. Can I come back to it later? Coz we’ll weave into it in question 3. It will lead into the answer there. Let’s do some obvious ones and we’ll come back to that in a minute. [student’s name]? <b>Closed Q</b>
	25	/S/ In a way, Romeo and Mercutio. <b>Short (R)</b> /T/ Romeo and Mercutio. <b>(Repetition)</b> Why? <b>Open-turned-Closed Q (I)</b> /S/ Because Mercutio doesn’t believe in love and ... but Romeo does. <b>Short (R)</b> /T/ Yes. <b>(Feedback)</b> Romeo is the great sort of tragic hero <b>(Feedback)</b> [GESTURE 3]. I love Rosalind... And then

<p>[GESTURE 3: Hand on side of head, leans back as if mimicking a 'fallen' hero – "tragic hero"]</p>  <p>[GESTURE 4a, 4b: hands to the left – "lose that comedy", then hands to the right – "tragedy phase"; emphasizing the element of contrast]</p> 	<p>30 Mercutio comes and undermines all his great love speeches by making dirty jokes. (Feedback) Yeap. <i>Prick love for pricking</i> and he beat love down. So we got a contrast between a great lover and a man who doesn't take anything seriously. (Feedback)</p> <p>35 /T/ Coming back to your point then [student's name]. Tibalt and Mercutio. Tibalt represents honour, the family's feud. And Mercutio represents all the laughing around the jokes. They actually represent two different styles of play that Shakespeare wrote. [student's name] why don't you talk to us about that? Open Q (I)</p> <p>40 /S/ Ok. So, Shakespeare wrote comedies. Short (R) /T/ He did. His early works were comedies. (Reformulation) Can anyone name a Shakespearean comedy that you may have read? [student's name]? [GESTURE 2] Closed Q</p> <p>45 /S/ A midsummer night's dream. Short (R) /T/ What a silly play (Feedback) – A Midsummer night's dream. (Repetition) Yes. Any others? Closed Q /S/ Taming of the Shrew Short (R) /T/ Taming of the Shrew. (Repetition) Very good.</p> <p>50 (Evaluation) Classic. Taming of the Shrew. A midsummer's night dream. There is a lot that you may have come across. So, his early works were all comedies. And then he wrote Romeo and Juliet. Which is? Closed Q</p> <p>55 /S/ A tragedy Short (R) /T/ Because? Closed Q /S/ Because they all die. Short (R) /T/ Yes... So, at this moment it's very very comical and we're going to see that shift in Act 3 as things start to fall apart. The comedy phase from the play with Mercutio. He is symbolic of that. With his death, we lose that</p>
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At the beginning of this thematic extract, she used a closed question as a form of *topic initiation* – especially when she closed the previous topic (lines 1 – 5). She maintained the typical IRE/F structure during the whole class discussion. Since most of her Initiations (I) were closed questions, the responses provided by the students were *short* and vague – “Because they all die” (line 52). This seemingly incomplete response had not signaled to the teacher that she was not encouraging extended responses from her students. The repetitions of the students’ responses and their brief positive evaluations would not allow the teacher to identify any potential trouble source. Consequently, there is no opportunity for repairs. Therefore, there is no evidence of any contingency, fading or transfer of responsibility in the extract.

Interestingly, when a student provided a response she might not have expected or had in mind, she provided a further Initiation (I) in the form of an Opened Question – “Why?” (line 8). This gave the student an opportunity to explain her earlier *short* response and provided an *extended* one. However, Ms Jane evaluated the response as if it was a right one – “Very nice!” (line 14). In addition, there is another instance when she asked an Open Question – “Why don’t you talk to us about that?” (line 35). Instead of extending that topic or providing a *topic repair* to reformulate her question to probe the student further, Ms Jane continued with a series of *closed questions* – “Can anyone name a Shakespearean comedy that you may have read?”



(line 39). Thus, it is evident that she had closed the topic and reduced student responsibility – no *fading*. Here, Ms Jane used the means of *Feeding back* and *Questioning*, with the intention to *support students' cognitive activity* and give some form of *cognitive structuring* so as to assist the students to explain their response. However there was no evidence of *contingency* and *reduction of degree of freedom* as she had not reformulated her question to encourage student participation in a dialogic, extended interaction.

While text as a mode remained essential within this extract as both teacher and students continued to refer to the reading passage, on which their discussion was based on, Ms Jane used an *iconic gesture* to represent the meaning of “*tragic hero*” (Gesture 3; line 25). As she said out the words, she simultaneously placed her right hand to the side of her head, leaned back and tilted her head back as if she was about to faint - acting out the representation to the term “*tragic hero*”. The use of the *communicative gesture*, which was *language correspondent (iconic)*, served the purpose of emphasizing the critical meaning of the term towards the understanding of the inference Ms Jane was attempting to highlight to the students. However, unlike in previous examples in the other set of Singapore data, the use of this communicative gesture did not prove to have supported students' learning. This is because it did not serve as evidence for the teacher's use of other semiotic resource as an effective input for any contingency. (There is no contingency in this extract. For example, in the secondary-level Singapore classroom, the teacher used a gesture as an input for contingency when a student's response is identified as a potential trouble source. See section 4.1.3.) Therefore, the gesture was not used to tailor her support since she merely provided a form of feedback that Romeo is a “*tragic hero*” when she gestured. However, the use of gesture did complement the means of feeding back intended for some cognitive structuring of students' responses.

#### **4.3.2 Eliciting Students' Responses for Questions on the Topic of Duality (Part 2)**

In this final extract, Ms Jane wraps up the lesson where she elicited students' responses for the three questions she posed. Figure 8 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 8 Multimodal Analysis 2 of British international school Secondary-level

Visual Frame	Lines	Linguistic Transcription
[GESTURE 1: left hand and right hand positioned on each side, in front of her – “birth and death, tomb and womb”] 	1	/T/ Yes. [student's name]? <b>Closed Q</b> /S/ <i>With baleful weeds and precious-juiced flowers.</i> <b>Short R</b>
	5	/T/ <i>Baleful weeds on the one side. Precious-juiced flowers.</i> <b>Repetition</b> [student's name]? <b>Closed Q</b> /S/ <i>Nature's mother, is her tomb, grave that is her womb.</i> <b>Short R</b>
[GESTURE 2: hands and fingers cupped, shaped like a spherical object – “womb”] 	10	/T/ Very good. <b>(Evaluation)</b> So birth and death, tomb and womb, both found in nature [GESTURE 1]. <b>(Feedback)</b> Very good. <b>(Evaluation)</b> What is he actually talking about when he says nature's tomb and nature's womb [GESTURE 2]? <b>Closed Q: Topic Repair</b>
	15	/T/ It's a metaphor? <b>(Reformulation)</b> Yes? <b>Closed Q</b> /S/ A beginning and an ending. <b>Short R: Other-initiated Other Repair</b>
	20	/T/ Which, for plants and humans and so on... <b>(Reformulation)</b> what's he's actually talking about? <b>Closed Q</b> He's a gardener, he's growing plants. <b>(Reformulation)</b> Where do the plants come from? <b>Closed Q</b>
	25	/S/ The ground. <b>Short R</b> /T/ Literally, the earth. <b>(Reformulation)</b> And then they die, they go back to the ground. The womb and the tomb is the earth itself. It's the same thing. OK, very good. <b>(Evaluation)</b> /T/ Well done. <b>(Evaluation)</b> There are more but what I want you to do now...

While she continued to use *closed questions* to *evaluate* students' responses – “Yes” and “Very good” (e.g. line 8), there were a few reformulations which she had used that function as *topic-initiations* to answers, which she might already have in her head (e.g. lines 13, 15). Hence, she was still expecting the ‘right’ responses from the students. It is interesting to note that when she used *repetition* (repeated student's response) as a closed question to initiate a new topic, “What is he actually talking about when he says nature's tomb and nature's womb?”, students did not seem to be able to provide the answer she wanted. After which, she reformulated the question into, “It's a metaphor?” (lines 10 – 11) - providing a potential *topic repair*. However, at this point the response she received from a student was not the ‘answer’ she had in mind. So, she reformulated her question into, “He's a gardener, he's growing plants” (line 17). Not understanding the relevance of this new reformulation, she led the students to the ‘right’ answer by asking a final *closed 1-word question* – “Where do plants come from?” (line 18) before she reformulated a student's *short response* - “the ground” (line 20) with an explanation, which she had in mind earlier and expected to receive from the students.

The turn-taking sequences between teacher and students in this thematic extract, with the predominant closed questions, provided little opportunity for a fairly cumulative talk. Besides, Ms Jane provided ‘responses’ and ‘evaluations’ to her own

questions or ‘initiations’; as if ultimately answering the question on her own. There was little opportunity here to open the discussion further and provide opportunities for students to extend their responses beyond the short phrase or word. Her responses were mostly repetitions and reformulations. There is some evidence that Ms Jane used the means of *Questioning*. However, they did not serve to *support students’ metacognitive activity* but rather gave some form of *direction maintenance* so as to keep the students on target of the pursuit of the objective – getting the response right or the response, which she had in mind. Over the extract, the change in questioning (identified earlier with a *topic repair*) created minimal fading and not entirely a *release of responsibility* for the students. More importantly, topic analysis of this thematic extract provided key evidence that the pedagogic discourse was not dialogic and that topic was not co-constructed by teacher and students. This is evident with the *closing of topic* when she said, “Well done. There are more...” (line 25) before moving on to the next group activity.

Text as mode was continuously used on the screen and in the reading passage students were referring to. Ms Jane used *deictic gestures* (e.g. line 1) to point to students’ passages and identify students she was giving a turn to. She also used the *iconic gesture* as she held her hands up and cupped her fingers into a spherical-shaped object – representing the word, “womb” (Gesture 2; line 12). She also added numerous *beat gestures* co-occurring with her speech (Gesture 1; line 9). In sum, the use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)*, served the purpose of *supporting the means of questioning* as she gave the students some form of *direction maintenance* in getting the responses right - exactly what she had in mind. In addition, the *performative gesture (beat)* served the purpose of emphasizing her speech when she evaluated or repeated a student’s response (hands placed in front of her).

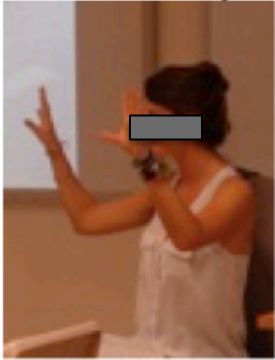

Here, the use of both communicative and performative gestures seemed not entirely effective in particularly supporting students’ learning, nor were they effectively utilized to encourage deeper understanding. This could have been achieved if she had used more *Open questions*, complemented with either the teacher’s or students’ use of gestures over opportunities of contingency, fading and release of responsibility. There is no evidence of identified trouble source and/or inputs provided to scaffold students’ understanding of their reading. Therefore, while

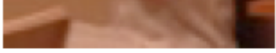
the gestures provided the necessary emphasis and direction when the teacher elicited students' responses, they did not facilitate meaning making and develop deep student understanding. By the end of the extract, students were only able to provide the 'right' answer as expected by the teacher, without relying on the teacher's use of gestures to support learning.

#### 4.3.3 Eliciting Students' Responses on Character Analysis of Friar Laurence

In this extract, Ms Jane switched to a different learning objective where she focused on a character analysis of Friar Laurence. Figure 9 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 9 Multimodal Analysis 3 of British international school Secondary-level

Visual Frame	Lines	Linguistic Transcription
<p>[GESTURE 1: left hand and right hand raised and positioned on each side, in front of her – “death”]</p> 	1	/T/ So. I want to talk about the character of Friar Laurence. (Topic Initiation) He is one of the few characters in the play who is neutral. He is distinct and separate from the family feud between Capulet and Montague. Who are the other
	5	neutral characters which you have encountered? Closed Q (I) /S/ Mercutio Short R /T/ Oooooo [expression] (Expression) Best friends with Romeo. (Feedback) /S/ Who doesn't really... Short R
<p>[GESTURE 2: left hand and right hand raised and put together – palm to palm, in front of her – “together”]</p> 	10	/T/ ... He's NOT a Montague or a Capulet, correct. (Reformulate) But he's not neutral. He has alliances with the Montagues. (Feedback)
	15	/T/ My question is, how is he trying to solve the problem of the feud? Closed Q (I) Who come across again as a third.. he makes a threat.. (Reformulation) how does he try to stop the feud? Closed Q (I) [student's name]? /S/ He says that if there's another outbreak, they'll pay with their lives. Medium R
	20	/T/ They'll pay with their lives. (Repetition: Potential Trouble Source) Absolutely. (Evaluation) He threatens them with violence. (Reformulation) Violence, more violence. That's how he tries to solve the feud. He says <i>your lives shall pay the forfeit of the peace</i> . So, Montague or Capulet themselves will die the next time there's a brawl by their own men. (Feedback)
	25	Ya. We can see that Friar Laurence is taking a very different tack. What is Friar Laurence trying to do to resolve the feud between Montague and Capulet? (Other-initiated Repair) Closed Q (I) He has a plan. It's not like Prince Escalus' plan, it's very different. [student's name]?
	30	/S/ Friar Laurence thinks that with the marriage he could eventually bring the families together... Medium R

	<p>35 /T/ Spot on. (Evaluation) Can you provide a quote for me, please? Closed Q (I)</p> <p>/S/ For this alliance may so happy prove. To turn your households' rancor to pure love.</p> <p>/T/ Yes. (Evaluation) For this alliance may so happy prove. To turn your households' rancor to pure love. (Repetition) So, instead of threatening with death [GESTURE 1], he is going to bring the two children together [GESTURE 2], and marry them. Hoping that this is going to resolve the conflict. (Reformulation)</p>
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She started a Topic Initiation when said “*I want to talk about the character Friar Laurence*” (line 1). She wanted the class to discuss about Friar Laurence’s involvement in making the union of Romeo and Juliet possible. Before she reached the crux of the discussion, she asked a few *closed questions*, to test students’ knowledge on other similarly neutral characters like Friar Laurence. When a student offered a potentially ‘incorrect’ response (line 6), she reacted with an expression of doubt as she let out a sound ‘*Ooooooo*’ (line 7), which was an iconic representation of a disagreement in view or simply an opinion towards a rejected idea. She responded further with a *feedback*, “*Best friends with Romeo*” (line 8). However, when the same student wanted to offer his potentially *self-initiated repair* “*Who doesn’t really...*” (line 9), Ms Jane interrupted the student and continued to provide her form of feedback, thereafter providing the ‘correct’ response she had expected from the student, “*He’s NOT a Montague or a Capulet, correct. (Reformulate) But he’s not neutral. He has alliances with the Montagues*” (lines 10 – 11). This prevented the student from either reformulating or repairing his earlier response. The potential *trouble source* here, which Ms Jane had identified earlier, had failed to be turned into an opportunity of *contingency* and *fading*. She could have asked open questions as a technique to scaffold her student understanding on why the character *Mercutio* was not considered a neutral character.

Later, she focused on Friar Laurence’s actions and involvement in making Romeo and Juliet’s union possible. Here, she asked a series of closed questions like “*My question is, how is he trying to solve the problem of the feud? How does he try to stop the feud?*” (lines 13 – 15). The medium-length response provided by a student (lines 17 – 18) shows that the closed question utilised as *topic invitations* did not encourage a richer teacher-students interaction. Thus, there was no evidence of further opportunities for *cumulative* and *exploratory talk*. Ms Jane seemed to have a



set response in mind, in which she expected students to provide a response to accurately and correctly answer the question she posed. Whenever students responded, she would provide mostly repetitions or reformulations of the responses, before providing her typical evaluation or feedback – “*They’ll pay with their lives.* (Repetition) *Absolutely.* (Evaluation) *He threatens them with violence.* (Reformulation)” (lines 19 – 20). She did later use her feedback as a way to reformulate her earlier question, “*So, Montague or Capulet themselves will die the next time there’s a brawl by their own men.* (Feedback) *Ya. We can see that Friar Laurence is taking a very different tack. What is Friar Laurence trying to do to resolve the feud between Montague and Capulet?*” (lines 24 – 26). This reformulation served as an *other-initiated repair* as she tried to guide her students towards a more accurate response. In the earlier student’s response, she might have identified it as a potential *trouble source* (line 19) but might not necessarily hint that to the students. Instead she continued to use feedback and reformulations to pose another closed question to elicit a ‘better’ response. Only after a student provided with the response she had in mind, did she provide a positive evaluation indicating that it was the correct answer – “*Spot on*” (line 31).

Within this thematic extract, Ms Jane used the means of *Feeding back*, *Questioning and Hinting*, with the intention to *support students’ cognitive activity* and give some form of *cognitive structuring* so as to assist the students to organise their responses, with some opportunity to extend their responses and demonstrate deeper understanding. This was illustrated with the extended IRE/F structure evident in the extract producing some exploratory talk (lines 13 – 39). Furthermore, based on feedback and reformulation of an earlier question, she managed to capitalize on the opportunity to provide some *contingency* and *fading* as she attempts to elicit a more accurate response than an earlier one – the potential trouble source. She provided some level of scaffolding the students needed to seek further elaborations on their responses. However, it is also interesting to note that whenever Ms Jane appointed a turn to herself, typically after a student provided a response, she would include much lengthier reformulations and feedback, as compared to the short-medium responses provided by the students. This seemingly lop-sided contribution to the teacher-students interaction restricted the opportunity to scaffold students’ learning and promote deeper understanding of their reading.

With regard to the use of semiotic resources, text as mode was continuously used in the reading passage students were referring to. In addition, Ms Jane used *deictic gestures* to point to students she was providing a turn to offer responses. She also added numerous *beat gestures* co-occurring with her speech. In sum, the use of *communicative gestures, which were language dependent (deictic)* served the purpose of *supporting the means of feeding back, questioning and hinting* as she gave the students some form of *cognitive structuring* in organising their responses. While the *performative gesture (beat)* (Gesture 1; line 37) served the purpose of emphasizing her speech when she provided feedback to students' responses, "So, *instead of threatening with death*" - left hand and right hand raised and positioned on each side, in front of her, she also used the *iconic gesture* (Gesture 2; line 38) as she raised her left and right hands, put them together palm to palm, in front of her – representing the word, "together". Here, the use of the *communicative gesture, which was language correspondent (iconic)*, served the purpose of emphasizing the critical meaning of the term she was attempting to highlight to the students. However, the use of this communicative gesture did not prove to have supported students' learning any further. This is because it did not serve as evidence for the teacher's use of other semiotic resource as an effective other-initiated repair or input for any contingency. Therefore, the use of gesture was not used to tailor her support since she merely provided a form of feedback that Friar Laurence brought Romeo and Juliet "together" in marriage.

The use of gestures accompanying this pedagogic discourse did not particularly seem to add value to the facilitation of students' meaning making and understanding of inferences. They had not served as tools for the teacher's use of other semiotic resource as effective identification of *trouble sources, self-repairs* and teacher input. In the single instance when the teacher tailored her support with the use of reformulations and questions as *other-initiated repair*, she only used speech but not gesture. Also, since the use of gesture was not passed on to the students, there was no evidence of the use of gestures on the part of the students where the *scaffolding principle of transfer of responsibility* was evident. Thus, the use of gesture did not facilitate students' own meaning making experiences and development of understanding. However, there is some evidence of a *release of teacher control and power* as the teacher withheld correcting the student and did not provide the student

with the ‘answer’ she had in mind.

In sum, the findings showed that while speech played a central role in mediating learning, the use of gestures did not necessarily enhance students’ comprehensibility of the reading text. It is used primarily by the teacher when emphasizing key inferences of their reading material discussed during lessons – in a way that gave the teacher support in her construction of meaning. The use of gestures did not constitute a crucial tool (as visual inputs and repairs) for the teacher’s construction and development of scaffolding strategies. On the other hand, students did not use gestures in opportunities for self-repairs, to deepen their understanding of inferences and facilitate their meaning making experiences. Perhaps the use of gestures was not facilitated or encouraged by the teacher – in comparison to the secondary-level reading instruction of the Singapore data. Although there was a partnership between speech and gesture in the teacher’s ‘mono-construction’ of understanding in this British international school secondary-level reading instruction, a more effective use of gestures accompanying the verbal turn-taking sequences could lead to a more meaningful pedagogic discourse; one with a clear evidence of the scaffolding principles of *contingency*, *fading* and *transfer of responsibility*.

#### **4.4 Singapore School Primary-level Reading Instruction – Lesson Frame Summary**

This section offers a brief description of the reading instruction unit of work for the Primary Five (11-year old students) Singapore classroom. The thematic extracts that will be discussed later are selected from Lessons One and Five of the unit. Refer to Appendix 4.3 for the unit’s lesson topics, skills/concepts taught and learning objectives.

There is a fairly varied pattern of classroom organization over the course of Ms Anna’s (a pseudonym) Unit of work on Fractured Fairy Tale. She switches mostly between Teacher-dominated Talk, IRE, students’ Prepared Performances of Understanding and Whole Class Activity throughout the five lessons. In addition, she had also managed to cover all of the lesson topics and skills she intended to teach in the unit of work.

From the findings, it was observed that while speech played a central role in mediating learning, the use of gestures not only favoured students' comprehensibility of the reading text but also gave support to their construction of meaning. The use of gestures, constituted a crucial tool (as visual inputs and repairs) for the teacher's construction and development of scaffolding strategies. Additionally, students profited from the use of gestures in opportunities for self-repairs, which facilitated their understanding and meaning making inferences. It is through a partnership between speech and gesture that meaning and understanding are achieved in the pedagogic discourse of this Singapore primary classroom thematic extracts.

#### **4.4.2 Introduction to topic on 'fractured fairy tales': A game of charades**

Over the course of the unit (all five lessons were video-recorded), it was evident that Ms Anna had carefully planned out lessons such that she was able to introduce the text type fractured fairy tale to the students effectively. She also managed to keep the students very engaged and excited about the lessons. More importantly, she allowed a greater amount of student autonomy over the students to select and plan their own fractured fairy tales. There were quite a number of opportunities for knowledge building when she allowed for extended student discussions. As a trigger activity in this thematic extract, Ms Anna organised a Whole Class game of Charades. She would pass a turn to a student who had volunteered to *act out* the title of fairy tales that had been written on pieces of paper. Students who were acting used gestures and sounds (mostly onomatopoeia) to help the rest of the students guess. This served as a tuning-in activity for students to recall various fairy tales they might have read before. More importantly, this seemingly quick and easy activity enabled Ms Anna to check for students' prior relevant knowledge on the text type 'fairy tales', which the Unit of work was based on. Figure 10.1-10.2 below show the multimodal analysis of the thematic extract discussed in this section.

Figure 10.1 Multimodal Analysis 1 of Singapore Primary-level



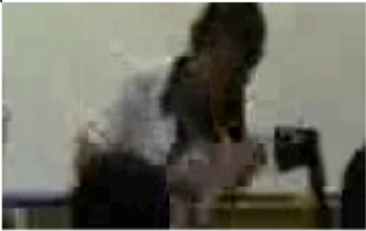

Visual Frame	Lines	Linguistic Transcription
[GESTURE 1: eyes closed, arms failing, body leaning to the side - iconic gesture (with 'fainting' sounds) for the action of "falling a sleep"] 	1	/T/ We are going to play a game, and this is charades. (Organisational Talk) /Ss/Yay! Yes! /T/ So I'll need a volunteer to come and act something out. Okay, let's have... [student's name]. Okay, act this. You have to make them guess this. (Topic Initiation) Ready, go. (Organisational Talk)
[GESTURE 2: fingers pushing nostrils - iconic gesture (with onomatopoeia sounds) for an "oinking pig"] 	5	/S/ [GESTURE 1] /S/ action? (Short R) /S/ Basketball? (Short R: Trouble Source) /T/ Nope. (Evaluation) It's a title of a book. (Topic Repair) /S/ Sleeping Beauty? (Short R)
[GESTURE 3: stroking long hair to the front - iconic gesture for the character "Rapunzel"]	10	/T/ Excellent! (Evaluation) Sleeping Beauty you got it. (Repetition) /T/ [student's name]. Title of a book. (Topic Initiation) /S/ [GESTURE 2]
	15	/S/ Three Little Pigs! (Short R) /T/ Three Little Pigs, (Repetition) good. (Evaluation) Thank you, next. Er. It'll be easier if a <i>girl</i> - okay okay Lianna come. This one is easier if it's a <i>girl</i> (Topic Repair), okay.
	20	/Ss/ Ohh I think I know! (taken as a form of
	25	

Figure 10.2 Multimodal Analysis 1 of Singapore Primary-level

[GESTURE 4a,4b: arms in the air, spins body - iconic gesture for "twirling"] 		learning support - hint /S/ [GESTURE 3] /S/ Rapunzel! (Short R) /T/ Yes, (Evaluation) next. [student's name]. Kay go.
[GESTURE 5: hand in circular movements on top of a another hand - iconic gesture for "setting up fire"] 	30	/S/ [GESTURE 4a] /S/ Er Alice in Wonderland? (Short R) /S? The Three Witches? (Short R) /S/ Cinderella. (Short R)
	35	/T/ Cinderella. (Repetition) He did the transformation thing [GESTURE 4b], so he spun around. (Reformulation) /S/ You should put fire [GESTURE 5], which is cinder and= /T/ =Okay next. Okay [student's name].
		T - 9 turns

Ms Anna used the game of Charades as a form of *topic initiation* for a text type genre 'Fairy Tales'. At the beginning, she had not revealed any clue or hint about a possible

category for the game. When students replied with *short responses* “*action*” and “*basketball*” (lines 9 - 10), she knew that these were incorrect responses - as a result of not knowing a helpful category for the words they had to guess. Taking these responses as a potential *trouble source*, she responded with a hint “*It’s a title of a book*” (line 11). This input also functions as a *topic repair*, evident by the ability of students to start guessing the words more accurately for the rest of the extract. Later, without any identified *trouble source*, Ms Anna revealed an ‘accidental’ hint or *topic repair* - “*Er. It’ll be easier if a girl- okay okay [student’s name] come (here). This one is easier if it’s a girl*” (lines 21 – 23). Students were sharp to recognize that this information would mean that the answer had to be associated with a female fairy tale character – “*Ohh I think I know!*” (line 24). For the rest of the extract, Ms Anna maintained a typical structure of IRE/F throughout the teacher-student interaction. She responded mostly with *evaluations* and *repetitions*. Just once, she responded with a *reformulation* of a student’s use of gesture when acting out the title of the fairy tale ‘Cinderella’ – “*He did the transformation thing, so he spun around*” (lines 34 – 36). Interestingly, another student offered an alternative use of gesture to represent ‘Cinderella’. He moved his hand in a circular motion over another hand as he explained its representation – “*You should put fire, which is cinder and=*” (lines 37 – 38). However, Ms Anna ignored his response, which was functioning as an *other-initiated repair* to the meaning-making experience shared by the class earlier. She interrupted his response and moved on to the next act.

Within this thematic extract, Ms Anna used the means of *instructing and modeling*, through the activity Charades, with the intention to *support students’ cognitive activity* and give some form of *direction maintenance* so as to keep the students on target of the pursuit of the objective – guessing titles of fairy tales. There was some evidence of *contingency*, in the form of responsive and tailored support (Van de Pol, Volman, & Beishuizen, 2010), when a hint and a reformulation of student’s use of gesture were used as learning support.

With regard to the use of other semiotic resources, the teacher and students used gestures to perform their representations of fairy tales. Some text may be present as a mode when it was used on the prompt cards for the game Charades. Ms Anna used *deictic gestures* when passing a turn to a student to come up to the front of the

class. She used an *iconic gesture* to represent the action of “twirling” by putting her arms in the air and spinning her body, imitating the character Cinderella as she transforms into a princess (Gesture 4b; Line 35 - 36). It is interesting to note that with the facilitation of the game Charades, she had encouraged the students to use gestures in representing their understanding of what is iconic in a fairy tale. The first student used an *iconic gesture* to represent the action of “falling a sleep” when he had his eyes closed, arms stretched out and body leaned to the side. He also added a sound during his act mimicking sounds a person would make before fainting or falling asleep. It was successful for students to connect this use of gesture with the fairy tale ‘Sleeping Beauty’. In two other acts, students used *iconic gestures* to represent the character ‘Rapunzel’ by stroking her long hair and the characters ‘Three Little Pigs’ by pushing his nostrils with his fingers and imitating a sound (onomatopoeia) of an oinking pig.

In sum, the use of *communicative gestures*, which were *language correspondent (iconic)*, served the purpose of *supporting the means of instructing and modeling* as both the teacher and students gave the rest of the students some form of *direction maintenance* in recalling titles of fairy tales. Hence, speech and the use of gestures were used effectively to facilitate students’ meaning making and develop student understanding.

#### **4.4.3 Fractured fairy tales: Features of a narrative play**

This thematic extract shows how Ms Anna encourages her students to give their predictions about what the reading passage will be about by providing only pictures (Pictures\*, line 4) of the title, setting and characters of the fractured fairy tale ‘A seriously twisted tale’. She maintained a highly engaging IRE/F interaction with the students in this pedagogic discourse. With good questioning technique to elicit extended responses from the students, she was able to get them to tap into their underlying cognitive schema, specifically on their prior relevant knowledge and understanding about how various fairy tale plots and characters are utilized to make up a fractured story. Figures 11.1-11.3 below show the multimodal analysis of the thematic extract discussed in this section.

Figure 11.1 Multimodal Analysis 2 of Singapore Primary-level


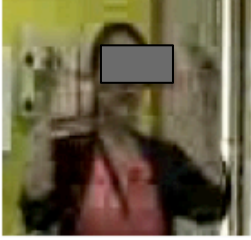


Visual Frame	Lines	Linguistic Transcription
[ <b>Pictures*</b> : Distributed as clues for group discussions] 	1	/T/ Alright, so, you would have seen the title of the story that we're going to read today but I'm not going to tell you what the story is yet. You would have your own discussions or predictions about what the story's about. Following that I gave you [ <b>Pictures*</b> ; <b>Gesture 1</b> ], to show you, characters in the story. Can I have some of your predictions please, what you think this story is about? ( <b>Open Q: Topic Initiation</b> )
[ <b>GESTURE 1</b> : Fingers drawing an outline of a square shape object – representing pictures] 	5	/S/ Animal farm? ( <b>Short R</b> ) /T/ Oh you think the story's about Animal Farm? Oh, you mean it's called Animal Farm? ( <b>Closed Q: Clarification, Other-initiated repair</b> )
	10	/S/ I think the story is something like Animal Farm, whereby the pigs rule the country. ( <b>Medium R: Self repair</b> )
	15	/T/ Ah, instead of the king of the jungle being the lions or the whatever, it's the pigs? ( <b>Reformulation as confirmation, Other-initiated repair</b> )
	20	/S/ And then the pigs are, instead of the usual story where the dragons chase after the tiny animals and then the pigs are doing= ( <b>Medium R: Self repair</b> )

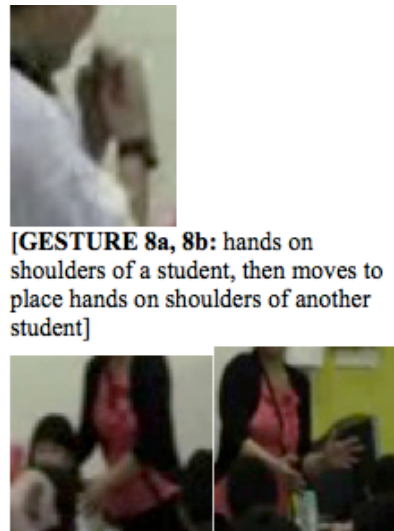
Figure 11.2 Multimodal Analysis 2 of Singapore Primary-level


[ <b>GESTURE 3</b> : points a finger outwards to represent “blowing out fire”] 	25	/T/ =Oh the pigs are wrecking havoc, in the animal kingdom. ( <b>Reformulation</b> ) Okay, thank you. ( <b>Feedback</b> ) [student's name], do you want to continue? ( <b>Open Q: Seeking other viewpoints</b> )
[ <b>GESTURE 4</b> : hand movement stressing “other stories”] 	30	/S/ It is a fractured fairytale and then= ( <b>Short R</b> ) /T/ You think it's a fractured fairytale? Uhuh. ( <b>Repetition as confirmation, Other-initiated Repair</b> )
[ <b>GESTURE 5a,5b, 5c</b> : fingers/hands showing the surface of a spherical object to represent “orb”]	35	/S/ Then the the pig ate the dragon so it's blowing out fire. ( <b>Medium R, Self Repair</b> ) /T/ The pig ate the dragon so it's blowing out fire [ <b>Gesture 3</b> ], ( <b>Repetition</b> ) so you don't get like, roasted pig you get like roasted dragon or something. ( <b>Feedback</b> ) Yes, [student's name].
	40	/S/ Er I think that, the, the pig can breathe fire because there's a picture of flames coming put of his mouth, just like the dragon. Yeah so it's about them, it's about them doing the, because all these characters are from stories [ <b>Gesture 4</b> ]. ( <b>Long R, Other-initiated other repair</b> )
	45	/T/ All these characters are from other stories? ( <b>Repetition as confirmation</b> ) What do you mean? What do you mean by all these characters are from stories? ( <b>Open Q: Seeking clarification, Other-initiated repair</b> )
	50	/S/ So maybe the characters from the other stories



 <p>[GESTURE 6 &amp; 7: hand movement from the mouth outwards, fingers spread out to represent "blowing fire"]</p>	<p>will, represent the characters of this story. (Medium R, Self repair) /T/ I see, okay, thank you. (Feedback) Yes. /S/ Okay, so there was, er, the dragon, owned a 55 legendary orb and then, and then the= (Medium R) /T/ =Legendary...? (Repetition as confirmation) /S/ Orb [Gesture 5a],. (Other-initiated Repair; Short R) 60 /T/ Orb [Gesture 5b],. (Repetition) /S/ And then= (Short R) /T/ =You know an orb [Gesture 5c],? (Closed Q: Topic Repair) 65 /S/ And then the orb would give him the power, of blowing fire. Rrrrghh! [Gesture 6],. But then but then the three little pigs, er set the trap for the dragon the dragon fell into it, and the pigs charged into the cave and then the dragon was dead, they got the orb and one of the- one of- But then they double-cross each other the one of the pigs= 70 (Long R) /T/ Double-cross each other (Repetition) wow... (Feedback) /S/ Yeah then then the one of the pigs, just, this, this this pig got, got the drag- dragon orb and then ate it, and then it could breathe [Gesture 7], fire. 75 (Medium R) /T/ Okay hold on. Do you know what the concept of double-crossing is? (Closed Q: Topic Repair)</p>
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Figure 11.3 Multimodal Analysis 2 of Singapore Primary-level

 <p>[GESTURE 8a, 8b: hands on shoulders of a student, then moves to place hands on shoulders of another student]</p> <p>[Gesture 9: hand holding an imaginary sword 'stabbing' the chest to represent "plunge"]</p>	<p>/Ss/ Yeah. (Short R) /T/ If I double-cross you means I'm working, for example I pretend to be working with you [Gesture 8a] but in the end I betray you and I go and help another person [Gesture 8b]. (Feedback: Other-initiated other repair) /S/ Okay and then after that, the, frog, was a monster and it tried to eat this er, Lilith, and then er...= (Medium R) /T/ =Tried to eat Lilith? (Repetition) Uhuh.(Feedback) /S/ Yeah, and then so Colin just took the sword and plunge [Gesture 9] it into the frog's er...= (Medium R) /T/ You have murder, you have mystery you have betrayal [Gesture 10]! (Feedback) /S/ And then and then er, then Sir Colin married Lilith but then= (Medium R) /T/ =Sir Colin married Lilith, (Repetition) you have ROMANCE! (Feedback) /S/ But then the, still remember the three little</p>
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 <p>[Gesture 10: fingers used to count representing “murder, mystery, betrayal”]</p>	<p>pigs, the pig who got the orb, er, blew fire onto his brothers and then they all went dead and then now he knew that Sir Colin was ruling the country with Lilith and so he went to kill Sir Colin and Lilith and then they were all dead and then this pig WAHAHAHAHA! (Long R) /T/ REVENGE! (Feedback) Thank you, very much.</p> <p>T – 18 turns</p>
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She started the thematic extract with an *open question* encouraging students to share their predictions as discussed in their groups – “*Can I have some of your predictions please, what you think this story is about?*” (lines 5 – 6). When a student provided a *short response* - “*Animal Farm*” (line 7), she responded with a *closed question* to seek clarification “*Oh you think the story’s about Animal Farm? Oh, you mean it’s called Animal Farm*” (lines 7 – 8). This clarification functioned as an *other-initiated repair* since the student provided a *self-repair* later when he explained, “*I think the story is something like Animal Farm, whereby the pigs rule the country*” (lines 10 - 11). Ms Anna did respond with some brief feedback, repetitions and reformulations, like “*The pig ate the dragon so it’s blowing out fire, so you don’t get like, roasted pig you get like roasted dragon or something*” (lines 25 – 27). Here, since there was no *trouble source* identified, students who were sharing their predictions would simply continue extending their responses or complete their turn. However, it is noteworthy to mention that when the topic about the role of the pigs in the fractured fairy tale was discussed, another student had offered his predictions – further elaborating on the earlier prediction shared by a previous student – “*Er I think that, the pig can breathe fire because there’s a picture of flames coming put of his mouth, just like the dragon. Yeah so it’s about them, it’s about them doing the, because all these characters are from stories*” (lines 28 – 31). This long response functioned as an *other-initiated other repair* since the previous student did not choose to *self-repair* his earlier prediction.

This prompted Ms Anna to seek further clarification on what the student meant – “*All these characters are from other stories? What do you mean?*” (lines 32 –

34). She repeated the student's response, invited the student to clarify, thus provided an *other-initiated repair*. Such clarifying questions are good strategies of scaffolding since it releases the responsibility to the student to self-repair, thereby increasing the student's *epistemic authority*. In another prediction within an extended response from a student, Ms Anna noticed his use of a sophisticated vocabulary 'orb'. After repeating the word to seek confirmation that the student truly meant to use the word 'orb', she interrupted his sharing and provided a *topic repair* instead – “*You know an orb?*” She posed the *closed question* to the rest of the class but failed to check on students' understanding of the word. So, it is unclear if the rest of the students really understood the meaning of the word 'orb'.

This same student continued to share his prediction of an elaborate story plot of the fractured fairy tale. Again, he was able to use a sophisticated vocabulary when he said, “*But then they double-cross each other*” (line 50). Ms Anna responded with a repetition and feedback, thus the student continued with his sharing. However, he was interrupted soon after when Ms Anna wanted to use this opportunity to check students' understanding of the use of the term 'double-cross'. Unlike earlier when she did not successfully elicit students' understanding for the word 'orb', this time she asked, “*Okay hold on. Do you know what the concept of double-crossing is?*” (line 55). However, when students replied with a *short response* “*Yeah*”, she went on to answer her own *closed question* – “*If I double-cross you means I'm working, for example I pretend to be working with you but in the end I betray you and I go and help another person*” (lines 58 – 60). This feedback functioned as an other-initiated other repair since there was no opportunity provided for students to self-repair. Thus, the transfer of responsibility did not take place here.

In this thematic extract, Ms Anna used the means of *Feeding back* and *Questioning: Closed questions*, with the intention to *support students' cognitive activity* and give some form of *cognitive structuring* so as to assist the students to provide their predictions and justify them. It is evident that she attempted to use the scaffolding principles of *fading* and *reducing the degree of freedom* as she encouraged the students to gain autonomy and increase their responsibilities to make their own meaning and co-construct their own deep understanding of the reading text they were about to read.

Pictures of the title, setting and characters of the fractured fairy tale text were used as a mode as both teacher and students based their discussions solely on them – without reading the text yet. This proved to be successful in getting students to discuss their predictions about the text they were to read later, as evident in the rich interactions in this pedagogic discourse. Ms Anna used *deictic gestures* to pass on a turn to a student and *beat gestures* co-occurring with her speech to emphasize key terms, like “*other stories*” (Gesture 4, line 31) and “*working with YOU but in the end I betray you and I go and help ANOTHER person*” (Gestures 8a, 8b; lines 58 – 60). In addition, towards the end of the extract, she also identified potential themes to the story plot shared by a student by using her fingers to count the number of themes, “*You have murder, you have mystery you have betrayal*” (Gesture 10; line 66).

Ms Anna also used *iconic gestures* when stressing key terms in her reformulations and repetitions of students’ responses. She used her finger and moved it outwards from her mouth when she said, “*The pig ate the dragon so it’s blowing out fire*” (Gesture 3; line 25). In another instance, she took interest in a student’s use of the word ‘orb’. So, when she checked if the student had meant to use the word and even seemed to initially ask the rest of the class if they knew what an orb was, she used her fingers and hands to outline the surface of a spherical object (Gesture 5a, 5b, 5c; lines 42- 45). Interestingly in this thematic extract, the teacher had not specifically asked the students to use gestures when they shared their predictions and explained their justifications. However, the students seemed comfortable and looked as though the use of gestures was a natural utilisation of semiotic resources when demonstrating their understanding. When a student shared his prediction that “*And then the orb would give him the power, of blowing fire*” (Gesture 6; lines 46 – 47) and “*got the dragon orb and then ate it, and then it could breathe fire*” (Gesture 7; lines 53 – 54), he used his hands to mimic the action of blowing or breathing fire from the mouth. Finally, the student used an iconic gesture to represent the action of ‘stabbing’ when he stressed the word “plunge” during his sharing (Gesture 9; line 64).

Ms Anna’s use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)* served the purpose of *supporting the means of questioning* as she gave the students some form of *cognitive structuring* in

thinking about their predictions. On the other hand, the use of *performative gesture (beat)* served the purpose of emphasizing her speech when providing feedback and reformulations to the students' responses. The students' use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)* might not have served the purpose of providing any learning support like in the case of the teacher. However, they proved to be a successful measure of a student's understanding. It is also noteworthy to mention that a student's use of gesture in this thematic extract mostly corresponded to their utilization of sophisticated vocabulary. Thus, the need arose to use other semiotic recourses like gestures to emphasize their relevance in the context of their sharing. It might also add value onto other students' meaning making experiences and construction of understanding. It is clear that the teacher's *transfer of responsibility* earlier had encouraged the students' effective use of gestures to accompany their predictions. Thus, the use of speech and gesture by the teacher and students worked well within the teacher's use of scaffolding principles for an effective facilitation of students' meaning making and development of deeper understanding.

#### **4.4.4 A seriously twisted fairy tale: Discussion of features based on the reading text**

In this thematic extract, Ms Anna discussed the features of the reading text as a narrative play. She had asked the students to read the text silently earlier before engaging in a teacher-led discussion in the form of IRE/F sequences. Figure 12 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 12 Multimodal Analysis 3 of Singapore Primary-level

Visual Frame	Lines	Linguistic Transcription
<p>[GESTURE 1: arms spread out to show a 'space' – "place"]</p> 	1	/T/ Now we always learn about the different text-types and this text-type is a narrative play. A narrative is what you usually write like in composition, that's a narrative, okay, but this is a narrative-play, so you're reading it in in the form of a script, do you understand me? <b>(Topic initiation)</b>
<p>[GESTURE 2a, 2b: hands moved to the right – "place"; then left hand indicating incorrect answer – "background"]</p> 	5	/Ss/ Yes. <b>(Short R)</b>
	10	/T/ Alright, so narratives in general have a setting. A setting what is a setting, can someone like sort of explain it, to me? <b>(Closed Q: Topic initiation)</b> [student's name]
	15	/S/ The place where the, the action takes place. <b>(Short R)</b> /T/ Exactly. <b>(Evaluation)</b> The place where the action happens. <b>(Repetition)</b> Would you like to add on? [student's name] <b>(Open Q: Seeking other viewpoints)</b>
	20	/S/ Background? <b>(Short R; Trouble source)</b> /T/ What do you mean by background? <b>(Closed Q for clarification; Other-initiated Repair)</b>
<p>[GESTURE 3 &amp; 4: moved body to the side indicating she was "pushed gently"; body and arms in a position of dramatic 'entrance pose']</p> 	25	/S/ The, the place [Gesture 1] where the background is. <b>(Short R; Self Repair)</b> /T/ Yeah <b>(Evaluation)</b> so it's the place <b>(Repetition)</b> [Gesture 2a], it's not the background, background is different [Gesture 2b]. <b>(Feedback)</b>
	30	/S/ Place and time also. <b>(Short R; Other -initiated Other Repair)</b> /T/ Yes, <b>(Evaluation)</b> place and time <b>(Repetition)</b> , okay, so to to give the the reader an idea of where that that thing happened, or or when it happened.
	35	<b>(Reformulation)</b> Okay thank you. Now next one. <b>(Topic initiation)</b> Narratives in general, also have, characters. Now it's important if you look at the words in the brackets there, that vivid description is from the storyteller as well as in the stage directions. For example, <i>gently pushes the storyteller away</i> [Gesture 3]. Or, <i>the dragon enters</i> [Gesture 4], you know that kind of thing. So it should be action, so it tells you about the characters. Example, <i>frantic knocking</i> [Gesture 5a] If you just knock, okay everybody just knock. <b>(Topic initiation)</b> Okay stop. Now I want frantic knocking. [Gesture 5b] Stop, stop. Frantic means you increase in speed, there's more urgency.
<p>[GESTURE 5a,5b: fists knocking an imaginary surface (T) or tables (Ss)]</p> 	40	/T/ Now, also, a narrative usually has a plot, or, or, a problem. <b>(Topic initiation)</b> Okay. And a solution. A plot means you have a- a problem or solution, like just now kay erm Jayce's story. It's got murder, it's got mystery, it's got romance, it's got all of that, right. It it sort of has that, it it brings you through a series of events [Gesture 6a, 6b]. So your story is not monotonous and everyone falls asleep.
<p>[GESTURE 6a, 6b: hand in an up and down motion – "series of events"]</p> 	45	T – 7 turns

All *topic initiations* were based on key terms she identified from her brief teacher-directed 'lectures' - "*this is a narrative-play, so you're reading it in in the form of a script*" (line 4 – 5), "*so narratives in general have a setting*" (line 7) and "*Now next*

one. Narratives in general, also have, characters” (lines 27 – 28). When she elicited responses from the students, she did respond with repetitions, evaluations and reformulations – “Yes, place and time, okay, so to give the reader an idea of where that that thing happened, or when it happened” (lines 24 – 26). Ms Anna also attempted to seek other student’s viewpoints about the term ‘setting’ – “Would you like to add on?” (line 12). Here, when the student responded with a *short response* - “background?”, she identified it as a possible trouble source and thus responded with a *closed question* to seek clarification on what the student meant – “What do you mean by background?” (line 15). Here, she was releasing responsibility to the student instead of correcting him immediately. The student then attempted to *self-repair* when he clarified, “The, the place where the background is.” As the student has used both the term ‘place’ and ‘background’ – which was considered an incorrect response, Ms Anna corrected his response by providing an evaluation and feedback that “it’s not the background, background is different”. However, she did not extend this topic to ensure that students understood why is ‘background’ different or not to be confused with ‘place’ when describing the ‘setting’ of a story. Interestingly, another student initiated another response by sharing that setting is “place and time also” (line 22). This served as an *other-initiated other repair* since it was not the student with the *trouble source* who was able to successfully *self-repair*.

Ms Anna used the means of *Feeding back* and *Questioning*, with the intention to *support students’ cognitive activity* so as to assist the students to explain their response. There was evidence of *contingency* and *fading* as she attempted to provide an opportunity for the student to clarify his response and provide a self-repair. She did not choose to correct the response right away. However, there was no true *release of responsibility* since she did not ensure that the students understood the difference between the terms ‘background’ and ‘place’ – the terms the student was confused with in the first place. Only after a single reiteration of the IRE/F sequence about this topic repair, she had chosen to provide an evaluation and feedback that ‘background’ is not the answer. The turn-taking sequences provided little opportunity for cumulative talk. There may be some opportunity to open the discussion further and provide opportunities for students to extend their responses beyond the short phrase or word. However, she did not provide this to the students. More importantly, topic analysis of this thematic extract provided key evidence that the pedagogic discourse

was not dialogic and that topic was not co-constructed by the teacher and students.

Text as a mode is essential within this extract as both teacher and students referred to the reading text, of which their discussion was based on. Ms Anna used *iconic gestures* to represent the actions of “*pushed gently*” and “*the dragon enters*” (Gestures 3 and 4; line 32). She also used her fist to knock an imaginary door to represent the action “*frantic knocking*” (Gesture 5a, line 34). As she attempted to add a semantic model with her elaboration “*there is a sense of urgency*”, she encouraged the students to show their understanding of “*frantic knocking*”. The students then responded by knocking their tabletops with their fists – an action that is both *iconic* and modeled after Ms Anna’s demonstration earlier. Ms Anna also used *deictic gestures* to stress on key terms like “*series of events*” by moving her hand in an up and down motion representing a ‘non-monotonous’ flow of events in the story (Gestures 6a, 6b; line 44). One of the students also showed his use of *deictic gestures* by spreading his arms out to represent a ‘space’. This served to stress a *self-repair* as he clarified that he meant setting is like a “*place*”.

Here, the use of both *communicative* and *performative gestures* did not seem entirely effective in supporting students’ learning. The gestures provided the necessary emphasis and direction when the teacher presented topic-initiations and they facilitated some meaning making and or develop student understanding (e.g. urgency of frantic knocking). However, students were able to provide the ‘right’ answer as expected by the teacher, without relying on the teacher’s use of gestures to support their learning. This is especially so since the students were able to use gestures themselves.

#### **4.5 British International School Primary-level Reading Instruction – Lesson Frame Summary**

This section offers a brief description of the reading instruction unit of work for the Year 6 (11-year old students) classroom in a Singapore-based British international school. The thematic extracts that will be discussed later are selected from Lesson One of the unit. Refer to Appendix 4.4 for the unit’s lesson topic, learning objectives, writing targets and Lesson One’s classroom activities.







By Lesson 3, the class teacher, Mr John (a pseudonym), had gone through the reading passage extensively in class, either in the form of teacher-directed lectures and discussions or in pair/group work student activities. In addition, he had also managed to cover all of the lesson topics and skills she intended to teach in the unit of work.

From the findings, it was observed that while speech played a central role in mediating learning, the use of gestures not only favoured students' comprehensibility of the reading text but also gave support to their construction of meaning. The use of gestures, constituted a crucial tool (as visual inputs and repairs) for the teacher's construction and development of scaffolding strategies. Additionally, students profited from the use of gestures in opportunities for self-repairs, which facilitated their understanding and meaning making inferences. It is through a partnership between speech and gesture that meaning and understanding are achieved in the pedagogic discourse of this British international school primary-level classroom.

#### **4.5.2 Thoughts and feelings about the Iron Man – Eliciting Students' Responses**

During this whole class interaction, Mr John was eliciting students' responses about the thoughts and feelings about the character Iron Man. He had instructed students to skim the reading text, put on their red hat (De Bono's Thinking Hats; Red Hat focuses on emotions and feelings), and write their first impressions of Iron Man down. He controlled when a 'turn' was given to a student. He maintained IRE/F sequences with open questions and direct elicitations. Some sequences of 'I' & 'R' produced a brief amount of 'exploratory talk' (Barnes, 2008) opportunity, which he used to elicit knowledge and understanding from students. Figure 13 below shows the multimodal analysis of the thematic extract discussed in this section.

Figure 13 Multimodal Analysis 1 of British international school Primary-level

Visual Frame	Line s	Linguistic Transcription
<p>[GESTURE 1: iconic gesture for the action of “putting a hat on”]</p> 	1	/T/ I want you to skim through the story. But first I want you to be thinking. I want you all, do it for me. Can you put your red hat on? [GESTURE 1]
<p>[GESTURE 2: iconic gesture for the action of “jotting (something) down”]</p> 	5	Put your <i>red hat</i> * on. And you’re going to be thinking of first feelings and emotions, and thoughts about the Iron Man. {Topic Initiation} Ok. You can use a whiteboard pen. You can jot down [GESTURE 2] on your table anything that comes to mind when you’re thinking about the Iron Man.
<p>[Action 3: Students reading and writing.]</p> 	10	/Ss/ [Action 3] Reading and Writing
		-----
	15	/T/ Let’s see what’s your initial thoughts and feelings? (Shared experiences – ‘Let us’ statements) What do you think about the Iron Man, what comes to mind? (Open Q) [student’s name?]
	20	/S/ His eyes are the things that can represent his feelings. So when they’re like <i>headlamps</i> , he could be angry or something?
	25	/T/ Ok. We’ll we’re going to be exploring that idea later. I like that. (Feedback) The eyes express feelings. (Reformulation) [student’s name?]
		[GESTURE 4]
	30	/S/ He kind of acts like a cat. In the beginning, his ears were like twiching. And that reminds me of a cat.
		/T/ Ok. Almost like an animal. (Reformulation) Ok. [student’s name?]
		/S/ He was new to the world.
		/T/ You think he’s new to the world? (Repetition)
		Why do you think he was new to the world? (Open Q)
		/S/ He didn’t know what, he thinks the sea is new.
		/T/ Ok. He had never seen the sea before.
		(Reformulation) So, he’s new to the world. We’re going to explore these ideas about the history of the Iron Man.
<p>[GESTURE 4 – student’s name]</p> 		-----
		*De Bono’s Thinking Hats

Mr John used *open questions* as *topic initiations* – “You’re going to be thinking of first feelings and emotions, and thoughts about the Iron Man” (lines 4 & 5), to invite students to provide their thoughts on the character. When students replied with fairly *short responses* (a short sentence or phrase), he often either *repeated* them or gave a short *feedback* on them. While the use of *open questions* allowed students to have their own opinions without being imposed with the teacher’s ‘right answers’, they are limited to individual student’s viewpoint. This means that the topic initiation by the teacher did not lead to *topic invitations* (Radford & Ireson, 2006), when students’

alternative viewpoints are sought. However, he did highlight at the beginning that the experience of making meaning or making sense of the reading text was shared between himself and the students – ‘Let’s statement’ (line 12).

Within this thematic extract, Mr John used the means of *Questioning: Open questions* consistently throughout the extract, with the intention to *support students’ metacognitive activity* and give some form of *direction maintenance* so as to keep the students on target of the pursuit of the objective – first impressions about the character. This is evident when the teacher said, “think of feelings and emotions, and thoughts about the Iron Man”, and later asked “What do you think about the Iron Man, what comes to mind?” However, there was no evidence of *contingency*: responsive, tailored or adjusted support (Van de Pol, Volman, & Beishuizen, 2010) as there was no evidence of any learning support offered. This was possibly due to an absence of potential *trouble source* from the students. Arguably, this was so since the teacher had not expected any particular responses from the students. The *open questions* he used to elicit students’ responses encouraged students to share their opinions widely. Thus, there was no need for any learning support to scaffold students’ understanding and meaning making since students’ responses were all accepted as possible inferences. These became authentic students’ *topical contributions*.

With regard to the use of semiotic resources, the students used their IPADs to refer to the reading text. They also used their table surfaces to write their thoughts down when thinking about their impressions of the character (Action 3; Line 10). Text as a mode was evident here. In addition, Mr John used *deictic gestures* to point to written responses on the students’ table surfaces and reading text in students’ IPADs as well as when passing a turn to a student to provide responses (Gesture 4; Line 21). He used an *iconic gesture* to represent the action of “jotting (thoughts) down” on students’ table surfaces (Gesture 2; Line 7). He also used an *iconic gesture* to represent the action of “putting a hat on” when encouraging students to use De Bono’s Red Thinking Hat to think of their emotions and feelings about the character Iron Man (Gesture 1; Line 3). This allowed the students to be focused in their metacognitive and cognitive activities following their reading of the text. The guiding of students’ thinking using De Bono’s red hat allowed the students to be self-aware of

the thoughts that come to mind – particularly in matters to do with their feelings about the Iron Man as a character in the story. Mr John added numerous *beat gestures* co-occurring with his speech.

In sum, the use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)*, served the purpose of *supporting the means of questioning* as he gave the students some form of *direction maintenance* in sharing their first impressions of the character. The *performative gesture (beat)* on the other hand served the purpose of emphasizing his speech when he repeated, reformulated and provided feedback to students' responses (McNeill, 1985; Martinec, 2000). Arguably, the use of *language correspondent communicative gesture* - putting thinking hats on – were effective in supporting students' learning. By the end of the thematic extract, students had shared numerous inferences about the character Iron Man based on clues gathered from the reading text – his behaviour, actions and so on. Besides, the teacher might have needed to ask follow-up open questions like “*Why?*” when he wanted students to extend their responses (Line 27 & 28). However most of the time, he was able to get extended responses from students without probing them further. Hence, speech and the use of gestures provided the necessary emphasis and direction when the teacher presented topic-initiation and encouraged students' responses. So, they did facilitate students' meaning making and develop student understanding.

#### **4.5.3 Students' performances of the reading of text 'Iron Man'**

Following the earlier extract, Mr John asked the students to work in groups, refer to an assigned paragraph of the reading text and perform their understanding and interpretation of it. Figures 14.1-14.2 below show the multimodal analysis of the thematic extract discussed in this section.

Figure 14.1 Multimodal Analysis 2 of British international school Primary-level


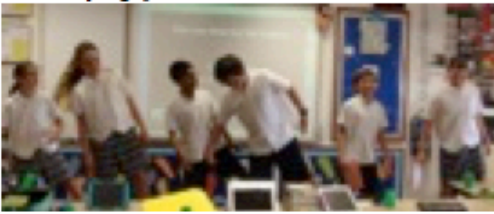




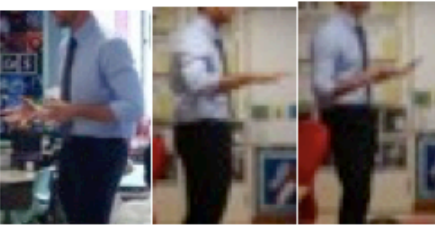

Visual Frame	Lines	Linguistic Transcription
<p><b>[GESTURE 1: Passing a turn to a student group.]</b></p> 	1	/T/ You're going to read through this extract. You're going to perform it – that particular paragraph. And you can do it through soundscapes – you can do sounds, you can do repeating lines, have all of you doing it at the same time, or a group of you doing a certain line. Try and get these sound effects in your reading. Ok. So you're going to be creative in reading out your paragraphs, as creative as possible. Try and get sound effects in, try and think of how you're going to read the lines and then we'll get to a class reading.
<p><b>[GESTURE 2a: iconic gesture for the action of "swaying"]</b></p> 	5	/Ss/ [Group Activity: Students work in groups to plan their reading performances.]
<p><b>[GESTURE 2b: iconic gesture for the action of "swaying"]</b></p>	15	/T/ [Teacher go round the class to provide supervisory and formative monitoring.]
<p><b>[GESTURE 3a, 3b – iconic gesture for the action of "falling" - "stepped forward, off the cliff"]</b></p> 	20	/T/ WELL DONE. For the way that in which you had worked together on this task. You've done really really well in terms of how much you've cooperated and collaborated to make something I think might look very good. (feedback) Now, sit down where you are and you're going to perform your paragraph where you are now. Ok. (Organisational talk) So, we're going to start with you guys. [GESTURE 1]
<p><b>[GESTURE 3a, 3b – iconic gesture for the action of "falling" - "stepped forward, off the cliff"]</b></p> 	30	/Ss/ [Group Performance] (students' demonstration of understanding) /Ss/ He swayed [GESTURE 2a] in the strong wind that pressed against his back. He swayed forward [GESTURE 2b], on the brink of the high cliff. And his right foot, his enormous iron right foot, lifted-up, out, into space, and the Iron Man stepped forward, off the cliff [GESTURE 3a], into nothingness.
<p><b>[GESTURE 4a, 4b – iconic gesture for the movements of sea waves]</b></p>	40	/Ss/ CRRRAAAASSSSSH! [GESTURE 3b: Sound of 'crash' as an onomatopoeia: the formation of a word by imitation of a sound made by or associated with its referent.]
<p><b>[GESTURE 4a, 4b – iconic gesture for the movements of sea waves]</b></p> 	45	Down the cliff the Iron Man came toppling, head over heels. CRASH! CRASH! CRASH! /Ss/ [Group Performance] (students' demonstration of understanding)
<p><b>[GESTURE 4c - iconic gesture for the movements of "waving fingers"]</b></p>	50	/Ss/ [GESTURE 4a] Only the sound of the sea [GESTURE 4b: Sound of the sea 'Sssshhhhhh' as an onomatopoeia], chewing away at the edge of the rocky

Figure 14.2 Multimodal Analysis 2 of British international school Primary-level

	55	<i>beach, where the bits and pieces of the Iron Man lay scattered far and wide, silent and unmoving. Only one of the iron hands, lying beside an old, sand-logged washed-up seaman's boot, waved it's fingers</i>
<p>[GESTURE 5 - Raised hands in front of body – “ certain phrases, certain words... the way that you moved.. the way that you created sounds...”]</p>	60	<i>/T/ Excellent! Well done, guys!</i> <i>(Evaluation) I really like your interpretations there! That was EXCELLENT! (feedback)</i>
	65	<i>/T/ It's interesting how some of you picked up certain phrases, certain words [GESTURE 5] and that influenced the way that you said it, or the way that it made you moved, or the way in which you created some sounds as well. Really</i>
<p>[GESTURE 6a, 6b – puts his hand to his ear and leans forward as if indicating that he is expecting students to respond]</p>	70	<i>interesting. (feedback) That's because Ted Hughes being a poet he uses some beautiful language in his opening.</i>
	75	<i>(feedback) And we're going to look and see how effective it is. (Topic Initiation) And we're going to start analysing the text....</i>
<p>[GESTURE 7a, 7b – moved his hands apart – “falls completely apart”; placed his hands</p>	80	<i>/T/ (Organisational Talk on Group Activity) First activity is you're going to be doing a character focus. This is where you're going to be thinking about the Iron Man as a character. And there's all those unanswered questions at the start of the text. <i>How far did he walk?</i> [GESTURE</i>

They could use ‘soundscapes’ to represent certain words or phrases with sounds (lines 1 – 15). It is interesting to note that he did not mention anything about the use of ‘dramatisation’ for their reading performances. Still, during student-student group discussions, most students chose to use gestures (iconic) as part of their reading performances. Noticing this at the end of student discussions, Mr John provided feedback that he was impressed with the students’ level of cooperation and collaboration which might lead to good performances later (lines 24 - 25). Towards the end of the extract while Mr John was providing *organizational talk* for the next group activity, he used a series of *open questions* as a *topic-initiation* to encourage students to think about the character Iron Man – “*So what do you make of that? Anything that you may think of what he's feeling when he's at the brink of the cliff. What do you think of that? How does he feel when he falls off the cliff? What was he feeling when he sees the sea for the first time?*” (lines 83 – 89).

Here, Mr John used the means of *Feeding back* and *Questioning: Open*

*questions*, with the intention to *support students' cognitive activity* and give some form of *cognitive structuring* so as to assist the students to organize and justify their discussions. It is evident that he attempted to use the scaffolding principles of *fading* and *reducing the degree of freedom* as he encouraged the students to gain autonomy and increase their responsibilities to make their own meaning and co-construct their own deep understanding of their reading.

While text as a mode remained essential within this extract as both teacher and students continued to refer to the reading text that their discussion was based on, Mr John used various *deictic gestures* to pass on a turn to a group of students for their reading performance (Gesture 1, line 27) and *beat gestures* co-occurring with her speech to emphasize key terms “*certain phrases, certain words... the way that you moved.. the way that you created sounds...*” (Gesture 5, lines 59 – 62). Later, he used *iconic gestures* to elicit responses from students by putting his hand to his ear and leaning forward (Gestures 6a, 6b; lines 75 – 76), and when he was emphasizing key terms while initiating a topic for students' discussion. Here, he moved his hands apart to represent “falls completely apart” and placed his hands together, palm-to-palm to represent “back together again” (Gestures 7a, 7b; lines 80 – 82). Mr John's use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)* served the purpose of *supporting the means of questioning* as he gave the students some form of *cognitive structuring* in thinking about the topic of discussion. On the other hand, the use of *performative gesture (beat)* served the purpose of emphasizing his speech when providing feedback to the students.

Noteworthy of mention in this thematic extract however is the students' use of gestures in their performances of understanding - based on their reading. It is evident that it added value to the facilitation of students' meaning making and co-construction of understanding of inferences from the reading text. It is clear that the teacher's *transfer of responsibility* earlier had encouraged the students' effective use of gestures to accompany the reading out loud of their reading performances. In a student performance of their interpretations of the paragraph they read, they used *iconic gestures* to represent the actions of “*swaying*” and “*falling*” as depicted in their reading (Gestures 2a, 2b; lines 30 – 32, & Gestures 3a, 3b; lines 35 – 37). In another student performance of their interpretations of the paragraph they read, they used

*iconic gestures* to represent the movements of sea waves and “waving fingers” as depicted in their reading (Gestures 4a, 4b, 4c; lines 45 – 53). The students’ use of *communicative gestures, which were language correspondent (iconic)* served the purpose of emphasizing the critical meaning of certain phrases, which they had selected on their own and felt that those phrases were important in their understanding of their inferences of the reading text.



The use of these *communicative gestures* proved successful indeed in supporting students’ learning as it served as evidence of their use of other semiotic resources (gestures and even sounds – onomatopoeia) as effective inputs for their own *topical contributions*. Thus, the teacher’s and students’ use of speech and gesture worked well within the teacher’s use of scaffolding principles for an effective facilitation of students’ meaning making and development of deeper understanding.

#### **4.5.4 Group discussions on various language activities – Teacher’s provision of performative monitoring and learning support**

During student discussions, Mr John went round the class to provide supervisory (checks if students were on task or idle) and performative (checks if students needed learning support to help them complete the task) monitoring of the students’ task. At times he would join a group of students to provide planned, contextual learning support based on the specific task the group of students were working on. Figure 15 below shows the multimodal analysis of the thematic extract discussed in this section.



Figure 15 Multimodal Analysis 3 of British international school Primary-level

Visual Frame	Lines	Linguistic Transcription
<p>[GESTURE 1: pointing to extract]</p>  <p>[GESTURE 2: raises hand to stress on – “rhetorical questions”]</p>  <p>[GESTURE 3 – raises hands to stress on – “what are you thinking here?”]</p>  <p>[GESTURE 4a, 4b – teacher raises hand – “absolutely”; student uses finger to point and show a “falling” action]</p> 	<p>1</p> <p>5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p>	<p>/T/ Ok. What comes to your mind when you think of language that Ted Hughes uses in this extract? [GESTURE 1] (Closed Q: Topic Initiation)</p> <p>/S/ Repetition (Short R)</p> <p>/T/ Repetition. (Repetition) Right. (Feedback) Where can you find repetitions? (Closed Q: Seeking clarifications) You may want to get a pen to annotate on the extract.</p> <p>/T/ Why do you think Hughes uses repetitions? (Open Q) Let’s take a look at your examples of repetitions? (Topic Repair)</p> <p>/S/ Nobody knows. Nobody knows. (Short R)</p> <p>/S/ Slowly turned to the right, slowly turned to the left. And CRASH! CRASH! CRASH! (Medium R)</p> <p>/T/ Right. Ok. (Feedback) Let’s take a look at Nobody knows. Nobody knows. (Repetition) Why he uses repetition here?</p> <p>/S/ Question? (Short R)</p> <p>/T/ Question. (Repetition) Why do you think he’s using rhetorical questions? [GESTURE 2] (Open Q: Topic Repair)</p> <p>/S/ He wants us to think. (Short R)</p> <p>/T/ What are you thinking here? [GESTURE 3] (Closed Q: Topic Repair)</p> <p>/S/ He wants to engage the reader. (Short R: Topic contribution)</p> <p>/T/ Excellent. (Evaluation) He wants to engage you the readers. (Repetition) What else? Why repeat Nobody Knows? (Closed Q: Topic Repair)</p> <p>/S/ He wants to make it dramatic. (Short R)</p> <p>/T/ Excellent. (Evaluation) Absolutely. (turned to another student) Do you agree? (Closed Q: Seeking alternative</p>
  <p>[GESTURE 5a, 5b – teacher slams the table– “CRASH!”]</p>   <p>[GESTURE 6 – hands apart – “distance”]</p> 	<p>35</p> <p>40</p> <p>45</p> <p>50</p>	<p>viewpoint)</p> <p>/S/ Yes (Short R)</p> <p>/T/ Awesome (Evaluation)</p> <p>/T/ Now. What about the repetition of CRASH! CRASH! CRASH! Why is that repeated? (Closed Q: Topic Repair)</p> <p>/S/ He kept on falling, and falling and falling. [GESTURE 4a] (Short R: Other-initiated Self Repair)</p> <p>/T/ Absolutely. (Evaluation) [GESTURE 4b] Because if it just goes and CRASH! [GESTURE 5a] Sounds like it’s just a? (Closed Q: Topic Repair)</p> <p>/S/ Short fall. Exaggerating. (Short R)</p> <p>/T/ Short fall. Exaggerating. (Repetition) Absolutely. (Evaluation) But if it’s CRASH! CRASH! CRASH! [GESTURE 5b] He’s giving you a sense of distance. (Feedback) [GESTURE 6] How far he falls. Well done.</p> <p>/T/ Ok. Ted Hughes also uses a variety of short, simple and complex sentences. What are some of the simple sentences? (Closed Q: Topic Initiation)</p> <p>/S/ Nobody knows. Silence. CRASH! (Short R)</p> <p>/T/ Yes. And you have the longer complex sentences as well. Why do you think he uses some simple and some complex sentences? What effect does this have? (Closed Q: Topic Repair)</p> <p>/S/ It’s like to sound different, dramatic. If he uses short sentences only, then it’ll be like boring. If he uses different sentences, it’s like he gets to draw the reader into the story. It will be interesting. (Long R)</p> <p>/T/ Do you agree? Disagree? (Closed Q: Seeking alternative viewpoint)</p> <p>/Ss/ Agree. (Confirmation)</p> <p>/T/ Good (Evaluation)</p>

He used *closed* and *open questions* either as *Topic Initiations* – “What comes to your mind when you think of language that Ted Hughes uses in this extract?” (lines 1 – 2) or *Topic Repairs* – “Why do you think he’s using rhetorical questions?” (lines 16 – 17). The topic opened at the start of the thematic extract focusing on the use of language turned into various other specific topics like the use of repetitions and varied sentence structures. Mr John also linked these topics to the effect language has on the reading text. These topical changes were, not only initiated, repaired by the teacher but also added on as students’ *topical contributions* – “He wants to engage the reader.” (line 21). He also sought other viewpoints and checked if students’ agreed or disagreed with a shared response to highlight the shared experience of meaning making between the students and him - “Do you agree?” (lines 27 & 53). Thus, in this topic analysis, it is evident that the pedagogic discourse between the teacher and students appear *dialogic* and *co-constructed*.

Furthermore, the turn-taking sequences between the teacher and students provided an opportunity for *cumulative talk*. Mr John might have repeated students’ responses at times and provided some evaluations, confirmations and feedback, but he did provide the opportunity to ‘open’ the discussion further and for students to extend their responses beyond the short phrase or word. That is why towards the end of the thematic extract, a student was able to provide a long response when asked about her thoughts on the effect of varied sentence structures – “It’s like to sound different, dramatic. If he uses short sentences only, then it’ll be like boring. If he uses different sentences, it’s like he gets to draw the reader into the story. It will be interesting.” (lines 49 – 51). There is clear evidence that Mr John used the means of *Questioning* to support students’ *metacognitive and cognitive activity* as a form of *cognitive structuring*. This allowed the students to organize, extend and justify their discussions. It is evident that he attempted to use the scaffolding principles of *fading* and *reducing the degree of freedom* as he encouraged the students to gain autonomy and increase their responsibilities to make meaning and co-construct their own deep understanding of their reading. Over the extract, the change in questioning (identified earlier with *topic repairs and topic contributions*) created a *release of responsibility* for the students.

Text as mode was continuously used on the screen and in the reading text the teacher and students were referring to. Mr John used *deictic gestures* to point to the reading text as well as to identify students or pass a turn (Gesture 1; line 2, & Gesture 4b; line 34). He also used *iconic gestures* to represent “CRASH!” and “a sense of distance” (Gestures 5a, 5b; line 35 & 39, & Gesture 6; line 40). He did add numerous *beat gestures* co-occurring with his speech (Gestures 2 & 3; lines 17 & 19). However, noteworthy of mention here is the student’s own initiated use of gesture when sharing her responses during the discussion. When asked why the author used repetitions in “CRASH! CRASH! CRASH!” she explained that it shows how the Iron Man is “*falling, falling and falling*” (Gesture 4a; line 32). Only then was the teacher able to provide an *extended feedback*, also with the use of *iconic gesture*, that the repetition gave the reader a sense of distance to the long fall suffered by the Iron Man. In sum, the use of *communicative gestures, which were language dependent (deictic) and language correspondent (iconic)*, served the purpose of *supporting the means of questioning* as Mr John gave the students some form of *direction maintenance* in discussing the use of language and its effects on the reading. On the other hand, the *performative gesture (beat)* served the purpose of emphasizing his speech when she evaluated, repeated or reformulated his question to achieve a *dialogic* form of pedagogic discourse.

More importantly, the teacher’s and students’ use of speech and gesture supported the use of scaffolding principles. Over the thematic extracts in this lesson, the use of speech and gesture changed such that the teacher was able to release responsibility to the students. While in the beginning the teacher might have needed to use gestures as a form of learning support but towards the end of the pedagogic discourse it was the students who were able to use gestures to demonstrate their understanding. Hence, both speech and gestures were effective in supporting students’ learning, facilitating meaning making and developing deeper student understanding. By the end of the extract, students were able to extend their responses into longer explanations and initiated their own use of gestures to demonstrate their understanding of various inferences from their reading text.

## Chapter 5

### 5.0 Thematic-based Discussion

This sociocultural research explored the use of semiotic resources; speech and gesture for meaning-making in primary-level and secondary-level reading instruction. Using multiple case studies of two Singapore-based British international school and Singapore school primary classrooms as well as two Singapore-based British international school and Singapore school secondary classrooms, this observation research applies an analytical approach, informed by theories of scaffolding and gesture. The study looks at how speech and gesture are utilised during reading instruction. This involves the teacher's and/or student's 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning-making. Using multimodal transcription and conversation analysis, the research extrapolated linguistic and multimodal features of the pedagogic discourse between teachers and students, such that the multisemiotic teaching and learning experiences are explicated.

Previous research has documented that teachers do indeed use gestures in classroom settings (Flevaras & Perry, 2001). A speaker's use of gesture does facilitate listeners' comprehension of the accompanying speech, particularly when the verbal message is ambiguous (Thompson & Massaro, 1994) or highly complex (McNeil, Alibali, & Evans, 2000). However, the few studies of teachers' gestures (e.g. Alibali & DiRusso, 1999; Gullberg, 2006; Chamberlin-Quinlisk, 2008) have not directly examined gesture as a form of scaffolding. Furthermore, such studies have yet to investigate students' use of gestures in facilitating meaning making in the reading (L1 and L2) classroom. This study aims to contribute knowledge towards these gaps in research. The present results indicate that gesture is indeed pervasive in instructional communication in the classroom. Furthermore, the results suggest that gesture does work hand-in-hand with speech to serve a scaffolding function. Evidence also showed that gesture was used most frequently for new material, for referents that were highly abstract, and in response to students' questions, comments and trouble sources. In fact, gestures and speech are utilised in the classroom as teachers' and students' repairs when engaged in making meaning experiences. Overall, gesture and speech were found to be used as effective semiotic resources to

complement the scaffolding strategies in reading instruction for both L1 and L2 classrooms.

### **5.1 Semiotic Resources in the Classroom**

Thibault (2004) observes that language and gestures are very different semiotic resources and are organised according to different principles. Thibault (2004) observes that language is predominantly typological-categorical; it is based on discrete categorical contrast or difference. Gesture, on the other hand, is topological-continuous; it is based on continuous variation of visual and spatial relations (p. 26). The two semiotic modalities do not simply express the same meanings by alternative means of expression. Instead, they make different meanings on the basis of their different principles of organisation.

Based on the findings in the current study, teachers from the Singapore-based British international school and Singapore schools were observed to employ a range of semiotic resources; in particular interest to this study, speech and gestures. Depending on the manner in which they are utilized for effective teaching, speech and gestures do represent different ‘meanings’ with respect to different ‘functions’ in a reading classroom (Thibault, 2004). In terms of the relationship between gesture and language, Zappavigna, Cleirigh, Dwer and Martin (2010) observe that gestures seem to “hold a capricious relationship to the meaning expressed in spoken discourse, roaming all over the semantic systems in the logogenesis of a text” (p. 234). As such, Zappavigna et al. (2010) propose using tone-group in language as co-terminous with a gestural unit. Zappavigna et al. (2010) also argue that “as a mode of expression, gestures have a prosodic structure which we might think of as akin to an intonation contour because it cannot be systematically divided into constituent units, unlike, for example, grammatical structure” (p. 219). Radford (2010) studied the use of gesture (i.e., pointing to a picture) as a form of scaffolding for children who have difficulties with word finding. This is a low-level strategy before a higher-level verbal technique is employed. Indeed, the use of gestures represents additional variations by which the teacher most probably signals the importance of what she is saying. This observation is probably directed towards performative gestures (indexical action) and accompanying speech. However, the use of communicative gestures (iconic action)

represents a cumulative effect on the facilitation of meaning when complemented with the teacher's accompanying speech.

The Singapore-based British international school and Singapore teachers used performative gestures fairly frequently in their lessons. However, they do not have any signifying function and usually do not contribute to the ideational meanings made in the lesson. While they convey a sense of dynamism in the lesson, they can be distracting, if used excessively. On the other hand, the teachers used indexical actions and representing actions more frequently in their lessons. In fact, these were observed in all thematic extracts analysed. As communicative gesture, they usually come into a co-contextualising relationship with language and often serve to reinforce the ideational meanings made in different ways. This is described as a form of redundancy that is characteristic and productive in pedagogic discourse. Either the students or whiteboard/screen is the directional goal to which the teachers point to with their hands. This elicits the students' prompt attention or suggests precision and focus on the lesson materials written on the whiteboard. However, the act of pointing at students is also an exercise of authority and power that the teachers carry as figures of authority in the classrooms.

## **5.2 Speech and Gesture Used in Contingency, Fading and Transfer of responsibility**

During the pedagogic discourse of all the thematic extracts analysed, the Singapore-based British international school and Singapore teachers' engagement in teacher-student interactions were examined for principles of scaffolding. Van de Pol, et al., (2010) highlights that only if the interaction consists of three parts: contingency, fading, and transfer of responsibility, will scaffolding be possible. Here, the teacher needs to apply strategies for learning that are contingent on student responses, gradually removes (fades) support over time, and as a result, transfers the responsibility from teacher to student for completing a particular task. Three elements are claimed to work interdependently and are necessary for scaffolding to be faithfully implemented in the classroom (Many, Dewberry, Taylor, & Coady, 2009). All the teachers in the Singapore-based British international school and Singapore schools classrooms demonstrated the principles; *contingency* in most of the thematic extracts, *fading* in some of the thematic extracts and *transfer of responsibility* in

lesser number of thematic extracts. Tharp and Gallimore's (1988) six means of "assisting performance": modeling, contingency management, feeding back, instructing, questioning, and cognitive structuring as well as Wood et al.'s (1976) six scaffolding functions: recruitment, reduction of degrees of freedom, direction maintenance, marking critical features, frustration control, and demonstration were essential in the identification of the scaffolding principles demonstrated by all the teachers.

For example, in one of the Singapore secondary-level thematic extracts, as the teacher read out the words "*head hung low*" she simultaneously lowered her head and looked down - acting out the representation to the phrase. The use of this communicative gesture proved successful in supporting students' learning as it served as evidence of the teacher's use of other semiotic resource as an effective input for her contingency. She tailored her support with the use of a reformulated question followed by the demonstration of the key phrase she highlighted "*head hung low*". This scaffolding strategy had clear potential for the facilitation of students' meaning making and development of understanding an inference. In another British international school thematic extract, the teacher used the means of feeding back, questioning and hinting, with the intention to support students' cognitive activity and give some form of cognitive structuring so as to assist the students to organise and justify their responses – elaborating their responses. Based on the student's responses, there was evidence of contingency and fading as the teacher provided a hint, accompanied with the use of gestures, for the students to provide an accurate inference from their reading. Here, the teacher attempted to provide the scaffolding the students needed to seek further clarifications and elaborations on their responses.

In the extracts described above, teachers were prompted either by the student's demonstrations of mis-meanings (use of gestures) through a repair sequence or verbal declarations of trouble/difficulty, before the teachers were able to scaffold the student's understanding. The Singapore teacher provided sufficient learning support using the means of questioning and modeling until the student was able to demonstrate the right gestural representation of "*eyes widened and head hung low*" as contextualized in the reading text. Here, the teacher's use of communicative gestures proved very successful in supporting students' learning. The scaffolding principle of

transfer of responsibility, through the student's use of gestures, was also highly successful in the facilitation of students' meaning making and development of understanding. This was later evident in the student's successful and accurate gestural representation of the meaning of the phrase in the reading passage.

### **5.3 Use of Gestures as Topics**

Topic gestures are representational, "depict[ing] semantic information directly related to the topic of the discourse" (Bavelas, Chovil, Laurie, & Wade, 1992, p. 473). They are iconic or metaphoric and, at times if the speaker is pointing to an object, deictic. Bavelas et al. found that even when a speaker is telling a story alone or speaking to a listener behind a partition, these gestures occur. On the other hand, interactive gestures "refer instead to some aspect of the process of conversing with another person" (p. 473). According to Bavelas et al. (1992), interactive gestures subsume and enlarge the category of illustrators referred to as "beats," and if the speaker is pointing to the listener, they may also be deictic. Always referring to listeners, they do not add information to the discussion but instead are used to establish or affirm a relationship between the speaker and listener. Bavelas et al. (1992) also found that speakers use fewer interactive gestures when listeners are not within eye contact.

Topic gestures appear to coincide with the verbal aspects of instruction and cognitive scaffolding, while interactive gestures coincide with motivational scaffolding. Further, listeners participate actively in conversations through "interactive acts" (Bavelas et al., 1992, p. 487), including back channels, overlaps, and head nods. These interactive acts allow speakers to diagnose listeners' understanding and coordinate their responses so that dialogue becomes "a reciprocal process of co-construction" (Bavelas, Coates, & Johnson, 2000, p. 951). Such categorization of topic gestures has the potential to be used as an analytical model for future studies on a teacher's use of gestures as they occur along with a teacher's verbal scaffolding.

### **5.4 Use of gestures in formulation of repairs**

The production of gesture takes place not entirely through the brain's circuitry that performs instrumental actions, but is instead made possible through linkage to the language centers of the brain. As McNeill (2005) argues, 'the know-how of gesture is



not the same as the know-how of instrumental movement' (p. 245). Unlike auditory expression, the communicative power of the hand relates to vision, which is more fundamental for humans than the auditory channel. In fact, well before children can speak, their hands can both process and articulate through gestures the shapes and movements of objects as well as features and emotions of fellow humans (Heath, 2013). The play of hand gestures during performances of role-playing correlates with the extent to which individuals 'know what they are talking about' (Gentner and Goldin-Meadow, 2003). Thinking through and enlisting 'future memories' in one's embodiment within a performance leads to a well-honed and appropriately timed and proportioned deictics, gestures, and schematic demonstrations. This complements the verbal explication of what the speaker has in mind. Play using gestures embodies character and ideas and can help clarify thinking processes and offer practice essential to later language development.

Teachers use gestures to "ground" (Glenberg & Robertson, 1999; Lakoff & Núñez, 2001) their instructional language, that is, to link their words with real-world, physical referents such as objects, actions, diagrams, or other inscriptions. This grounding may make the information conveyed in the verbal channel more accessible to students. This study suggests that by providing gestural grounding where appropriate, teachers scaffold students' meaning making, and in so doing, foster students' understanding of inferences from reading texts. Thus, gestural grounding may be one means by which teachers' scaffold students' understanding (Alibali & Nathan, 2007).

The findings from this study support a view of teacher gesture as a form of scaffolding. It is noteworthy to highlight that the teachers' gestures may index their own cognitive state (Alibali & Nathan, 2007). Past research has shown that gestures are not solely communicative; they also serve a cognitive function for the speaker, helping to support the reasoning process (e.g., Alibali, Kita, & Young, 2000). This perspective suggests that the teacher might increase his/her use of gesture or his/her provision of opportunity for students to use gestures, as he/she deems necessary and appropriate to release responsibility to the students. This may involve the use of gestures as other-initiated repairs by the teacher and self-initiated or other-initiated self repairs and other-initiated other repairs by students (as discussed in Chapter 4).

From the findings, it is evident that the use of student's gestures is a unique opportunity for a teacher to reveal a 'window' on the student's thought processes (Schwartz & Black, 1996). Such a trouble source may prompt the teacher to encourage a student's self-initiated repair with the use of gestures, ultimately facilitating an effective meaning making experience for the students. In addition, a teacher may also use gestures as other-initiated repairs when prompted by student's declarations of difficulty so as to develop deeper understanding of the inferences they are discussing. Indeed, a teacher's use of gestures reveals aspects of their thinking, not only about lesson content but also about students' abilities. If teachers produce more gestures when they believe students need greater scaffolding, then teachers' gestures may reflect their implicit models of students' knowledge and potential areas of difficulty (Alibali & Nathan, 2007).

### **5.5 Use of Gesture to Complement the Intentions and Means of Scaffolding**

Roth's review of literature on gestures (2001) indicated that gestures have been the focus of research in psychology, anthropology, and other related fields but little work has been done in the context of educational research. Although many studies have reported on the verbal interactions of students, the contribution of gestures in the knowledge construction process has largely been ignored (Roth & Lawless, 2002). At one end of the continuum is gesticulation, hand or arm movement almost always accompanied by speech. At the other end of the continuum is sign language which, although non-verbal, has many of the same structures and organizational patterns of speech (McNeill, 1992). Several researchers have proposed how gestures may be advantageous to the individual: (a) Gestures may serve to stimulate thought in the gesturer (Goldin-Meadow, 2013), (b) gestures may serve to connect the concrete, external world, with the abstract, the internal world of thought (Graham, 1999), (c) gestures may lessen the cognitive load by decreasing the amount of talk required to communicate an idea (Goldin-Meadow, 2013), and (d) gestures may also provide individuals with an opportunity to share their thinking in a way that has less perceived social risk (Goldin-Meadow, 2013; 2014).

From the findings, it was found that gestures were used by the Singapore-based British international school and Singapore schools teachers and students to complement the intentions and means of scaffolding strategies (see chapter 4).

However, it seemed to depend on the role of the gesture. Although there is little evidence from this study that the use of gestures, which matched speech, added value to the learning outcome of the students, using multiple semiotic resources like speech and gesture, is widely believed to enhance understanding (Roth, 2001) and enhance the scaffolding potential of the pedagogic discourse. Besides, the use of gestures could be interpreted as relieving the cognitive burden of students (Koschmann & LeBaron, 2002).

In terms of the ways in which meanings are made in intersemiosis, Baldry and Thibault (2006) propose the 'Resource Integration Principle'. They explain that a multimodal learning environment integrates selections from different semiotic resources to their principles of organisation. These resources are not simply juxtaposed as separate modes of meaning making but are combined and integrated to form a complex whole, which cannot be reduced to, or explained in terms of the mere sum of its separate parts (p. 18). While the principle is, arguably, in operation within all multimodal learning environments, which use a variety of semiotic resources, it is not an imposition of a single homogenous way in which the resources integrate and are organised. In fact, Baldry and Thibault (2006) caution that "different modalities adopt different organisational principles for creating meaning" (p. 4). Hence, it is necessary to examine the specific semiotic resources in focus within the multimodal learning environment and explore the unique ways in which they combine and interact in their joint co-deployment.

The use of gestures during the pedagogic discourse analysed from all the Singapore-based British international school and Singapore schools thematic extracts proved very successful in supporting students' learning as they served as evidence of the teacher's and more crucially the student's use of other semiotic resource as effective identification of trouble sources, self-repairs and teacher input. The teachers tailored their support through the principles of contingency and fading with the use of questions as other-initiated repairs. The final scaffolding principle of transfer of responsibility with the use of gestures was successful in the facilitation of students' meaning making and development of understanding – deriving inferences from the reading text. Crucially, without the teacher's provision of opportunity for students to use gestures to demonstrate their inferential understanding of the reading, the teacher

would not have been able to successfully identify the misconception or student's trouble source.

### **5.6 Use of speech and gesture for dialogic scaffolding**

In the 'Thinking Together' classroom-based intervention programme (Mercer and Littleton, 2007), the study demonstrated how teachers make a powerful contribution to the creation of contexts for learning in their classrooms. Teachers are seen as powerful models for their students – this is because how they talk, act (use of gestures), and structure classroom activities afford key exemplars of how learning and engaging in rich interactions are to be done. It highlights that learning is most efficacious when the teacher models and exemplifies exploratory ways of interacting during whole-class discussions – for example, asking 'Why?' at appropriate times, giving examples of reasons for opinions and checking that a range of views is heard. It is by using and modeling exploratory ways of talking that the teacher acts as the students' 'discourse guide', showing them how to use talk to address problems and solve them (Littleton and Mercer, 2013). A teacher can provide a very effective 'scaffolding' for students who are working together on a problem-solving activity through the combined use of the whiteboard and contingent, supportive talk (Warwick et al., 2010). However, this only occurs where there is active support from the teacher for fostering collaborative, dialogic activity in the classroom and where the teacher is able to devise tasks that leverage on the affordances of the whiteboard to promote active collaborative learning and student agency (Hennessy et al., 2011).

Gestures may be particularly important in classroom settings because students' comprehension is often challenged by instructional discourse that presents new concepts and uses unfamiliar terms. In addition, classrooms are often noisy, with multiple individuals speaking at once. Under such circumstances, gesture may play a particularly important role in comprehension. Teachers use gestures to "ground" (e.g. Glenberg & Robertson, 1999; Lakoff & Núñez, 2001) their instructional language, that is, to link their words with real-world, physical referents such as objects, actions, diagrams, or other inscriptions. This grounding may make the information conveyed in the verbal channel more accessible to students. Therefore, from the findings it is argued that by providing gestural grounding where appropriate, teachers are able to scaffold students' comprehension of their reading, and in so doing, may be able to

foster students' learning and deepen understanding, evident in students' extended responses and rich inferences in the T-S interactions. Thus, gestural grounding may be one means by which teachers' scaffold students' understanding. However, if teachers are sensitive to such a grounding function of gesture, they should vary their use of gesture, using more gestures during parts of the lesson for which students need greater scaffolding. This too is based on the identification of trouble source and the amount of contingency needed in tackling student learning difficulties.

Evidence from the findings of the current study also suggests that the types of gestures demonstrated by the students from the Singapore-based British international school and Singapore schools were communicative. This is evident in the thematic extracts analysed – students utilised communicative gestures when demonstrating their understanding of their reading. At times, communicative gestures were used as self-initiated and other-initiated repairs. Interestingly, the Singapore data showed that a teacher might hand over the turn to a student and specifically ask for a gestural representation of their understanding of an inference from the reading text. However, the Singapore-based British international school data showed that students may provide their responses during the interactional patterns of the pedagogic discourse without specifically being asked to use gestures. On the part of the teachers, evidence gathered from this study showed that both communicative and performative gestures were used. These gestures could function as repairs or inputs during contingency and fading or simply emphasis on key points of discussion during the pedagogic discourse of a reading instruction. Overall, based on the findings, the use of gestures by teachers and students seemed to suggest that they occur during the iterative process of contingency, taking into consideration students' responses and teachers' scaffolding strategies as teachers slowly reduce the amount of learning support and increase the transfer of responsibility to the students. This argument is illustrated in figure 16 below.

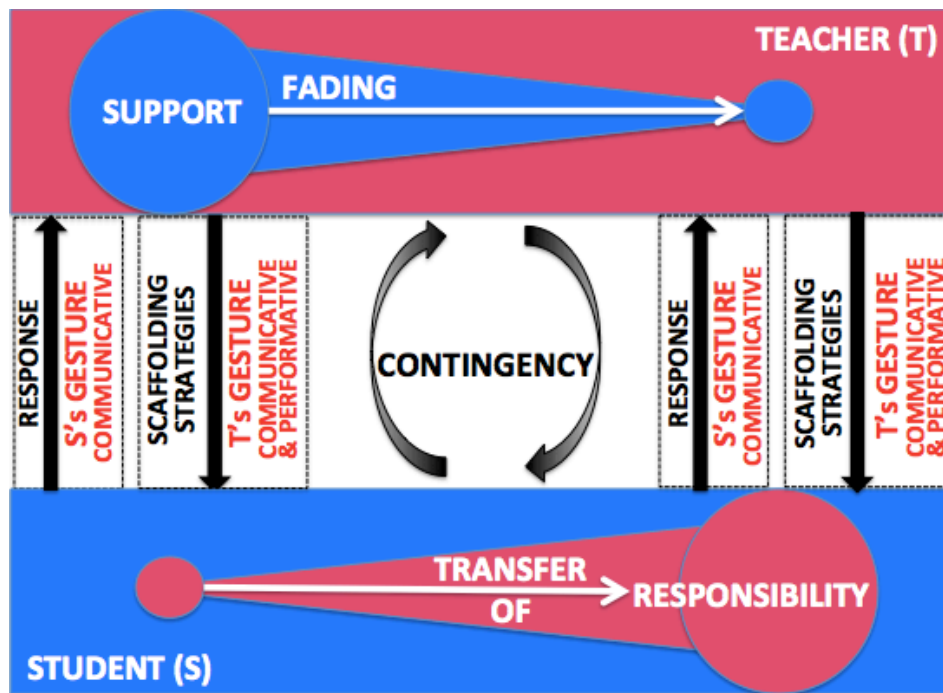


Figure 16 Students' and Teachers' Use of Gesture in Whole-Class Scaffolding

This study also focuses on another extension of the scaffolding principle - its application in whole-class pedagogic discourse, as advocated by several scholars (e.g. Van Lier, 1996; Hogan & Pressley, 1997). Bal (2009) argued that the changeability of 'travelling concepts' is part of their usefulness provided that they are used neither rigidly nor sloppily. The concept of scaffolding would be used rigidly if researchers adhered so strictly to the original definitions that temporary adaptive support in whole-class settings cannot be called scaffolding even though it is in the spirit of the original idea. Loose use of the scaffolding concept is the case if it is stretched so far that almost any support in classroom interaction (Meyer & Turner, 2002), or even aspects of classroom organization, artefacts and sequencing (Anghileri, 2006) are called scaffolding. The latter trend of overgeneralising has already been criticized by many scholars (e.g. McCormick & Donato, 2000; Pea, 2004; Myhill & Warren, 2005; Mercer & Littleton, 2007). Nevertheless, requiring whole-class interaction to have the three principles of scaffolding – contingency, fading and transfer of responsibilities, challenges would arise. The most prominent is the challenge of working collectively with multiple student ZPDs - thus working with multiple layers of understanding and skills (e.g. Hogan & Pressley, 1997; Myhill & Warren, 2005). Perhaps, the use of gesture as argued in Figure 1 is the solution in making whole-class scaffolding easier for teachers.

## **5.7 Implications, Future Studies and Limitations**

This study suggests that gesture can be representative of a speaker's thought processes within a reading comprehension meaning making experience. Martinec (2000) argues that there is no mental process in gesture. However, this study proposes gestural indicators of cognition, which suggests the presence of mental process in gesture. Thus, this study posits that mental process is crucial in a pedagogic discourse of a reading comprehension instruction, where 'visible' acts of cognition, such as reading, viewing and considering a student's response, are regularly performed by the teacher.

### **5.7.1 Implications of Research**

An educational implication of this research is on the construction of the classroom experience and the pedagogy. Jewitt (2007) argues that "how knowledge is represented, as well as the modality and media chosen, is a crucial aspect of knowledge construction, making the form of representation integral to meaning and learning more generally" (pg. 241). The recognition of the multimodal nature of pedagogic semiosis has consequences on the nature of curriculum content as well as on the teaching strategies. Furthermore, there is a strong recognition that mediation of multisemiotic resources can be organised to realise a specific pedagogy. Jewitt (2008) explains that "how teachers and students use gaze, body posture, and the distribution of space and resources produces silent discourses in the classroom that affect literacy" (pg. 262). A key impetus for multimodal research in education is that it paves the way to a more focused and intentional deployment of semiotic resources for effective teaching and learning. Hence, a holistic understanding of the teaching and learning in the classroom requires consideration of the combination of multimodal semiotic selections, rather than a focus on language alone.

An important research goal for this study is to develop practical anecdotal evidence for theoretical developments on scaffolding and effective teaching directed at reading instruction for L1 and L2 learners. For this purpose, the research highlights the following recommendations for practitioners/educators of reading instruction. Firstly, in order to facilitate exposure to a reading text at a (minimally) challenging level, teachers should select authentic materials, adapting reading texts up to the level of ability of the learners. Scaffolding strategies on the reading content and language

level can be constructed with the use of dialogic scaffolding and gestures. Next, teachers should facilitate meaning-making experiences by encouraging students to explore new vocabulary items, check their meaning, use teacher's/peer's feedback on incorrect meaning identification, and deepen understanding of reading through discussions. Here, while engaging in contingency checks during instruction, teachers should use gestures (both communicative and performative) as inputs and repairs. They should also encourage students or provide students with the opportunity to use gestures when demonstrating or showing a representation of meaning/inferences from the reading text. The use of various means of scaffolding strategies like giving examples/hints, using recasts and confirmation checks, clarification requests and giving feedback (including peer feedback), should additionally complement the use of gestures by teachers and students. This iterative and dialogic process of cumulative, purposeful cycles of utilising speech and gesture in the reading classroom will facilitate meaningful meaning-making experiences. In addition, teachers should also facilitate output production (in the form of student performances – see thematic extracts in chapter 4). This creates an opportunity for students to recreate their reading in their own representations – most of which would be done with the use of some kind of dramatizations, gestures and kinesthetic experiences. This can be done by encouraging learners' reactions, working in different interactive formats and practising creative forms of oral (presentations, round tables, performances), encouraging learners to speak standard English, providing feedback on students' incorrect language use and stimulating peer feedback. Finally, teachers should facilitate students' use of gesture as strategies. This can be done by stimulating students to overcome problems in language comprehension and language production, reflecting on the use of gestures as scaffolding strategies while engaging in discussion around the reading text.

### **5.7.2 Future Research**

The results of the study, along with the implications for learners of English (as an L1 or L2) across the world, lead to a number of directions for future research: First, evidence from this study suggested that some students responded to the use of a gesture scaffold. Although the gesture seemed to alter the cognitive structuring of the inferences of their reading, this altered representation sometimes resulted in a self-repair, which was identified as the teacher as a trouble source. Future research should



include an analysis of trouble sources and repairs and gesture scaffolds for all various scaffolding strategies, in order to assess the influence of speech and gesture on the types of repairs, trouble sources and the scaffold gesture students would respond to and adopt on their own. Secondly, it would be interesting to teach the use of gesture scaffolds explicitly to either parctitioners/teachers of L1 and L2 learners and study how it impacts students' learning outcomes and achievement in their reading tests. Similarly, it would be even more exciting to teach students (all all levels and abilities) the use of gestures as a repair technique when engaging in small-group discussions. Broaders, Cook, Mitchell, and Goldin-Meadow (2007), taught third and fourth graders a specific gesture and then told the students to use that gesture while explaining how they solved mathematical equivalence problems. They found that students who were told to use the gesture added new and correct solution strategies, even though they were previously unable to solve the problems. Unlike Mathematics, the use of gesture in a language classroom to facilitate meaning making would be as 'restrictive', due to the very nature of the English language subject.

### **5.7.3 Limitations of Research**

A two-country international and cross-national comparisons research, the study offers the researcher an opportunity to be closer to the data. Aligned with the interpretivist metatheory (Babbie & Mouton, 2006), this in-depth 'case-oriented comparative' study is favourable to answering the 'what', 'how' and 'why' questions of the research. Thus, the problems of comparability and concept stretching (Sartori, 1970; 1984) - the distortion that occurs when a concept does not fit new cases, (e.g. in a quantitative study of many-country comparisons) are alleviated. Moreover, the findings will not be applied to develop broad generalizations explaining phenomena in countries not studied.

However, the small sample size remains as a primary limitation of the study. The teacher participants did not vary greatly in gender, ethnicity, age, prior education or prior experience. External validity threats may be present because of the small number of participants who were involved in the study and the lack of replication of the present study findings in other studies. Another limitation of the present study was the small number of lessons video-recorded for analysis. As these lessons were from units of work for a reading instruction selected by the teachers, some were

shorter than the others. In addition, in terms of the sampling strategy for the selection of thematic extracts, only teacher-fronted lessons were selected. This study's findings are unable to account for student-fronted activities like pair and group work. Therefore, most of the student-to-student interactions were not included. Also, as the data consisted of convenience and purposeful samples of the Singapore-based British international school and Singapore schools classrooms, these will not be representative of all similar classrooms in the UK or British international schools elsewhere and Singapore.

In terms of limitations in research focus, the most apparent is that only speech and the use of gestures are investigated in this study. Other semiotic resources contributing to the meanings in pedagogic discourse, such as intonation in language, movement and facial expression are not investigated. The lesson materials, such as the students' work, the teachers' writing on the whiteboard (if applicable) and the teachers' presentations or multimedia content are also not discussed. Moreover, the study focuses on a specific topic on reading instruction and thus the findings would not be applicable for other subjects like humanities and the sciences, where content reading instruction may be present. While the scope of this study is limited, the extent of delicacy and depth required in such a multimodal research requires a thorough, largely qualitative, analysis of small-scale data. This is also compounded by the rigorous annotation and multimodal analysis required. The narrow focus may make the generalisability of the results to the profile of the teacher based on gender or experience limited. However, the purpose of this study is to invite introspection and consideration of how the combination of pedagogic discourse involving varied semiotic resources, like speech and gestures, may facilitate student meaning-making experiences and deepen student understanding.

When exploring any pedagogic discourse, a great emphasis is placed on the transcripts and analytical model, especially when the pedagogic discourse is multimodal in nature. However, it is noted that one must bear in mind, when working with transcripts, that the process and product of transcription is interpretive and a social construction (Lapadat & Lindsay, 1999). Thus, as Silverman (2001) reminds, one cannot assume that transcripts, which do not record details, such as length of pause, are automatically "clean". It is not possible for one to produce a perfect,

pristine, or clean(er) transcript of a video recording - just a different one. The researcher realizes that the adopted choice of multimodal transcription, in part, depended on the research questions. It did take a very long time to get relevant thematic-based extracts with the accompanying screenshots of actual classroom 'scenes'. In addition, presenting the data (speech and use of gestures) in a manner that is meaningful to the reader was also a challenge. What was intended to be done with the analysis, as well as the practical considerations involving resources and time available, are key factors that influenced the study's methodology.

The attempt to add a quantitative element to the analysis highlighted the rigour in the analysis of the data. While the introduction of specific codes, for example: counting of instances where there is evidence of close or open question, iconic or beat gesture, and scaffolding strategy, allowed the researcher to answer the research questions meaningfully, the process of coding the data had not gone through any inter-coder reliability. The researcher did attend training of coding video-recorded lessons while involved in the large-scale research project, Core 2, in which the secondary source of data for the Singapore classrooms were used. This provided the researcher with the knowledge of identifying and coding specific items similar to the ones used in this study. Nevertheless, if the study were to be implemented again, the researcher would account for multiple coders and the consideration of inter-reliability between them.

In sum, CA turned out to be a highly suited methodological approach for the analysis of meaning making discourse through topic initiations/invitations and repairs. This is unlike most other approaches, which content themselves with studying topical/repair instances only as isolated data. In this study, topic/repair analysis forms a crucial component of studying the effective utilisation of scaffolding principles in reading instruction. Repair and topic are largely situated in its interactional context, and this 'reading instruction' context must therefore be taken into consideration each time an instance of repair or topic is analysed. However, the researcher realises that it is also important to consider instances of non-repair, which warrants a dynamic approach and an analysis from the perspective of the interlocutors – both teachers and students, and not the researcher.

## Chapter Six

### 6.0 Importance of Study

In terms of extending the frontiers of knowledge, it is expected that the research would be important in the following ways. In contrast to existing gesture studies conducted in Math and Science classrooms, this study is conducted specifically in reading instruction within L1 and L2 settings. Furthermore, rather than searching the theoretical and empirical literature to identify elements that make a difference in general classroom talk, the study starts from the ground of a distinct learning environment to identify instructional efforts or features of reading instruction that may facilitate or impede the utilisation of semiotic resources for meaning making and deeper understanding. More importantly, a new model of multimodal approach to scaffolding is offered to reflect dialogic teaching and learning - where teachers' and students' use of gesture complement the formulation of scaffolding strategies to facilitate meaning making and deepen understanding. (See Figure 16 in Chapter 5)

The study's contributions to knowledge cover two areas. First, a redesigned framework of multimodal approach to scaffolding, employing effective teacher utilisation of multisemiotic resources (speech and use of gestures) is offered. As Reiser and Dempsey (2002) highlight, there is very little high quality empirical literature to support the contribution of instructional design to effective instruction. Thus, this study aims to develop teachers' professional learning as task designers of reading instruction - where teachers are able to utilise multisemiotic resources (speech and gestures) within the "context of scaffolding in the classroom" (Alibali and Nathan, 2005), such that there is "effective coordination of strategies, tools and activities occurring at different social levels" (Fischer and Dillenbourg, 2006). This study promotes the multimodal approach to pedagogic discourse, focusing on mediation of multisemiotic resources. Also, the multimodal approach entails exploring the interactions and interplay across semiotic resources in the constellation of meanings made.

Second, anecdotal evidence from this study suggested that students responded to teacher's 'gesture scaffold'. With the trouble source identified, the teacher was able to provide an other-initiated-repair employing the use of gestures to complement

language used during scaffolding strategies. Furthermore, students experience successful self-repairs when given the opportunity to use gestures in demonstrating their understanding and facilitating their meaning making in the classroom. Thus, in extending the theory of scaffolding and language learning, this study presents evidence that non-verbal resources (e.g. use of gestures) can be successfully employed as repairs during pedagogic discourse of scaffolding. In addition, this study highlights the use of ‘other-initiation strategies’ (Radford, 2010), like variations of prompting, hinting and even demonstrating. More importantly, it highlights that other semiotic resource like the use of gesture is crucially employed in the classroom, as do verbal elements (Radford & Mahon, 2010).

### **6.1 Conclusion**

Reflecting on the findings of the study, it is believed that this study’s line of enquiry will provide opportunities to move from a description of the structure and meaning-making potentials of multimodal semiotic resources, to a detailed description of how teachers and students can and do use those potentials in reading comprehension instruction settings, and on to a close study of how teachers and students differently ‘configure’ and put to work multimodal semiotic mediation in their meaning making experiences. The fields of multimodality, scaffolding and classroom talk particularly in reading comprehension instruction individually may have a noteworthy corpus of literature. However, there is a gap in the literature of studies that draw a relationship between the fields, which this study aims to address.

Alexander (2008) emphasised that talk, which in an effective and sustained way should engage children cognitively and scaffold their understanding, is much less common than it should be. He highlighted that teachers rather than learners control what is said, who says it and to whom. In fact, it is teacher rather than learner does most of the talking (p. 93). In moving towards *dialogic* interactions and *effective* teaching practices, this study provides clear evidence that there is potential in gradual release of power and control by the teacher, such that student autonomy is encouraged. In elucidating the evidence of effective teacher practice in this study, echoing Hattie’s (2012) definition of *effective teaching*, the findings suggest that the support provided by a teacher can be timely, in a classroom culture of safety and success. Learning can become an interactive partnership between teacher and student

(Hattie, 2012).

Indeed, there has not been a defined and strategic approach to support the pedagogical effect of multisemiotic discourse for teachers to adopt effectively (Sen, 2010). Given the gap in literature specifically addressing the mediation of multimodal resources in relation to English language learning and reading instruction, more empirical exploration as discussed in chapter five is needed; particularly in the promotion of desirable pedagogical effects for practitioners' uptake and professional learning.

**END**

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## **Appendix 1: Core 2 Research Programme Project Details**

### **TITLE OF RESEARCH PROJECT:**

**(PROJECT NUMBER: OER 20/09 DH) Core 2 Research Program**

#### **1.1 ABSTRACT**

In broad terms, the central objective of the Core 1 programme of 2004/07 was to measure and model pedagogical practice and student learning in a representative sample of Singaporean primary and secondary schools. Core 1 consisted of six Panels, of which four (Panels 2, 3, 4 and 5) were centrally concerned with pedagogical practice and classroom processes. Four panels (1, 2, 5 and 6) focused on student outcomes. Core 1 findings showed that teachers' pedagogical approaches lean more towards the traditional mode of teaching and learning. Moreover, their day-to-day instructional activities and assessment tasks tended to focus on the drill-and-practice of basic knowledge and skills. The intellectual quality of knowledge work has a statistically significant relationship with the intellectual demands of teachers' assessment tasks. However, these findings reflected teachers' instructional, pedagogical, and assessment practices prior to the launch of the Teach Less-Learn More (TLLM) initiative. The Core 2 programme proposes to focus now on just three Panels: pedagogical beliefs and practices (Panel 2-2), instructional (Panel 2-3) and assessment practices (Panel 2-5).

As background to the present proposed pilot study, the Core 2 programme has six key objectives:

1. Measure, map and model pedagogical practice in Singapore, including the definition of learning goals, the organization of classroom activity, the nature of the enacted curriculum and assessment practices, the use of instructional strategies, the nature of the classroom learning environment, the intellectual quality of knowledge work in the classroom, and the structure of classroom interaction and discussion.
2. Determine similarities and differences in the pattern of pedagogical practice between the Core 1 and the Core 2 findings, including establishing whether there is greater variance in the pattern of pedagogical practice as a consequence of the TLLM implementation model, and attempt to specify the

extent to which any differences can be accounted for by the impact of recent policy initiatives on pedagogical practice.

3. Model the impact of pedagogical practice on cognitive, meta-cognitive and “non-cognitive” student outcomes. Despite our efforts to design multiple and overlapping measures in the Core 1 Programme, we had to rely, in the end, on two independent approaches to establish the relationship between teaching and learning: multilevel modelling of cross sectional data on classroom practice and student learning (Panel 2), and a correlation study of the relationship between the intellectual quality of teacher assessment tasks and the quality of student work generated as a result (Panel 5). While we plan to include (and improve) Panel 5, we intend to alter the design of Panel 2-2 in substantial ways to facilitate both value added (using gain scores) and longitudinal growth modelling. In addition, we intend to ensure proper integration of the three data sets across the Core 2 panels to enrich the analysis in ways that proved impossible in Core 1.
4. Further develop our understanding of the logic of teaching in Singapore: Why do teachers teach the way they do? What is the relative impact of student background and orientations to teaching and learning? What are the effects of teacher training and orientations, including their commitment to “vernacular” or “folk” pedagogies on teaching and learning? How do the prescribed curriculum, the assessment system, and the complex and ever changing contingencies of the classroom situation, impact teaching and learning? How do classroom size, school resources, and the pressure from parent and public opinion on school staff to teach in particular ways, affect teaching and learning? Good answers to these questions are necessary to support an intervention program focused on improving the quality of teaching and learning.
5. Develop a comprehensive and well-documented video library of unusually effective pedagogical practices in Primary 5 and Secondary 3 Mathematics and English classrooms, and to make this library available for pre-service and in-service teacher training purposes. While the Core 1 mix of survey, classroom observation, tape recordings of oral exchanges and collection of assessment artefacts permitted construction of a rich picture of pedagogical practice, it did not enable us to generate point-able models of effective

practice that could be used in pre- and in- service teacher education programmes. The use of videography, supplemented by teacher interviews and careful analysis of classroom interactions and conversation in the Core 2 program, will enable us to record effective practices and use them in pre-service and in-service teacher training programmes.

6. Draw on the results of its research programme to propose a series of interventions designed to improve the quality of teaching and learning in Singaporean classrooms and promote evidence-based pedagogical practice in schools. This objective directly parallels one of the key objectives of the Core 1 program that resulted in the design and implementation of a series of interventions across the curriculum between 2005 and 2007.

The Core 2 programme intends to make significant improvements in the quality of our understanding of pedagogical practice through better research designs and instrumentation.

However, there is a pressing need to begin trialling and refining the Core 2 instrumentation now before the attention of teachers turns in the latter parts of Term 3 and the majority of Term 4 to test preparation, and the marking and moderation of exam scripts. The present proposed study is designed, therefore, to provide essential methodological groundwork in the key areas outlined above in advance of the submission of a substantial Tier 3 grant proposal for the main Core 2 research programme.

## **1.2 RESEARCH PROJECT OVERVIEW:**

The Core 2 Research Program is composed of three separate but interrelated projects:

- The **Panel 2** project, based on a stratified random sample of all Primary 5 and Secondary 3 English and Mathematics classes in 63 Primary and Secondary schools and consisting of two separate surveys of students, two assessments of students in Mathematics and English, and a survey of teachers in all the schools in the sample, including teachers whose students we sampled in Primary 5 and Secondary 3 classes (n=62 schools, 454 Classes, 16,895 Students, 2,100 teachers)

- The **Panel 3** project, based on a subsample of the Panel 2 sample of schools (n=31), focusing on the videography, coding and analysis of 624 lessons across 117 units of work in Sec 3 and Primary 5 Mathematics and English
- The **Panel 5** project, based on the same subsample of the Panel 2 sample of schools as the Panel 3 sample (n=21), focusing on the collection, coding and analysis of a representative sample of teacher tasks and student work and the qualitative analysis of 115 teacher interviews (n=385 teacher tasks, 2,897 student work, 115 teacher interviews, 209 surveys)

The principal objectives of this report are to report the initial efforts of the Core 2 research team to measure, map and model the pattern of instructional practice in Secondary 3 Mathematics and English classes in Singapore, to identify and evaluate the underlying assumptions about the nature of instruction, to measure and explain changes in instructional practice, such as they are, since the *TLLM* initiative in 2004/05, to identify what instructional practices promise substantial improvement in the quality of teaching and learning in Singapore, and to construct a general conceptual model of instructional practice as a pedagogical system.

### **Key research Questions**

- How do teachers teach in Singapore?
- Why do they teach this way?
- To what extent has pedagogical practice changed since the introduction of *TLLM* in 2005?
- How well does the enacted curriculum match the prescribed curriculum in English and Mathematics?
- How strong is -- and what determines -- the intellectual quality of teaching and learning in Singapore?
- How strong is the effect that teachers and teaching have on student achievement?
- What factors constrain the capacity for instructional improvement?
- What pedagogical and enabling reforms are indicated by Core 2 findings to be necessary to improve the quality of teaching and learning in Singapore?

## Appendix 2: Singapore Coding Scheme 2 (SCS2) Scale Names and Passes

Pass	Scale No.	Scale Name
1—Framing the Lesson	1	Framing
	2	Lesson Topic/s and Lesson Learning Objectives
	3	Instructional Activities
	4	Resources/Tools: Teachers
	5	Resources/Tools: Students
	6	Teacher Communication
	7	Activity Type
	8	Subject Scope of Activity
	9	Text Production
2—Framing Instructional Activities	10	Checking for Background Knowledge and Understanding
	11	Classroom Interaction: Whole Class Discussion
	12	Classroom Interaction: Small Group Work
	13	Monitoring
	14	Feedback
	15	Learning Support
	16	Locus of Epistemic Authority
3—The Intellectual Quality of Classroom Knowledge Work	17	Student Agency/Co-Regulation
	18	Learning Tasks: Student Learning Activities
	19	Generic Focus of Knowledge Work
	20	Domain-Specific Knowledge Focus
	21	Cognitive Demands/Cognitive Processes
	22	Domain-Specific Instructional Activities
	23	Domain-Specific Disciplinary Practices/Knowledge Work
	24	Tasks: Purposes, Prior Knowledge, Outputs, Standards and Norms
	25	Knowledge Representation
	26	Discursive Agency
	27	The Epistemic Focus and Social Organisation of Classroom Work
	28	Epistemic Pluralism and Deliberation

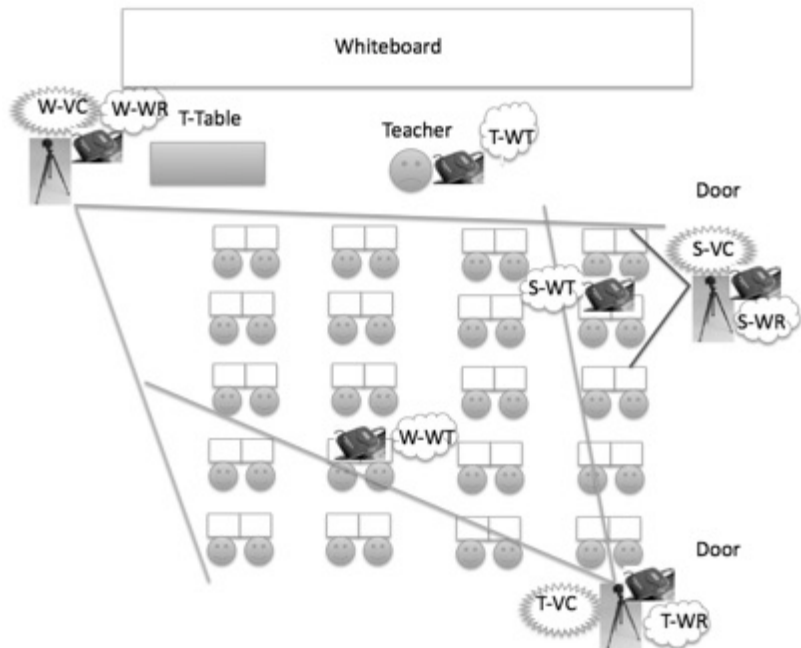
(Towndrow, Hogan, Abdul Rahmin & Kwek, 2012)

Core 2 Research Project: Pedagogy and assessment, Panel 3, The provision and use of learning support in Mathematics and English classes at P5 and S3 levels



### Appendix 3: Video Recording Protocol

Set up the video recorders in the following manner except for special circumstances.



**Figure 3. Classroom Setting**

**\*Note**

1. W-VC: Whole-class Video Camera
2. T-VC: Teacher Video Camera
3. S-VC: Student Video Camera
4. W-WT: Whole-class Wireless Transmitter
5. T-WT: Teacher Wireless Transmitter
6. S-WT: Student Wireless Transmitter
7. W-WR: Whole-class Wireless Receiver
8. T-WR: Teacher Wireless Receiver
9. S-WR: Student Wireless Receiver

*Part 1: Whole-class Video Camera (W-VC)*

Classroom setup (< 2 minutes):

- 1) This camera focuses mainly on the whole class (W-VC) and captures as much of the classroom as possible to get a full picture of the class. It remains stationary throughout the lesson and is **not operated** by the S-RA during lesson recording.
- 2) **S-RA** positions the W-VC at the front corner of the classroom (*by default it should be near the teacher's table, see Figure 3; but it could be on the other side near the front door if there is no space on the T-table side*).
- 3) Pan W-VC slowly from left to right, then right to left to get an overview of the classroom.
- 4) Ensure the W-VC captures as much of the classroom as possible.
- 5) Double check that the W-VC is recording and let it run for the entire lesson; leave the W-VC unattended.
- 6) Place whole class wireless transmitter (W-WT) around a group of students sitting around the middle of the classroom (*see Figure 3*).
- 7) Then, set up the S-VC.

*Part 2: Teacher Video Camera (T-VC)*

Classroom setup (< 2 minutes):

- 1) This camera focuses mainly on the teacher (T-VC).
- 2) **T-RA** positions the T-VC diagonally across the teacher's table at the back of the classroom (*see Figure 3*).
- 3) T-RA hands the pouch with teacher wireless transmitter (T-WT) inside to the teacher. The microphone may be attached to the teacher's top or to the pouch lanyard, whichever the teacher prefers.
- 4) **T-RA** takes position behind the video camera and waits for the teacher to start the lesson.

At the start of the lesson; during whole class lecture; answer checking; or demonstration:

- 1) By default, the T-VC tracks the teacher's movements, including the teacher's medium of presentation in the front of the classroom (e.g., whiteboard or projector). This camera covers at least, the front half of the classroom.
- 2) Try to keep the teacher in the centre of the frame, but **do not zoom in** if the teacher is standing in front or walking around, or doing the talking, without writing anything on the whiteboard or presenting anything on the projector.
- 3) **Zoom in** to capture what the teacher is writing on the whiteboard or presenting on the projector. (The idea is to capture the 'teaching' not the 'teacher'!)
- 4) Pan the T-VC to follow the teacher if he/she is moving around the classroom, but **do not zoom in** if he/she does not talk to any individual student or does not show/write anything.

During individual seatwork; pair work; or group work:

- 1) T-VC continues to track the teacher's movements.
- 2) Pan T-VC when the teacher walks from student to student. If he/she stops and talks to an individual student or to a group of students, **zoom in** to include the teacher and the students around him/her. This is to capture teacher-student interactions.
- 3) **Zoom in** if the teacher is writing or showing anything to the students around him/her.

*Part 3: Student Video Camera (S-VC)*Classroom setup (< 2 minutes):

- 1) This camera focuses mainly on a particular group of students (S-VC) throughout the lesson. This is to capture student-student interactions and student-produced work.
- 2) **S-RA** positions S-VC near a group of students (say, 4-5 students), whether there is group work or not. S-RA may choose to focus on any group of students, but should stick to the same group throughout the lesson, and if possible, throughout the unit.
- 3) **Zoom in** the camera to include all the students in the chosen group.
- 4) Place student wireless transmitter (S-WT) around this group of students (*see Figure 3*).
- 5) **S-RA** takes position behind the video camera and waits for the teacher to start the lesson.

For the entire lesson:

- 1) S-VC focuses on the chosen group of students sitting around student wireless transmitter (S-WT) and captures what they are doing and talking about during the lesson (either in whole-class, individual seatwork, pair work or group work setting).
- 2) Zoom in S-VC to capture any page(s) on textbook or any handout that is being referred to by the teacher, or any work produced by this group of students or by an individual student in this group during the lesson (either in whole-class, individual seatwork, pair work or group work setting).
- 3) S-VC captures any talk by this group of students during the lesson (either in whole-class, individual seatwork, pair work or group work setting).

## Appendix 4: Lesson Frame Summaries

### 4.1 Singapore Secondary-level Reading Instruction – Lesson Frame Summary

This section aims to capture a Lesson Frame Summary of the reading comprehension instruction unit of work for the Secondary-level (15-year old students) Singapore classroom. The following table shows the unit's lesson topics, skills taught and lesson objectives.

	Lesson Topic	Skills Taught/ Concepts Discussed	Lesson Objectives	Summary of Classroom Activities
<b>Lesson 1</b> <b>(56:00)</b>	Reading Compre (DQ & VQ)	<i>Skill:</i> Scanning for specific information <i>Concepts:</i> a. Direct Questions (DQ) - who, when, where, what, which, how, why b. Vocabulary Questions (VQ) - explain the meaning of a word or quote a word	a. To identify specific types of questions in a reading passage	<ul style="list-style-type: none"> <li>- Whole class – T reviews types of comprehension questions in reading passages through exposition and IRE.</li> <li>- Whole class – T leads into the topic (a passage about a running race) by sharing a photo of a school sports day.</li> <li>- Individual – Ss read the passage silently.</li> <li>- Whole class – T reviews the steps of identifying D-V (direct and vocabulary) questions through exposition and IRE.</li> <li>- Individual – Ss highlight the part that they think is the answer to a sample question.</li> <li>- Pair – Ss discuss with a partner how they will structure their answer.</li> <li>- Whole class – T checks on Ss' answers and explains.</li> </ul>
<b>Lesson 2</b> <b>(59:30)</b>	Reading Compre (IQ)	<i>Skill:</i> Making inferences <i>Concept:</i> a. Inferential Questions (IQ) - Contextual clues	a. To process and comprehend at an inferential level b. To dissect a reading paragraph	<ul style="list-style-type: none"> <li>- Whole class – T reviews previously learnt reading skills</li> <li>- Group – Each group chooses a paragraph and make use of the contextual clues to figure out what the paragraph is about.</li> <li>- Group – Group leaders stay and share their understanding of the paragraph with other groups while other members move from group to group to hear what the other six group leaders say about the other six paragraphs.</li> <li>- Whole class – T elaborates on the three things (contextual clues, topical sentence, reading the 1<sup>st</sup> paragraph) Ss to learn in the lesson.</li> </ul>
<b>Lesson 3</b> <b>(59:45)</b>	Reading Compre (main idea)	<i>Skill:</i> Summarizing main idea	a. To dissect the text b. To check whether students have understood the passage by answering the questions correctly	<ul style="list-style-type: none"> <li>- Whole class – T goes through with Ss the reading passage (the main idea of each paragraph and the meaning of some words) through exposition and IRE.</li> <li>- Individual – One question is assigned to each group, but Ss work individually to tackle the assigned question.</li> <li>- Whole class – T goes through with Ss the answers through exposition and IRE.</li> <li>Whole class – T reviews what Ss have learnt in this lesson (summarizing main idea of paragraph).</li> </ul>
<b>Lesson 4</b> <b>(62:20)</b>	Reading Compre (practice)	Review all skills	a. To read a compre passage purposefully b. To check whether students	<ul style="list-style-type: none"> <li>- Whole class – T briefly reviews the passage Ss read in previous lesson by asking a student to summarize it, and then checks on Ss' answers.</li> <li>- Whole class – T asked 4 Ss to write their answers to questions 7-12 on the whiteboard and another 4 Ss to mark the answers.</li> </ul>

			have understood the passage by answering the questions correctly	- Whole class – T goes through with Ss the answers to the questions (Qs 7-12) through exposition and IRE.
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#### 4.2 British international school Secondary-level Reading (Literature) Instruction – Lesson Frame Summary

This section aims to capture a Lesson Frame Summary of the reading (Literature) instruction unit of work for the Year 10 (15-year old students) classroom of a Singapore-based British international school. The following table shows the unit’s lesson topics, lesson objectives and classroom activities.

	Lesson Topic	Skills Taught/ Concepts Discussed	Lesson Objectives	Summary of Classroom Activities
<b>Lesson 1</b>	Understanding Motif and Duality	<i>Skill:</i> Scanning for specific information <i>Concept:</i> Motif, Duality	To develop and demonstrate understanding of the motif of life’s inherent duality in <i>Romeo and Juliet</i> .	<ul style="list-style-type: none"> <li>• Watch Lhurman film version of scene</li> <li>• Students will discuss how character and duality is portrayed in pairs.</li> <li>• Pairs will then feedback to their tables.</li> </ul> <p><i>Questions discussed:</i> How has Shakespeare explored the theme of life’s inherent duality so far in the play:</p> <ol style="list-style-type: none"> <li>1. In the language used (paradox/oxymoron/juxtaposition/imagery)?</li> <li>2. In contrasting characters?</li> <li>3. In contrasting features of dramatic genres?</li> </ol>
<b>Lesson 2</b>	Theme: Understanding Fate	<i>Skill:</i> Making inferences <i>Concept:</i> Theme	To continue to develop an understanding of the important role of fate in the play.	<ul style="list-style-type: none"> <li>• Read Friar Laurence’s opening speech, count number of contrasts set up.</li> <li>• Each student will be given a card with an image on it, they will then need to find the quotation from the speech that describes it. Once they have done this and fed back, they will write their quotation on the card.</li> <li>• Students will then need to find their partner (the person on their table with the opposing card).</li> <li>• Once everyone is paired, students will play memory with the cards in table groups.</li> </ul>
<b>Lesson 3</b>	Character Analysis: Friar Laurence, A tragic agent	<i>Skill:</i> Making inferences <i>Concept:</i> Tragic Agent	To introduce and begin to appreciate the significance of Friar Laurence as a character and a tragic agent in the play.	<ul style="list-style-type: none"> <li>• Read act 2 scene 3.</li> <li>• Students will answer questions on Friar Laurence’s character. (linking/contrasting him with the neutral Prince Escalus, identifying him as a wise/mature character)</li> <li>• Students will rewrite one of his gnomic saying from the scene in contemporary English.</li> <li>• Understand and note down definition of Aristotelian Mean.</li> </ul>

#### 4.3 Singapore Primary-level Reading Instruction – Lesson Frame Summary

This section aims to capture a Lesson Frame Summary of the reading instruction unit of

work for the Primary Five (11-year old students) Singapore classroom. The following table shows the unit’s lesson topics, skills/concepts taught and learning objectives.

	<b>Lesson Topic</b>	<b>Skills Taught/ Concepts Discussed</b>	<b>Lesson Objectives</b>
<b>Lesson 1</b>	- Fractured fairy tales from a learning package “Seriously Twisted Tale” - Vocabulary	- Genre of a Fairy Tale, Formats of Fairy Tale – narrative play/readers’ theatre. - Semantic Web – Semantics, a study of words, categories of words (classifications like professions, actions, etc.) - Word play like homophones, idioms, antonyms - Features of Narrative texts	- To create a semantic web of words found in a reading text - To familiarize students with the features of a narrative play - To complete a vocabulary worksheet on idioms, antonyms and homophones
<b>Lesson 2</b>	- Fractured fairy tales from a learning package “Seriously Twisted Tale” - Vocabulary - Writing - Grammar: tenses	- Genre of a Fairy Tale, Formats of Fairy Tale – narrative play/readers’ theatre. - Semantic Web – Semantics, a study of words, categories of words (classifications like professions, actions, etc.) - Word play like homophones, idioms, antonyms - Features of Narrative texts	- To write a summary (retelling) of a narrative play the students had read in the previous lesson - To recap rules of grammar (e.g., tenses, conditional [if], modal verbs) - To discuss and plan in a group a chosen fractured fairy tale (narrative play)
<b>Lesson 3</b>	Fractured fairy tales – students’ performances	- Clarity, confidence and articulate presentation - Sound effects and dramatic actions to engage the audience - Subject-verb agreement, subject-object, prepositions, direct-indirect speech (synthesis & transformation)	- Students to perform their versions of twisted fairy tales
<b>Lesson 4</b>	Fractured fairy tales from a learning package “Seriously Twisted Tale”	- Features of fractured fairy tale; plot, storyline, character, resolution, setting, descriptive language - Grammatical items; homophones, - Features of a good narrative; similar to that of the fractured fairy tale. - Vocabulary item: metaphor, personification	- To recap the features of fractured fairy tales - To recap the features of a good narrative - Students to plan for a narrative using a mind map and employing the use of descriptive language
<b>Lesson 5</b>	Fractured fairy tales from a learning package “Seriously Twisted Tale”	- Use of descriptive language - Character analysis	- To recap the story “A Seriously Twisted Tale” - To use character analysis to compare the characteristics of “Leaping Beauty” (a fractured fairy tale) with the original “Sleeping Beauty”

#### **4.4 British international school Primary-level Reading Instruction – Lesson Frame Summary**

This section aims to capture a Lesson Frame Summary of the reading instruction unit of work for the Year 6 (11-year old students) classroom from a Singapore-based British

international school. The following table shows the unit's lesson topic, learning objectives, writing targets and Lesson One's classroom activities.

<b>Significant Authors – The Iron Man by Ted Hughes</b>	
<b>Learning Objectives</b>	<b>Writing Targets</b>
<p>1. <u>Speaking and listening</u></p> <ul style="list-style-type: none"> <li>- Use a range of oral techniques to present persuasive arguments and engaging narratives</li> <li>- Use the techniques of dialogic talk to explore ideas, topics or issues</li> </ul> <p>2. <u>Listening and responding</u></p> <ul style="list-style-type: none"> <li>- Analyse and evaluate how speakers present points effectively through the use of language and gesture</li> </ul> <p>3. <u>Group discussion and interaction</u></p> <ul style="list-style-type: none"> <li>- Understand and use a variety of ways to criticise constructively and respond to criticism</li> </ul> <p>4. <u>Drama</u></p> <ul style="list-style-type: none"> <li>- Consider the overall impact of a live or recorded performance, identifying dramatic ways of conveying characters' ideas and building tension</li> </ul> <p>5. <u>Understanding and interpreting texts</u></p> <ul style="list-style-type: none"> <li>- Understand underlying themes, causes and points of view</li> <li>- Understand how writers use different structures to create coherence and impact</li> </ul> <p>6. <u>Engaging with and responding to texts</u></p> <ul style="list-style-type: none"> <li>- Read extensively and discuss personal reading with others, including in reading groups</li> <li>- Compare how writers from different times and places present experiences and use language</li> </ul> <p>7. <u>Creating and shaping texts</u></p> <ul style="list-style-type: none"> <li>- Select words and language drawing on their knowledge of literary features and formal and informal writing.</li> </ul> <p>8. <u>Text structure and organization</u></p> <ul style="list-style-type: none"> <li>- Use varied structures to shape and organize texts coherently</li> </ul>	<p>Some children will not have made so much progress:</p> <ul style="list-style-type: none"> <li>- Begin to understand the concept of figurative language within texts</li> <li>- Discuss author's use of language and sentence structure for effect</li> <li>- Present their opinions to others using evidence from the text to support their answers</li> </ul> <p>Most children will:</p> <ul style="list-style-type: none"> <li>- Understand the concept of using figurative language</li> <li>- Discuss confidently the author's use of language</li> <li>- Recognise examples of similes, metaphors and onomatopoeia</li> <li>- Begin to use ambitious vocabulary to describe setting</li> <li>- Present their opinions to others using evidence from the text to support their answers</li> <li>- Begin to use emotional literacy to describe how a character from the text might be feeling</li> </ul> <p>Some children will have progressed further:</p> <ul style="list-style-type: none"> <li>- Explain the effect of language used by the author and its effect on the reader</li> <li>- Begin to use emotional literacy to describe how a character from the text might be feeling and use evidence from the text to justify their opinion</li> <li>- Blend quotations and references and link these to other points</li> </ul>
<b>Lesson 1: Immersion and Comprehension of Text</b>	
<b>Whole-Class Shared Session</b>	<b>Guided and Independent Activities</b>
<p>How well can I analyse an author's use of language and describe its effect on the reader?</p> <ul style="list-style-type: none"> <li>- 5 minutes reading – skim text and jot down initial thoughts and feelings (red hat). Share with the table (I agree with... because.. I feel)</li> <li>- 15 minutes reading – divide the text into sections and children prepare it using a sound scape – have a whole-class reading (green hat).</li> <li>- Explain to the children that Ted Hughes uses lots of different effects to engage the reader into the story and draw them in. We are going to analyse how he has done this and aim to replicate it in our writing.</li> </ul>	<p>Character Focus: Where do you believe the Iron Man is from? Who made him? Use evidence from the text to think of a history for him (red hat, black hat)</p> <p>Language Focus: What figurative language has been used? What effect does it have on the reader? Why has Hughes made those comparisons? (green hat – think of alternative similes)</p> <p>Sentence Structure: Short sentences. Openers. Repetition. What atmosphere has been created? (black hat)</p> <p>Setting vocabulary: Be creative and come up with figurative language to describe the setting of what they believe the Iron Man would have seen. (green hat)</p>

## Appendix 5:

### **Background Literature on The Role of Talk and Reading Instruction in English as First Language (L1) and English as Second Language (L2) classrooms**

As this study seeks to explore the use of semiotic resources in the selected Singapore-based British international school and Singapore schools classrooms, it is necessary to contextualize it within the body of research on English as a first language (L1) learners and English as a second language (L2) learners. Although English language is taught as a first language, many Singaporean students' home or first language is not English (Sen & Towndrow, 2014; Kwek, Albright, & Kramer-Dahl, 2007). In contexts in which English is the dominant language such as the UK, there have been striking increases in the number of students who speak a primary language other than English and are thus learning to read English as a second language (Roberts, Christo & Shefelbine, 2011). While the majority of the students in some UK schools are native English language (L1) speakers, a number of students, who are children of immigrants, learn English as L2. This essentially means that a large number of UK students are bilingual. In an article by The Telegraph (2012), it is reported that one in six students in primary schools and just over one in eight in secondary schools do not have English as their first language. In fact, the number of primary school children who speak English as a second language in England is increasing by about 1% each year and according to these estimates within about 10 years, one-quarter of all primary school students will be non-native speakers of English (Statistical First Release, 2011). Most of the studies referred to so far are concerned with reading in monolingual Western English-speaking countries (e.g. Pressley, 2002; National Reading Panel, 2000; Saunders & Goldenberg, 2007; Biemiller, 2004). However, many of the generalisations emanating from such research also apply to an extent to Singapore, where it is hoped that students will leave school competent both in their mother tongue (Chinese, Malay, Tamil languages) and in English. Such rapidly changing demographic trends prompt the calls for more nuanced investigations to address the current gaps in the understanding of reading instruction between L1 and L2 learners.

The Progress in International Reading Literacy Study (PIRLS) 2011, adopted a sophisticated model of reading comprehension and focused on the assessment of

children's comprehension skills and strategies. One of its intentions was to allow educators in different countries to see how well students in their schools were performing when their reading attainment was compared with that of children of the same age in other countries. PIRLS 2011 was based upon the performance of primary-school children in thirty-five countries or national regions. The assessment of reading ability is based on constructed-answer responses and multiple-choice items and requires extensive testing time due to the large set of test items. The international coverage of the study not only enabled comparisons among different countries, it also provided opportunities for researchers to assess the reading performance of primary-school students from a cross-cultural perspective. Therefore, it is interesting to refer to the data from PIRLS 2011 to compare the level of reading attainment of students in the UK against that of students in Singapore. The vast majority of Singaporeans share a similar Chinese language and cultural origin. Singapore was once a British colony and has been influenced by the British education system for many years. A comparison of primary students' reading attainment in Singapore and the UK will hopefully throw light on the reading performance of students and how it is influenced by the cultural characteristics of the groups studied.

The findings indicate that the mean reading achievement score of the English students in the UK is relatively higher than that of the Singaporean students. As far as reading attitude and confidence are concerned, the analysis of the mean statistics at item level indicates that Singaporean students tend to enjoy reading, with a stronger positive attitude than their English counterparts. These results seem to reflect that students in the Eastern culture tend to have more positive attitudes to reading than their English counterparts (Tse et al, 2006). In terms of reading attainment, the English students achieved higher mean scores in the overall achievement tests. The English students generally had higher mean scores in literary and informational achievement tests while Singaporean students are weak in terms of literary achievement. In fact, reading attainment for both literary and informational purposes, Singapore performed relatively better than 15 countries. Singapore, at 43%, was one of only four countries in which less than half of their students "always" or "almost always" spoke the language of the test at home. Despite the status of English as a non-native language for the majority of Singaporean students, Singapore's scores compare favorably to countries, including the UK, in which the majority of students



speak the language of instruction at home. Therefore, these results show that there are no key differences in reading achievement for the two groups studied.

English students do well on reading tests, both at 'reading for literary purposes' and at 'reading to acquire and use information' (Twist, Sainsbury, Woodthorpe & Whetton, 2003). Second, according to Gregory and Clarke (2003), the Singaporean education system is characterised by being ability-driven, with students streamed: it is performance-based, has a clear political ideology and good resources. It also values teachers, innovation and sensible education policies. To a certain extent these qualities may contribute to the good performance of the Singaporean students in terms of reading attitudes and confidence (Mullis, Martin, Gonzalez & Kennedy, 2003). The English students' better performance may derive from educational factors. For example, child-centred approaches are features of the English system, and the National Curriculum in English schools provides clear guidelines to teachers about expected student performance standards at each stage of their education (Silvernail, 1996). Their performance in the PIRLS exercise may also be associated with the nature of the language test (Twist, Sainsbury, Woodthorpe & Whetton, 2003). Besides, formal instruction in reading commences earlier in the UK when compared to most European countries (Hanley, Masterson, Spencer, & Evans, 2004).

Research pinpoints a variety of instructional contexts and practices that facilitate English L1 learners' acquisition of higher level thinking and discourse skills. One theme consistently emerges: opportunities to talk – to engage in frequent and sustained discussion with the teacher and other learners around text, topics, and problems of concern to L1 learners (Applebee, Langer, Nystrand, & Gamoran, 2003; Nystrand, 1997). Opportunities to talk – to negotiate both meaning and form, to reflect on one's understanding of the world and understanding of language – precipitate and cultivate language acquisition. Opportunities to talk are important for all students, including L1 learners. Boyd and Rubin (2006) underscore this point. As they explain, theory, research, and practice all converge on the conclusion that engaged and elaborated student talk in the classroom enhances student learning. Such articulate talk supports inquiry, collaborative learning, high-level thinking, and making knowledge personally meaningful. For second language learners (L2), talk

serves the same purpose as it does for L1 learners, but it is also a vehicle both for acquiring non-native communicative competence and for expanding linguistic repertoires in the students' new language (Boyd & Rubin, 2006, p. 142).

Swain (2000, 2005) explains how opportunities to talk facilitate language development. She challenged the idea that language development and speech are automatically driven forward through comprehensible input, as proposed by Krashen (1981). On the contrary, she proposed that to learn to speak, one must actually speak. Swain based this conclusion on her observations of Canadian children, all native speakers of English, learning French in an immersion context. She found that while they performed at levels of comprehension close to native speakers, the same could not be said of their production abilities. After six or seven years of instruction in French, they continued to make persistent errors when speaking and writing. Students received rich and comprehensible input, but had limited opportunities to engage in extended discourse. Swain reasoned that L2 learners can comprehend messages with basic word and world knowledge, but for language to move forward, they must produce language. The act of creating and expressing linguistic meaning and form requires learners to stretch their language skills and process language at a deep level with significant mental effort.

Gibbons (1998) underscores Swain's point. According to her, the degree to which a classroom is facilitative of second language learning depends largely on how classroom discourse is constructed. The studies imply that there must be a focus on extended opportunities for student talk. It is important, at times, for learners to have opportunities to use stretches of discourse in contexts where there is a 'press' on their linguistic resources, and where, for the benefit of their listeners, they must focus not only on what they wish to say but on how they are saying it (Gibbons, 1998, pp. 103-104). According to Swain (2000, 2005), as students produce language they engage in negotiation of both meaning and form. Many researchers (Ellis, 1999; Nakahama, Tyler, & van Lier, 2001) consider language negotiation critical to second language acquisition. When L2 learners produce a message, the listener does not necessarily understand it. The speaker must work to produce a comprehensible message, often in negotiation and collaboration with a more knowledgeable language other. Consequently, talk becomes a site where both L1 and L2 learners negotiate, practice,

and internalize language. More importantly, talk becomes part of the learning mechanism itself. Such negotiation of meaning in producing a comprehensible message is arguably an opportunity for learners to utilize semiotic resources, for a successful meaning-making experience. Thus, this supports the studies focus in the use of speech and gesture for a pedagogic discourse during a reading instruction.

The literature on the reading comprehension of L1 (monolingual) learners identifies two types of comprehension difficulties. Most of the research on reading difficulties has focused on poor comprehenders who are also considered poor readers due to deficient basic level processes (e.g., Genesee, & Geva, 2006; Lesaux, Geva, Koda, Siegel, & Shanahan, 2006). This type of reading comprehension difficulty primarily reflects significant word reading (i.e., decoding) problems. The second type of reading difficulty is considered a specific comprehension problem. These children have developed good word recognition skills but have poor comprehension. In fact, the Simple View of Reading framework, published in the Rose Report (2005), highlighted that these two components are essential for effective reading comprehension (Gough & Tunmer, 1986; Stainthorp & Stuart, 2008). When word reading ability and written vocabulary knowledge are controlled, poor comprehenders demonstrate deficits in higher-level skills relative to same-age good comprehenders. Impairments have also been found on measures of working memory (Yuill, Oakhill, & Parkin, 1989; Genesee, & Geva, 2006; Lesaux, & Geva, 2006). Research has found that such children experience difficulties at the text level rather than the word level. These readers often do not differ significantly from good comprehenders on the accuracy, speed, or automaticity of single-word decoding (e.g., Siegel & Ryan, 1989; Yuill & Oakhill, 1991). In a review of the research, Yuill and Oakhill (1991) noted that the problems of poor comprehenders arise when low-level processes are intact, but higher-level processes are required including inference making, working memory, and story structure knowledge.

Few studies have examined the comprehension skills of children who are ESL learners. The findings of the existing studies demonstrate contrasting results: one group of studies indicated that reading comprehension is an area of academic difficulty for ESL students, and that these children perform at significantly lower levels than their monolingual peers on measures of reading comprehension (e.g.,

Droop & Verhoeven, 2003; Low & Siegel, 2005; Verhoeven, 2000). Lesaux, Rupp and Siegel (2007) examined the reading comprehension of grade 4 students and found that there were no differences between the ESL and L1 on reading comprehension performance. Although in kindergarten the ESLs performed more poorly than the L1 speakers on several tasks of early literacy, by fourth grade, these differences had generally disappeared. Low and Siegel (2005) also examined the grade 6 cohort and the relative role played by three cognitive processes: phonological processing, verbal working memory and syntactic awareness in understanding the reading comprehension performance among L1 speakers and ESL speakers. The ESL speakers showed comparable performance on word reading, but lower performances on the Oral Cloze task, a measure of syntactic awareness in oral language. In addition, there were no differences between the two language groups on the experimental reading comprehension task that minimized the effects of vocabulary and prior knowledge. There was however differences between the groups on the standardized reading comprehension task and the L1 performed better than the ESL students. The Stanford Diagnostic Reading Comprehension Test (SDRT; Karlsen & Gardner, 1994) mean scores for both groups fell solidly within the average range (mean score of 58th percentile for L1 and mean score of 50th percentile for ESL), suggesting that ESL speakers are not at a disadvantage according to the normative criterion of the test. Despite differences in English oral proficiency between L1 and L2 English learners, the two groups perform at similar levels on measures of phonological processing and word-level reading skills (Lesaux, & Geva, 2006).

Interestingly, there are very few studies found comparing L1 and L2 learners in high schools or secondary schools and even fewer studies on reading comprehension skills development in L2 were available. Conducted primarily in the Netherlands (Lesaux, & Geva, 2006), the results of these studies indicated that the reading comprehension achievement of L2 students is well below that of their L1 peers. The overall difficulties that L2 students have with reading comprehension can be understood if one considers that their language skills in the societal (L2) language are not at par with their monolingual (L1) peers. Besides, they may not have relevant prior knowledge skills needed for comprehending and learning from the academic texts they are required to read. In addition, only very few studies examined the writing ability of L2 learners, and the results of these studies were rather diverse.

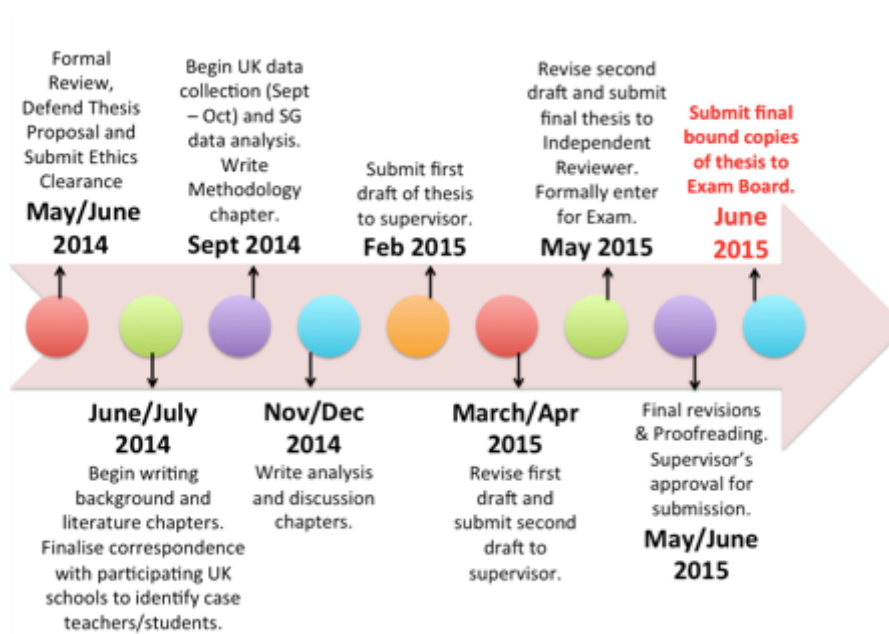
Studies that have examined L2 secondary-level reading skills are based on countries where English is learned as a foreign language in a non-English-speaking context and thus are not directly comparable to the current research (van Gelderen, Schoonen, Stoel, Gloop, & Hulstijn, 2007). Research examining L2 reading comprehension has focused on comparing performance of L2 with L1 learners in early childhood (e.g., Manis, Lindsey, & Bailey, 2004; Nakamoto, Lindsey, & Manis, 2008). However, this study seeks to examine talk around reading comprehension instruction at both the primary and secondary levels.

At present, with the exception of a notable few studies (e.g., Burgoyne, Kelly, Whiteley & Spooner, 2009; Burgoyne, Whiteley & Hutchinson, 2010), there is very limited research on L2 learners in England. So far, all these studies have reported a significant L2 disadvantage in English oral language and text comprehension skills. For instance, Hutchinson et al. (2003) followed 43 L1 and 43 L2 learners in England from 7 to 9 years of age and assessed their oral language and reading skills in English. There were no language group differences in word-reading accuracy levels at any testing point, but there was a significant L1 advantage on the measures of listening comprehension, reading comprehension, vocabulary and grammar across all testing times. In this study, aspects of oral language skills were significant predictors of both reading and listening comprehension (Babayigit, 2014). Further corroborating evidence for these findings came from a study on 46 L1 and 46 L2 learners by Burgoyne et al. (2009). In this study, although the L2 learners outperformed their L1 peers on the measures of word-recognition accuracy, they underperformed on the measures of vocabulary and text comprehension.


However, in at least one study, it has also been reported that there is L2 advantage on the measures of reading comprehension. Chiappe, Glaeser and Ferko (2007) found that Korean-English speaking L2 learners in the United States outperformed their native English-speaking peers on an English reading comprehension measure at the beginning of Grade 1 (6-year olds). Interestingly, in this study, the L2 learners performed very well on reading comprehension despite their relatively more limited English vocabulary skills.

Therefore, it is vital that the current study reported in this thesis seeks to explore the reading instruction across two contexts – Singapore schools and a Singapore-based British international school, at the primary and secondary levels. As explained in the research context of the study (see Section 1.1, pg. 16), the Singapore-based British international school and Singapore classrooms offer interesting observations of the study of English as L1 and L2. The comparative study does not simply seek to highlight similarities and/or differences, but to explore similar noteworthy findings found in both countries. Furthermore, this study contributes unique applications of multimodal transcription and conversation analysis to present its findings. Unlike other studies reviewed in this chapter, this study uses video-graphic evidence to propose a redeveloped dialogic scaffolding model with a unique focus on the use of gestures.

## Appendix 6: Research Timeline



## Appendix 7: Research Brief, Consent and Assent Forms

 <p>Leading education and social research Institute of Education University of London</p>	<p><b>Exploration of talk and gestures for dialogic scaffolding: A study of primary and secondary reading instruction</b></p>
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### Teacher consent form (Video recording)

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**We are pleased to invite you to take part in the above study. Please read the following carefully as it provides important information related to the study, in particular the objective of the study, the nature of your participation and your rights as a participant.**

**(a) Objective of the study:**

The study is part of a doctoral thesis under the Doctor in Education (International) programme at the IOE. The study aims to explore the use of semiotic resources; speech and gesture, for meaning making that takes place in reading comprehension primary (Year 6 – eleven year old) and secondary (Year 10 – fifteen year old) classrooms of a Singapore-based British international school and Singapore schools. The study will focus on the teachers and students’ ‘shaping’ of varied modes – speech and gestures, as part of the teacher’s scaffolding strategies used to support explorations in meaning making of the reading classroom.

**(b) Research Questions:**

**The key research questions of the study are:**

During meaning-making discourses in reading comprehension or literacy instruction,

- (i) What range of semiotic resources do the teachers employ?
- (ii) What evidence of contingency, fading and transfer of responsibility do the teachers demonstrate?
- (iii) What role does the use of gestures play in the teachers/students’ formulation of repairs?
- (iv) What impact does the use of speech and gesture have on students’ understanding of inferences from a reading text?
- (v) Are there any similarities and/or differences in the impact of the use of speech and gesture on students’ understanding of inferences from a reading text in the classrooms?

**(c) Benefits of the research:**

There are no financial benefits accrued to you as a result of your participation in this study. However, the researcher will be happy to share the study’s findings with you and your school once the research is completed. The researcher will also be willing to discuss any professional development sessions you may like to partake in (e.g.



workshop, seminar, dialogue). Furthermore, your contribution towards the research study will be acknowledged.

**(d) Your participation:**

Your lesson will be video-recorded for our research purpose. The researcher will view your recorded lesson, transcribe selected verbatim and capture screenshots of the lesson, which will be blurred to avoid any identification of individual(s). The study seeks to apply an analytical approach, informed by theories of scaffolding and gesture. Using multimodal transcription and qualitative analysis, the study will discuss linguistic and multimodal features of the pedagogic discourse between a teacher and her/his students, such that the multisemiotic teaching and learning experiences are explicated. The data will not be used to evaluate your performance.

**(e) Confidentiality:**


The data resulting from the study will remain confidential to the researcher, subjected to legal requirements. No printed publications will identify the participants of the study in any way. Information from this research will be used solely for the purpose of the study.

**(f) Voluntary participation:**

Your participation is entirely voluntary. We very much hope that you will agree to participate in this study, in which case, you should indicate your consent by completing both the attached copies and returning a copy to us. You should retain the other copy and the attached letter for your personal record.

We thank you and look forward to your participation.

Doctoral Candidate  
Doctor in Education (International) programme  
Institute of Education  
University of London

	Leading education and social research Institute of Education University of London	<b>Exploration of talk and gestures for dialogic scaffolding: A study of primary and secondary reading instruction</b>
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**Teacher consent form (Video recording)  
[Participant's copy]**

**Objective of the study:**


The study is part of a doctoral thesis under the Doctor in Education (International) programme at the IOE. The study aims to explore the use of semiotic resources; speech and gesture, for meaning making that takes place in reading comprehension primary (Year 6 – eleven year old) and secondary (Year 10 – fifteen year old) classrooms in a Singapore-based British international school and Singapore schools. The study will focus on the teachers and students' 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning making of the reading classroom.

- a. I have been informed about the nature of the study.
- b. I am willing to participate in the study.
- c. I am willing to allow the researchers to video-record my lessons.
- d. I understand that I will not be individually identified in any publications of the study.

I agree/do not agree to participate in the study described above. I have read and understood the requirements of the study. Furthermore, I understand that participation is voluntary.

**Name:** \_\_\_\_\_  
**School:** \_\_\_\_\_  
**Signature:** \_\_\_\_\_  
**Date:** \_\_\_\_\_

**Note: 2 copies will be signed, one for the researcher and another to be retained by the participant.**

	Leading education and social research Institute of Education University of London	<b>Exploration of talk and gestures for dialogic scaffolding: A study of primary and secondary reading instruction</b>
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**Teacher consent form (Video-recording)  
[Researcher's copy]**

**Objective of the study:**


The study is part of a doctoral thesis under the Doctor in Education (International) programme at the IOE. The study aims to explore the use of semiotic resources; speech and gesture, for meaning making that takes place in reading comprehension primary (Year 6 – eleven year old) and secondary (Year 10 – fifteen year old) classrooms in a Singapore-based British international school and Singapore schools. The study will focus on the teachers and students' 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning making of the reading classroom.

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- d. I understand that I will not be individually identified in any publications of the study.

I agree/do not agree to participate in the study described above. I have read and understood the requirements of the study. Furthermore, I understand that participation is voluntary.

**Name:** \_\_\_\_\_  
**School:** \_\_\_\_\_  
**Signature:** \_\_\_\_\_  
**Date:** \_\_\_\_\_

**Note: 2 copies will be signed, one for the researcher and another to be retained by the participant.**

	Leading education and social research Institute of Education University of London	<b>Exploration of talk and gestures for dialogic scaffolding: A study of primary and secondary reading instruction</b>
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**Parent / Guardian consent form  
[Parent's/Guardian's copy]**

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**Description of project:**

The study is part of a doctoral thesis under the Doctor in Education (International) programme at the IOE. The study aims to explore the use of semiotic resources; speech and gesture, for meaning making that takes place in reading comprehension primary (Year 6 – eleven year old) and secondary (Year 10 – fifteen year old) classrooms in a Singapore-based British international school and Singapore schools. The study will focus on the teachers and students' 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning making of the reading classroom.

The study will be conducted during school hours for a period of one/two week(s). If you are willing to allow your child/ward to participate in this project, he/she will be observed and audio / videotaped. Aligned with the recent trends of international comparative studies in English language education, the study offers a significant contribution toward practitioners' professional learning as task designers of English reading comprehension instruction. It will also propose a redesigned dialogic teaching model for reading comprehension instruction that is adaptable for all teachers.

- a. I have been informed about the nature of this project.
- b. I am willing to allow my child/ward to participate in the project.
- c. I consent to the use of selected video clips of my child/ward for the purpose of thesis publication, journal article publication, conference presentation and teacher professional development.
- d. I understand that my child/ward will not be individually identified.


I agree/do not agree to allow my child/ward to participate in the study described above. I have read and understood the requirements of the project. Furthermore, I understand that (a) participation is voluntary, (b) both my child/ward and I have the right to terminate participation at anytime, and (c) both my child/ward and I have the right to have the collected data treated in a secured and confidential manner.

**Child's/ward's Name:** \_\_\_\_\_

**Parent's / Guardian's Name:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

	Leading education and social research Institute of Education University of London	<b>Exploration of talk and gestures for dialogic scaffolding: A study of primary and secondary reading instruction</b>
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**Parent / Guardian consent form  
[Researcher's copy]**

**Description of project:**

The study is part of a doctoral thesis under the Doctor in Education (International) programme at the IOE. The study aims to explore the use of semiotic resources; speech and gesture, for meaning making that takes place in reading comprehension primary (Year 6 – eleven year old) and secondary (Year 10 – fifteen year old) classrooms in a Singapore-based British international school and Singapore schools. The study will focus on the teachers and students' 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning making of the reading classroom.

The study will be conducted during school hours for a period of one/two week(s). If you are willing to allow your child/ward to participate in this project, he/she will be observed and audio / videotaped. Aligned with the recent trends of international comparative studies in English language education, the study offers a significant contribution toward practitioners' professional learning as task designers of English reading comprehension instruction. It will also propose a redesigned dialogic teaching model for reading comprehension instruction that is adaptable for all teachers.

- e. I have been informed about the nature of this project.
- f. I am willing to allow my child/ward to participate in the project.
- g. I consent to the use of selected video clips of my child/ward for the purpose of thesis publication, journal article publication, conference presentation and teacher professional development.
- h. I understand that my child/ward will not be individually identified.


I agree/do not agree to allow my child/ward to participate in the study described above. I have read and understood the requirements of the project. Furthermore, I understand that (a) participation is voluntary, (b) both my child/ward and I have the right to terminate participation at anytime, and (c) both my child/ward and I have the right to have the collected data treated in a secured and confidential manner.

**Child's/ward's Name:** \_\_\_\_\_

**Parent's / Guardian's Name:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

	Leading education and social research Institute of Education University of London	<b>Exploration of talk and gestures for dialogic scaffolding: A study of primary and secondary reading instruction</b>
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**Student Assent Form  
[Researcher's copy]**

**School:**

**Description of project:**

The study is part of a doctoral thesis under the Doctor in Education (International) programme at the IOE. The study aims to explore the use of semiotic resources; speech and gesture, for meaning making that takes place in reading comprehension primary (Year 6 – eleven year old) and secondary (Year 10 – fifteen year old) classrooms in a Singapore-based British international school and Singapore schools. The study will focus on the teachers and students' 'shaping' of varied modes – speech and gestures, as part of the teacher's scaffolding strategies used to support explorations in meaning making of the reading classroom.

If you are willing to participate, you will be observed and audio / videotaped.

- a. I have been informed about the nature of the project.
- b. I am willing to participate in the project.
- c. I consent to the use of selected video clips for the purpose of thesis publication, journal article publication, conference presentation and teacher professional development.
- d. I understand that I will not be individually identified.
- e. I understand that participation is voluntary.

No.	Name	Class	Signature	Date
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## Appendix 8: Supporting documents for External Ethics Approval (Secondary Source of Data)

### Attachment D: Request for Secondary Use of Data Form

#### Request for Secondary Use of Data Form (CRPP) (To be submitted to Principal Investigator of the project and Dean, CRPP for approval)

<b>Section 1: Requestor's Details</b>	
Name(s) of Requestor(s): _____	Position: _____
Date of Request: _____	Data will be used for Other: _____

<b>Section 2: Details of Data Requested</b>
Data requested from Project Title: _____
Project No: _____
<u>Type of data:</u> Video files of recorded lessons, Audio files of interviews, Transcripts, Teacher Tasks and Student Work Artifacts, Coding Spreadsheets and Statistical Data
<u>Specific details on type of data requested:</u> English Language lessons at primary 5 (standard stream) and secondary 3 (express and normal academic) levels.
<u>How the data will be used and/or analysed:</u>
Using statistical data analysis (e.g. rank ordering of lessons/units) as a data selection-justification strategy, a sample set of lessons will be selected for use in the research as multiple case studies. Adopting Mercer's (2005) 'sociocultural discourse analysis' methodology, this study will analyse classroom talk; both teacher-student and student-student interactions. Illustrative examples drawn from the data will be analysed further using an integration of multimodal and systemic functional linguistics (SFL) analysis. The study intends to merge the visual frame data analysis (screen captures of video) with the classroom talk transcriptions into a newly designed multimodal transcription that is based on the conceptual framework of Halliday (1979) SFL and a methodological integration of Kress and van Leeuwen's (1996) social semiotics framework and Mercer's (2005) sociocultural discourse analysis.
<u>Justification for the request:</u>
This graduate studies research entitled 'Orchestration of Talk for Meaning Making in Reading Comprehension Instruction: A Study of Singapore English Classrooms' aims to explore the kind of talk for meaning making that takes place in reading comprehension classrooms in Singapore schools, and the factors that influence it. The research attempts to tease out the 'orchestration of talk' in enhancing students' ability to make meaning and gain deep understanding from their 'social construction' of and 'interaction' with texts. The data drawn from Project OER 20/09 DH will provide the research with a rich data sample to allow for an in-depth study on the role of the teacher in orchestrating classroom talk in a reading comprehension instruction, which involves the teacher's 'shaping', or 'orchestration', of the numerous 'modes' – gestures, signs, objects, speech, illustrations, (Jewitt, 2009) and resources used to support learning of planned objectives and unplanned explorations in making meaning in English Language reading lessons. This study also hopes to complement and contribute towards the Project's overall findings in achieving the following Project objectives; (a) to record, measure and analyse the intellectual quality of the knowledge work associated with particular classroom instructional strategies and patterns of classroom interaction and conversation, and (b) to record and map teacher and student understandings of, and dispositions towards, the knowledge work that they undertake in classrooms. Finally, there will be continual efforts to submit papers discussing the study's preliminary findings and analysis at international conferences like AERA2013 and other scholarly international journals, while acknowledging Project's data gatherers and taking into account the Project team's main publication plans.