

**A SYSTEMIC FUNCTIONAL
MULTIMODAL DISCOURSE ANALYSIS APPROACH TO
PEDAGOGIC DISCOURSE**

LIM FEI VICTOR

NATIONAL UNIVERSITY OF SINGAPORE

2011

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This thesis represents my own work and due acknowledgment is given whenever information is derived from other sources. No part of this thesis has been or is being concurrently submitted for any other qualification at any university.

Lim Fei Victor

DEDICATION

In loving memory

of my grandmother

Mdm Chong Chew Yong (1929-2007)

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SUMMARY

My thesis adopts the Systemic Functional Multimodal Discourse Analysis (SF-MDA) approach to investigate pedagogic discourse. Two lessons of the subject General Paper in a Junior College in Singapore are analysed. The semiotic resources of language, gesture and the use of space through the positioning and movement of the two teachers are discussed in relation to the pedagogy that they realise.

Chapter 1 relates the research field and discusses definitions of literacy and multimodality. Multimodality is described as a phenomenon, domain of enquiry and an analytical approach. The respective challenges to paradigm, perspective and practice are presented. Multimodal literacy in multimedia texts and multisemiotic experiences are also explicated. Finally, multimodal pedagogic discourse is introduced as the research application in this study.

The SF-MDA approach adopted in this thesis is explained in Chapter 2 against the backdrop of current approaches to classroom discourse. The ‘quadnocular perspective’ applied in this study is introduced. The diachronic and synchronic analytical views adopted in the analysis are described in terms of time and space as ‘integral resources’.

Chapter 3 focuses on contextualisation. The context of culture is described through the notion of resemiotization. The resemiotization of the Ministry of Education’s policy documents to the General Paper classroom practices is discussed. The Curriculum Genre Theory is applied to multimodal pedagogic discourse and is

productive in locating the lesson in the context of situation. The Curriculum Hypergenre is proposed along with a set of Lesson Microgenres formulated for the General Paper classroom.

Gesture and spatial pedagogy are discussed in Chapter 4. The categories of Communicative Gesture and Performative Gestures are proposed and both formal and functional descriptions of gesture are annotated in the analysis. Presenting, Representing and Indexical Actions are described in terms of their systems in the metafunctional organisation. In addition, the different types of space in the classroom are also proposed.

Chapter 5 describes the approach and presents the findings from the analysis of the multimodal corpus. The approach in the collection, annotation, analysis and visualisation of the data is outlined. The analysis is discussed in accordance to the lesson microgenres, gesture, use of space through positioning and movement as well as language. The visualisation of the patterns and trends in the logogenesis of the teachers' lessons and their use of space are displayed through state transition diagrams. The dominances and tendencies observed in the statistical results are contrasted between the two teachers. With that, the distinct pedagogies they realise in their lesson through their multimodal semiotic selections are described.

An integrative perspective on the co-deployment of semiotic resources is presented in Chapter 6. Specifically, the intersemiosis between language and gesture is described in terms of contextualising relations and intersemiotic cohesion. The

emergent meanings of 'Redundancy' and 'Structured Informality' in the lessons observed are also discussed.

Finally, Chapter 7 concludes with the theoretical and methodological contributions along with the educational and pedagogical implications arising from this thesis. The limitations of this study are also discussed along with possible further research endeavours.

CHAPTER 1

MULTIMODALITY AND LITERACY

1.1 Research Terrain

1.1.1 Thesis

What makes an effective teacher? How do we distinguish one from the other? Is it in their capacity to inspire, their creativity to interest or their capability to impart? If so, how are these intangibles embodied by the teacher and demonstrated in the lesson? Also, how do we measure them?

My thesis is that an investigation of the teacher's use of language, gesture, positioning and movement in the lesson may provide insights into their distinct pedagogies. Teaching and learning in the classroom is a multisemiotic experience. Hence, in order to access the constellation of meanings made in the orchestration of multisemiotic choices by the teacher, a multimodal analysis afforded by multimedia techniques is productive. This is the endeavour undertaken in my thesis. Specifically, two teachers' use of semiotic resources in a General Paper lesson at a school in Singapore is investigated in this study.

The importance of the teacher has been increasingly accentuated in the last few years in Singapore. Most recently, the Ministry of Education, Singapore, in December 2010, presented its report by the committee on Secondary Education Review and Implementation (SERI). One of the key recommendations by SERI is the

need to “re-tune our system to strengthen the rapport between teacher and students”¹. The belief is that “[a]s teachers are the frontline in the delivery of holistic education, strong teacher-student relationships will facilitate the school’s ability to provide greater social-emotional support to students” (Ministry of Education, Singapore, 2010: 23). Further, the Ministry of Education recognises that as “teachers have an immediate influence on students’ academic-related interests, the link between a student’s academic outcomes and teacher support is strong and direct” (Ministry of Education, Singapore, 2010: 30).

The growing recognition of the critical role teachers have in education is founded on many recent studies; for instance, the survey conducted by global consulting firm, McKinsey & Company (2007) entitled, *How the world’s best performing school systems come out on top*. The study involves 25 school systems worldwide, including Singapore, which was ranked amongst the top five best performing systems. There are three simple guiding principles that the report cites for success. They are namely 1) getting the right people to become teachers, 2) developing them into effective educators and 3) ensuring that the system is able to deliver the best possible instruction for every child. The McKinsey study concludes that the main driver of learning and performance is in the quality of the teachers. The study also asserts that the quality of the education system cannot exceed the quality of its teaching force.

In tandem with these studies, increasing effort has been made in the aspect of teacher-training in Singapore. The Ministry of Education launched the GROW

¹ <http://www.moe.gov.sg/media/speeches/2010/09/23/work-plan-seminar-2010.php>

(Growth of education officers, through better Recognition, Opportunities, and seeing to their Well-being) Package in 2006 and GROW 2.0 in 2008 to further reward teachers in remuneration and welfare benefits. The policy also incentivises teachers' lifelong learning and upgrading of their professional qualifications through the provision of scholarships and sabbatical leave schemes. GROW 2.0 was designed to build on the foundation of the GROW package, incepted in 2006, to further support teachers' professional and personal development needs holistically. This is to attract and retain a quality teaching force.² The enhanced benefits for teachers are estimated to cost the Singapore Government about SGD 380 million³. This dissertation research is, in part, funded by the postgraduate scholarship and professional leave scheme from the GROW package.

The focus on teachers in education, however, has not always been that intense. Christie (2007: 6) observes that up till recently, “[c]urriculum theorizing throughout the twentieth century was significantly influenced by various progressivist and constructivist theories of knowledge and of the learner, whose effect was to diminish the status of knowledge structures, as well as the role of the teacher”.

Nonetheless, there have also been many education researchers who have been vocal in asserting the importance of the teacher in the classroom. For instance, Muller (2007: 26) describes the teacher as “an authoritative pedagogical agent”. Muller (2007) argues for sound teacher's competency and strong knowledge

² http://www.mof.gov.sg/budget_2008/expenditure_overview/moe.html

³ <http://www.channelnewsasia.com/stories/singaporelocalnews/view/319634/1/.html>

expertise, opining that “the condition for teachers to be able to induct pupils into strong internal grammar subjects is that they themselves already stand on the shoulders of giants that they can speak with the disciplinary grammar”. Muller (2007: 26) notes that in his survey of the global literature on effective learning, “teacher competence is by far the most important factor in learner attainment”.

This resonates with Macken-Horarik, Love & Unsworth’s (2011) study of the English classroom. They argue that “[t]eachers are central... [as] teachers are the ones who will need to revise, or indeed establish, a grammar that relates purposefully to the texts of contemporary school English and builds knowledge about language progressively and cumulatively” (Macken-Horarik et al. 2011: 10). In other words, teachers’ competency is vital to their effectiveness in the classroom.

O’Halloran (2007a) also highlights the importance of the teacher in her documentation of the difference in teaching and learning practices in Mathematics classrooms that are differentiated on the basis of socio-economic status. She observes that “as the divide grows between different types of schools, so do the experiences, qualifications and salary of the teaching staff” (O’Halloran, 2007: 235). As such, O’Halloran (2007a: 235) argues for the need to “develop theoretical and practical approaches for developing effective teaching strategies, particularly for teachers working with disadvantaged students”. O’Halloran (2007a) emphasises the importance of teacher-training, crediting the teacher as a critical factor in the outcome of the students’ achievements in Mathematics.

Likewise, Allington & McGill-Franzen (2000: 149) explain that “we need to concentrate our efforts on enhancing the expertise of teachers... Happily, there seems to be growing recognition, among some policy makers, that it is teachers who teach, not materials”. Undoubtedly, the teacher is central in the actualisation of national curriculum objectives, examinations syllabus and the educational policies in the classroom.

In a largely structured educational landscape, such as that in Singapore, the Ministry of Education articulates the Desired Outcomes of Education as the guiding policy for formal education from the Primary to Pre-University level. The Syllabus and Assessment Objectives are designed to align with these Desired Outcomes of Education. Cascaded to the school level, the subject department formulates the Scheme of Work based on the guidelines stipulated in the Ministry of Education’s curriculum document. Given that the curriculum framework is determined for the teachers by their department, the teachers usually adopt a set of standardised materials in their lessons.

In such an environment, the main variation that the students experience in this setting is usually the teachers they are assigned to. Specifically, the differences are realised mostly in terms of the pedagogical strategies adopted by the teacher in constructing the learning experience for the student. While many previous educational studies, such as those discussed in Chapter 2, 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, as evident in the studies cited in the later part of this chapter, that language only provides a partial

understanding to what goes on in the classroom. The learning experience is intensely multimodal. Pedagogic semiosis (meaning-making) is a result of the interplay of a repertoire of semiotic resources, not just language alone, expressed through a range of modalities. The orchestration of these multimodal resources in the classroom can be described as an instantiation of the teacher's pedagogical strategy. This ultimately differentiates one teacher from another. For this reason, this study adopts a multimodal approach to pedagogic discourse.

1.1.2 Research Questions and Aims

This study is guided by three leading questions and the aims of this thesis are formulated correspondently.

Firstly, what understandings can a multimodal perspective on pedagogic discourse offer? In the last decade, there has been growing interest in the multimodal approach to discourse, including educational discourse (see, for example, Kress, Jewitt, Ogborn & Tsatsarelis, 2001; Kress, Jewitt, Bourne, Franks, Hardcastle, Jones & Reid, 2005; Kress, 2003, 2010; Jewitt & Kress, 2003; Jewitt, 2007; O'Halloran, 2004, 2005, 2008a and Unsworth, 2001, 2002, 2006a, 2008a, 2008b). This includes an investigation on the multimodal lesson materials (Unsworth, 2001 2008b; Unsworth & Chan, 2009 and Daly & Unsworth, 2011), learning technologies and new media (Kress, 2003 and Jewitt, 2008) as well as the resemiotization across semiotic resources in disciplinary discourses (such as in the Science classroom in Kress et al., 2001 and Jewitt, 2002a, in the English classroom in Jewitt, 2002b and

Kress et al., 2005, in the Mathematics classroom in O'Halloran, 2005 and in the History classroom in Derewianka & Coffin, 2008). Such studies challenge the traditional view that teaching and learning are primarily linguistic accomplishments (see, for example, Schleppegrell, 2007).

This thesis hopes to contribute to the research pioneered by those aforementioned by investigating the multimodal nature of pedagogic discourse in two General Paper lessons. General Paper is a subject in the English language offered at the Singapore-Cambridge General Certificate of Education (Advanced Level) Examination in Singapore. The subject is described in detail in Chapter 3.

This study focuses on the teacher's use of language, gesture, positioning and movement in the classroom. It also discusses how these semiotic resources operate intersemiotically in the construction of the teaching and learning experience that is realised in distinct stages. The co-deployment of these resources in a multimodal ensemble by the teacher constructs a unique classroom experience for the student. This study endeavours to further the theoretical understanding of the nature (functional specialisations and affordances) of the modalities and semiotic resources as well as their effective combinational deployment in teaching and learning.

Secondly, what is a viable methodological approach to multimodal pedagogic semiosis that is both contextually situated and empirically verifiable? The spotlight on the repertoire of modalities and semiotic resources at a teacher's disposal in the classroom necessitates the use of new investigative methods. These approaches need to possess the latitude and capacity to analyse multimodal discourse and to

analyse discourse multimodally. O'Toole (1994/2010), Baldry (2000), Baldry & Thibault (2006) and O'Halloran (2004b, 2010) have developed a distinct approach towards multimodal discourse analysis that is founded on Systemic Functional Theory which is described as being both 'bottom-up' and 'top-down' in orientation (O'Halloran, 2011). Distinguished as the 'Systemic Functional Multimodal Discourse Analysis' (SF-MDA), the approach presents a rigorous and detailed analysis of the choices made in the text derived from a system network of meaning options on the different ranks & scales and across the various metafunctions. The SF-MDA approach is discussed more fully in Chapter 2.

This study applies and extends the SF-MDA approach to pedagogic semiosis. It also explores what digital media software and technological platforms can offer in the annotation, analysis and visualisation of the multimodal data. This thesis proposes methods to transcribe, describe and analyse these resources within the SF-MDA approach. Building on and applying the seminal work done in Curriculum Genre Theory by Christie (1993, 1997, 2002) and O'Halloran (1996, 2004a), in language by Halliday (1985/1994) and Halliday & Matthiessen (2004), in gesture by Martinec (2000, 2001, 2004) and Hood (2007, 2011) and in the use of space through positioning and movement by Matthiessen (2009), Hall (1966) and Kendon (1978, 2004), this thesis extends the productivity of their theories to analyse multimodal pedagogic discourse. In addition, this study will utilise and explore some of the digital media software and technology, such as *Cytoscape* and *Systemics*, currently under research and development in the Multimodal Analysis Lab, part of the Interactive Digital Media Institute at the National University of Singapore.

Thirdly, how do two different teachers teaching a lesson at the same lesson stage construct distinctive classroom experiences through their pedagogical strategies? Specifically then, this study investigates 1) the meanings made in the multimodal pedagogic discourse of the two lessons, 2) the different strategies and approaches adopted by the two teachers and 3) the possible implications for effective teaching and learning of General Paper, with a focus on teacher-training.

While it is simplistic to assume that experienced teachers are more effective and novice teachers are less, this study focuses on two teachers with different years of teaching experience in order to investigate and provide insights into how teachers may vary in their pedagogical strategies while teaching similar lessons and students. This study provides an important initial step to investigate the productivity of their pedagogical strategies in achieving effective teaching and learning. This has implications on teacher-training. Teachers can be sensitised to the multimodal communication in the classroom and can be attuned to the effective pedagogical strategies which they can deploy in their lessons.

This thesis also proposes the notion of 'structured informality' as conceived from the studies in social constructivism by Vygotsky (1978) and extended by Savery & Duffy (1995). Structured informality is constructed through the interplay of multimodal meanings resultant from the effective combination of semiotic resources. The pedagogical strategies through the combination of semiotic choices deployed by an experienced and a novice teacher in a General Paper classroom at the Pre-University level in Singapore are studied and contrasted in this study. In addition, the extent by which structured informality is constructed in their respective

classroom is discussed. Through this, the study presents specific implications to teacher-training for the teaching of General Paper and beyond to inform the general nature of teaching and learning for adolescents.

1.2 Research Field

1.2.1 Literacy

What literacy is and what constitutes learning remain contested. While a consensus on the definition seems elusive, there is an emerging trend towards what Unsworth (2002: 63) describes as “a plurality of literacies”. Unsworth (2002: 62) observes that “[w]hile many of the fundamentals of established, language-based literacy pedagogies will endure in the foreseeable future, they are by no means sufficient for the development of the kinds of literacy practices that already characterise the continuously evolving information age of the new millennium”. This is evident from the new research directions in areas such as New Literacies (see, for example, Barton, Hamilton, & Ivanic, 2000; Brant & Clinton, 2006 and Unsworth, 2008b), Multiliteracies (see, for example, Cope & Kalantzis, 1993, 2000, Unsworth, 2001, 2008c and Zammit, 2011), Critical Literacy (see, for example, Fairclough, 1992; Foucault, 1980 and Luke, 1996), and Multimodal Literacy (see, for example, Kress et al., 2001; Kress & van Leeuwen, 2001; Jewitt & Kress, 2003; Kress et al., 2005; O’Halloran, 2005, 2008a and Unsworth, 2006b, 2008d).

Jewitt (2007: 244) notes that the recognition of the different types of literacies needed for the world of tomorrow “marks a shift from the idea of literacy

as an autonomous neutral set of skills or competencies that people acquire through schooling and can deploy universally to a view of literacies as local and situated". New skills for reading, finding information, authenticating information, and manipulating, linking and representing information are demanded in this increasingly interactive digital media enabled multimodal environment (see, for example, Jewitt, 2007; Kress, 2003; Unsworth, 2002, 2006a and Unsworth, Thomas, Simpson & Asha, 2005). Unsworth (2002: 63) observes that "there is no doubt that multimedia and electronic information sources are quickly taking up the communication of much information previously presented solely in traditional text formats, rather than being displaced by computer text". Notwithstanding, Unsworth (2002; 63) cautions that "conventional literacies are maintaining a complementary role as well as being both co-opted and adapted in the evolution of our textual habitat".

Lemke (2002a: 22) suggests that "the broadest sense of literacy is identical to meaning-making or semiosis, in general. A narrower definition of literacy may be constructed by focusing on meaning-making in which complex configurations of artefacts or natural structures play a critical role, as 'text' in the meaning we make on some occasion". He argues that "in the perspective of social semiotics, meaning making is social, and material, and semiotic and so therefore is literacy" (Lemke, 2002a: 23). This thesis thus adopts Lemke's (2002a) perspective of the 1) social, 2) material and 3) semiotic nature of literacy. It launches from that understanding to explore the productivity of this view on teaching and learning.

1.2.1.1 Literacy is Social

Firstly, literacy is social. Learning is acquisition of privileged knowledge and ideologies valued in a society. King, Young, Drivere-Richmond and Scgrader (2001) posit that learning takes place whenever the student is receptive. They distinguish between 1) objective-driven learning, such as instruction, 2) non-objective learning, such as exploration, and 3) unintended learning. It is also with the third type of learning, due to its more subtle and perhaps more 'invisible' nature, which the analysis of multimodal pedagogic discourse can possibly explicate and offer insights.

Bourdieu & Passeron (1964/1979) in their study of the French school system highlight their analyses of class bias in higher education. In their study of the various power structures in the classroom, they explain that school actually reproduces the cultural division of society in many visible and invisible ways despite its apparent neutrality. Schooling and education are, in fact, using symbolic violence to legitimise the prevailing social order. Bourdieu (1974) further asserts that the school is a site of struggle through the encounter of formal, organised prescriptions relating to knowledge and behaviour with the value orientations and cultural capabilities and experiences of students. He explains that it is an encounter marked by difference and inequality. Kress et al. (2005: 14) further this understanding, positing that “the interpersonal and ideational transactions of education are shaped by social relationships of this kind and that the classroom is, in important ways, a site of conflicts, to which the teacher’s rhetorical activity is a response”. In this light, a social semiotic perspective of teaching and learning can potentially offer interesting insights with regard to the ideologies and power dynamics in pedagogic discourse.

1.2.1.2 Literacy is Material

Secondly, literacy is material. Learning is negotiated and transformed through the physical media and in its material environment. Semiotic resources are combinationally deployed and materially instantiated in time and space through distinct stages in the lesson. The notion of time and space as integral resources is discussed in Chapter 2. Literacy has focused traditionally on the semiotic resource of language. Yet, teaching and learning in the classroom is multimodal as meaning is communicated through other semiotic resources such as gesture and the use of positioning and movement in the classroom. They are realised materially through the verbal, visual, aural and somatic modalities as well. An effective teacher orchestrates these semiotic resources and modalities to construct a lesson experience to engage, enthuse and educate the students.

Against the contemporary contextual backdrop of the interactive digital media age, the rapid acceleration and advancement of educational technology has offered us a plethora of modalities and media in which meaning can be made (see, for example, Jewitt, 2008; Kress, 2003; Unsworth, 2002, 2006a and Unsworth, Thomas, Simpson & Asha, 2005) Educational technology takes the form of machinema, serious games, podcast, vodcast, documentary, virtual worlds such as *Second Life* and student portals in the form of virtual learning environments such as the course management system *Blackboard* used by the National Institute of Education in Singapore and the Singapore Institute of Management University as

well as the *Integrated Virtual Learning Environment* used by the National University of Singapore. The meaning making potential of these New Media platforms with their host of auxiliary features remain relatively unexplored and under-theorised. This is an interactive digital media age where there is easy access to 'wiki-knowledge' on the Internet via a smorgasbord of New Media educational resources that are designed for independent, self-directed, technologically mediated learning. The question of how the role of the teacher is negotiated and remade, in light of this, grows ever more pertinent.

The study in the use of educational technology is not the main focus of this thesis due to the nature of the data collected – as all the teachers who participated in this project chose to use very little or no New Media technology in the delivery of their lessons. The reason for this is uncertain but part of it may be attributed to Unsworth's (2008c: 70) observation that "the majority of teachers of all ages do not feel confident or comfortable in the world of digital multimedia". Nonetheless, this remains an important area for further investigation. More research effort is thus needed to fully understand the affordances and potential presented by these media.

Notwithstanding this, it is crucial for educators today to make use of these media and modes for knowledge transmission so as to "engage with the young on the grounds of their experience" (Kress, 2003: 175). Unsworth (2008c: 71) argues that "[a]n acknowledgement of the ways in which exponentially expanding and improving technology is changing the dynamics of pedagogic practices is essential to maintaining children's engagement with learning through literary texts – and technology". In fact, as Jewitt (2007: 261) concludes, "the classroom is one node in

the complex intertextual web of the communicational landscape of young people even when it appears isolated and autonomous”.

1.2.1.3 Literacy is Semiotic

Thirdly, literacy is semiotic. Learning is a semiotic act of meaning making. Thibault (2004: 303) declares that “consciousness is semiotic interpretation of phenomena”. Arguably then, by extension, learning, which is a concerted focus of consciousness, comprises semiotic interpretations and reinterpretations. This is affirmed by Kress (2007: 37) as he argues that “learning can be seen as the individual’s agentive selection from engagement with and transformation of the world according to their principles”.

Going further, Lemke (2002a) explains that learning is not only just semiotic but should be more accurately described as multisemiotic. Lemke (2002a: 23) articulates:

Semiotically, we never in fact make meaning with only the resources of one semiotic systems: words conjure images, images are verbally mediated, writing is a visual form, algebra shares much of the syntax and semantics of natural language, geometric diagrams are interpreted verbally and pictorially, even radio voices speak to us of individuality, accent, emotional states and physical health through vocal signs not organized by the linguistic code.

The recognition of the multimodal nature of pedagogic discourse presents a research imperative to investigate the nature of pedagogic discourse from this perspective. Kress et al. (2005) in the *Multimodal Production of School English* project conducts detailed video recording of lessons, interviews and analysis of texts used in the classroom to investigate the meanings, such as the perception of ability, construction of identity and the intensity of engagement made from non-verbal cues of teachers, wall displays, furniture arrangements in the English classroom. The conclusion arrived was that “talk alone, or even talk supplemented by writing” is insufficient in providing the understandings of the classroom experience (Kress et al., 2005: 169). As the discourse of the mainstream classroom is itself a multisemiotic experience, multimodal pedagogic semiosis provides the student with a unified semantic meaning rather than an isolated linguistic one. Nonetheless, it is important to assert that researching the classroom through multimodal lens in this study is not to sideline language, but an attempt at a more comprehensive investigation of semiosis in the classroom. As Jewitt (2007: xiv) explains, the endeavour will show how language is “nestled and embedded within a wider semiotic”.

Slightly less than a decade ago, Kress (2003: 168) envisaged that “the major task is to imagine the characteristics of a theory which can account for the processes of meaning making in the environments of multimodal representation in multi-mediated communication, of cultural plurality and of social and economic instability”. In a sense, this thesis can be interpreted as one of the responses to the call for the development of the theory which contributes, in some ways, to our understanding of the complexities of multimodal pedagogic semiosis.

1.2.2 Multimodality

O'Halloran, Tan, Smith & Podlasov (2010: 4) explain that "like Baldry & Thibault (2006: 19), we believe that, in practice, texts of all kinds are always multimodal, making use of, and combining, the resources of diverse semiotic systems to facilitate both generic (i.e., standardized) and specific (i.e., individualized, and even innovative) ways of making meaning". The truth is that communication, not just in contemporary times, has always been inherently multimodal. The study of multimodal discourse from the Systemic Functional perspective is a relatively recent domain of enquiry. The works generally cited to be seminal in this field dates only to the mid 1990s, with O'Toole's (1994/2010) *Language of Displayed Art* and Kress & van Leeuwen's (1996/2006) *Reading Images: The Grammar of Visual Design*. One of the earliest compilations of studies in multisemiotic texts is O'Halloran's (2004) *Multimodal Discourse Analysis*, where a series of semiotic artefacts, such as museums, cityscape, picture books, films, advertisements and web pages, are investigated from the Systemic Functional perspective.

The recent interest in multimodality is probably generated by the rapid development in interactive digital media, accentuating the multimodal nature of meaning making. As O'Halloran & Smith (accepted for publication a) summarise:

To say we move in a new world, the digital information age, is already a cliché. Our challenge appears to be the navigation through and adaptation to not so much an actual, material environment but the virtual semiotic,

informational environment— an environment of our own making, incorporating the discourses of many millions of multiliterate social agents; and yet an evolved rather than designed environment.

Multimodality, as a theoretical terminology used in the field of social semiotics, has taken on different meanings in different settings. Multimodality has been described as a phenomenon (see, for example, Scollon & Levine, 2004 and O'Halloran, 2011), a domain of enquiry or research field (see, for example, Kress & van Leeuwen, 1996/2006; O'Halloran, 2005; Kress, 2009 and Bezemer & Jewitt, 2009) and an analytical approach (see, for example, Jewitt, 2008 and O'Halloran, 2007). The different dimensions of multimodality, as 1) phenomenon, as 2) domain of enquiry and as 3) analytical approach are discussed below, along with the challenges each dimension invokes.

The nascent nature of multimodality presents innumerable challenges. It is obviously impossible for this study to circumnavigate the numerous complexities invoked in the different dimensions of multimodality. However, some of the challenges that have emerged in the course of embarking on this study are discussed and possible responses to these challenges are explored in this thesis. The challenges in multimodality encountered are categorised and detailed, correspondingly to the dimensions of multimodality, under challenges to 1) paradigm, 2) perspective and 3) practice.

1.2.2.1 Multimodality as Phenomenon

All of life is multimodal and we construe meaning through the multiplicities of modalities and the repertoire of semiotic resources used. Baldry (2000: x) rightly observes that "[w]e live in a multimodal world". We experience multimodally and in turn, make meaning of our experiences multimodally. As mentioned earlier, the reality of that in contemporary society is possibly accentuated by the rapid advancement in technology and interactive digital media. As O'Halloran & Smith (accepted for publication a) observe, "[t]echnology has greatly increased the human capacity for multimodal communication and thus socio-cultural development". Historically, the invention of the printing press has shaped the way information is presented and consumed through language in the printed mode. Likewise, the popularisation of the Internet and the accompanying technologies of interactive digital media have "led to a significant expansion of the repertoires of human cultural exchange" (O'Halloran & Smith, accepted for publication a).

Even though language is usually the dominant resource used, the multimodal perspective recognises that language is almost always co-deployed alongside with the other semiotic resources and makes meaning as a result of the orchestration of these modalities and resources. This consideration calls for a paradigm shift, from a world-view that is logocentric, to one that is, perhaps, multimodal in orientation. Language has come to be understood "not as some discreetly independent entity, but rather as part of complex sets of interconnecting forms of human semiosis" (Christie, 2002: 3).

The processes of reading as consumption of texts and writing as production of texts include semiotic resources beyond that of language. As Unsworth (2008c: 67) observes, “overwhelmingly, both the information in images and their effects on readers are far from redundant or peripheral embellishments to the print. Because images are used increasingly, and in a complementary role to the verbal text, it is now inadequate to consider reading simply as processing print”. This is exemplified even in a traditional, non-technological text such as a poem on a page. The linguistic choices in the poetry present only a partial meaning of the poem. Meaning is also made in terms of the size, colour and typography of the words and even the materiality of the paper, in terms of its quality, size and weight, are semiotic choices that contribute combinationally in constructing the multimodal meanings in the text. Unsworth (2002: 65) explains that “[t]he graphology of written language needs to be read multimodally. In so doing the ways in which these multimodal features of written language make different kinds of meanings need to be understood because they are fundamental to a text's influence on its interpretive possibilities”.

Digital media texts such as web pages seldom rely only on the linguistic semiotic resource to convey content. Images, both static and dynamic, work together with language to make meaning visually. Auditorially, the web page might also have music, which together with the interactive links, invites kinesthetic exploration. Altogether, they operate to present a total multimodal experience which was previously not available from the printed book. The epistemological implication of multimodality is that meanings in a text can no longer be assumed to

be a result of a single semiotic resource. Meanings are a result of the collective semiotic resources co-deployed within the same text.

1.2.2.1.1 Challenges to Paradigm

The first challenge that the dimension of multimodality as phenomena poses is to the conventional paradigm of discourse and discourse analysis. The recognition of the multimodal phenomenon entails a degree of complexity in our understanding of texts and discourses in general. The mainstream disciplines in academia, such as linguistics, music, art, have mostly ignored the multimodal nature of discourse. They tend to focus primarily on the mono-modal aspect or the single semiotic resource of interest to the specialist. In varying degrees, as Smith, Tan, Podlasov & O'Halloran (2011: 354) explain:

Studies dealing with human language (spoken and written), gesture and other bodily display (in humans and animals), gaze, proxemics, static and dynamic visual and aural art, architecture and so on, from within traditions and backgrounds as diverse as (the various schools and disciplines of) linguistics, mainstream semiotics, social semiotics, psychology, anthropology, animal behaviour, cultural studies, media studies, and theory, criticism and practice of visual and aural art (painting, photography, music, film, theatre, sculpture, architecture etc) are all potentially directly relevant to (any particular and the general) study of multimodality.

In linguistics and literature, the focus has predominantly been on the analysis of language used in texts. This approach inadvertently privileges the semiotic resource of language over the other resources. It has been an appropriate approach as the focus on language has been legitimised by the selection of texts where language is generally the main bearer of meanings. However, the semantic load that language carries is usually, though not always, greater than any other single semiotic resource in meaning making. Hence, examining the meanings made by language alone offers only a partial understanding to discourse.

The shift in knowledge paradigm to the recognition and understanding of the multimodal nature of discourse and communication has consequences on the manner in which academic disciplines are structured. Fortuitously, the emerging trajectory in academia towards a more inter-disciplinary and trans-disciplinary perspective on the nature of knowledge and analytical approaches seem to encourage more serious interest and investigation in multimodal studies. Unsworth (2008d: 8) describes the need to “transcend disciplinary boundaries to achieve the kind of integrated focus necessary to research issues in the fields such as multimodal semiotics and education”. Unsworth (2008d: 8-9) observes:

This kind of transdisciplinary approach has been demonstrably productive to date and seems crucial in the future for those in social-semiotics and in education who need to understand how the emerging textual habitats integrates multiple meaning-making systems, such as language, image, sound, movement; multiple ‘text’ generation devices, such as digital cameras,

scanners, computer software viz. multimedia authoring systems; and multiple communication formats such as computer screens, ipods, handheld/pocket personal electronic organizing devices, mobile phones.

This is because intrinsic to multimodal discourse is “inherently an interdisciplinary exercise, with a multiplicity of theoretical, methodological and analytical approaches” (Machin, 2007: x-xi). Jewitt (2007: 246) notes that research in multimodality “extends past the traditional psychological and linguistic foundation of print literacy to draw from anthropological, sociological, and discourse theory” along with discernible influences from “cognitive and sociocultural research”. Kress & van Leeuwen (2001: 1) also observe that “the desire for crossing boundaries inspired twentieth century semiotics”. Hence, while the “multimodal turn”, which Jewitt (2009a: 4) describes, presents challenges to the traditional paradigm of knowledge, the growing trend in academia towards collaboration beyond the silos of any single discipline, encouraging cross-fertilisation across fields, appears to herald well for multimodal research.

1.2.2.2 Multimodality as Domain of Enquiry

O'Halloran (2011a) proposes multimodality as a domain of enquiry and a site for developing theories and approaches specific to multimodal study. Bezemer & Jewitt (2009: 180) also describes multimodality as a “field of application rather than a theory”.

Research into multimodality as a domain of enquiry builds and develops from the foundational work of O’Toole (1994/2010) and Kress & van Leeuwen (1996/2006) in the Systemic Functional Theory tradition to a wide range of texts. More than a decade ago, Kress (2000: 153) lamented that “the semiotic change which characterise the present and which are likely to characterise the future cannot be adequately described and understood with currently existing theories of meaning and communication”. However, since then, there have been innumerable studies into multimodality as a domain of enquiry, perhaps to address the gap which Kress (2000) alludes to. A sampling of the multimodal texts investigated after the turn of the century includes films (Martinec, 2000; Iedema, 2001; O’Halloran, 2004c; Baldry & Thibault, 2006; Tseng, 2008; forthcoming; Tseng & Bateman, 2010), animation (O’Toole, 2011), sound (Smith, 2011), colour (van Leeuwen, 2011a), school subjects such as Mathematics (O’Halloran, 2000, 2005, 2009), Science (Kress et al., 2001; Kress, 2000, 2002; Jewitt, 2002a; Guo, 2004; Liu, 2009, 2010; Unsworth & Cleirigh, 2011), English (Jewitt, 2002b; Kress et al., 2005; Unsworth & Chan, 2009; Daly & Unsworth, 2011; Macken-Horarik, Love & Unsworth, 2011; Jewitt, 2011) and History (Derewianka & Coffin, 2008), picture books (Unsworth & Wheeler, 2002; Lim, 2004; Painter, 2007, 2008, Martin, 2008; Guijarro & Sanz, 2009; Painter, Martin & Unsworth, 2011; Wignell, 2011, Painter, forthcoming), comic strips (Kaindl, 2005; Lim, 2007), newspapers (Macken-Horarik, 2003, 2004; Bateman, Delin & Henschel, 2006; Caple, 2008; Knox, 2008), print advertisements (O’Halloran & Lim, 2009; Feng, 2011), documents (Baldry & Thibault, 2006; Bateman, 2008), television advertisements (Thibault, 2000; Baldry & Thibault, 2006; Tan, 2009; Lim &

O'Halloran, accepted for publication; Feng & Wignell, submitted for publication), museums (Hofinger & Ventola, 2005; Martin & Stenglin, 2007; Pang 2004; Stenglin, 2009a, 2008b) and other built spaces (Alias, 2004; Butt & O'Toole, 2003; O'Toole, 2004; Ravelli, 2008; Stenglin, 2008, 2009c, 2011), home decorations (van Leeuwen, 2011b; Ventola, 2011), websites (Lemke, 2002b; Kok, 2004; Djonov, 2005, 2008; Tan, 2010; Zhang & O'Halloran, accepted for publication), hypermedia applications (Baldry, 2000; Unsworth, 2001, 2004, 2006a; Love, 2008; Jewitt, 2008; Kaltenbacher, 2005), online virtual world (Maiorani, 2009), transmedia (Lemke, in press), corporeal resources such as gesture (Martinec, 2000, 2004; Norris, 2004; Hood, 2007, 2011; Dreyfus, 2011; Lim, 2010; Zappavigna, Cleirigh, Dwer & Martin, 2010), positioning & movement (Lim, O'Halloran & Podlasov, submitted for publication) and face-to-face Interactions (Norris, 2004).

Compliations of new theoretical research in multimodal discourse analysis are found in O'Halloran (2004b), Ventola, Charles & Kaltenbacher (2005), Royce & Bowcher (2006), Unsworth (2008a), Ventola & Moya (2009), Jewitt (2009a), Bednarek & Martin (2010), Dreyfus, Hood & Stenglin, (2011) and O'Halloran & Smith (2011). Other approaches to multimodal studies stemming diverse theoretical background include multimodal interactional analysis (Norris, 2004; Norris & Jones, 2005; Scollon & Wong, 2004) from sociolinguistics, multimodal metaphor (Forceville & Urios-Aparisi, 2009) from cognitive linguistics and critical discourse analysis (Machin, 2007; van Leeuwen, 2008) from critical linguistics.

Scollon & Scollon (2009) note the similarities between the current interests in multimodality with the research in the field of non-verbal communication, some fifty

years ago, as best represented by the work of Pike (1954/1967), Ruesch & Kees (1956) and Hall (1959). However, while acknowledging that the work in non-verbal communication can inform the multimodal enterprise, they stress that “it is not simply a return” as the crucial difference is that “[n]o longer is language taken to be the model by which these other phenomena are studied, but, rather, language itself is taken to be equally grounded in human action with material means in specific earth-grounded sites of engagement” (Scollon & Scollon, 2009: 177).

Multimodal discourse analysis foregrounds the complexities inherent in the multimodal text, where meanings are made through a repertoire of modalities and semiotic resources. It invites investigation into the nature of these semiotic resources as well as the relationship between these resources which, as Lemke (1998b) argues, results in a ‘multiplying of meaning’. In order to understand the total meanings made in multimodal texts, there is a need to understand how each semiotic resource in itself makes meaning before moving to examine the interplay and integration of resources in their co-deployment in the text.

Given the interactions of these multimodal resources in a text to generate a constellation of meanings, there is a need to understand the meaning potential as well as the potential & limitations of each modality and semiotic resource. As O’Halloran & Smith (accepted for publication b) reflect, “[d]ifferent semiotic resources bring with them their own affordances and constraints, both individually and in combination, as well as analytical challenges in terms of the natures of these media, the detail and scope of analysis, and the complexities arising from the integration of semiotic resources across media”. For instance, Kress (1999: 79)

argues that language “is necessarily a temporally, sequentially organized mode... [t]he visual by contrast is a spatially and simultaneously organized mode”.

1.2.2.2.1 Challenges to Perspective

The second challenge which the dimension of multimodality as domain of enquiry poses is the negotiation amongst the differing and sometimes competing theoretical orientations as well as the contesting definitions of technical nomenclature.

A major point of contention within the differing perspectives is whether orientation can be taken from language to understand the nature of the other resources. Lemke (2009: 141) observes, “[i]n the last 20 years or so we have taken our models for the analysis of linguistic texts (Halliday, 1994; Martin, 1992), abstracted the relevant semiotic principles (Lemke, 1998b), and applied them to other media such as images, architecture, and music (Kress & van Leeuwen, 2001)”.

Researchers working within the Systemic Functional tradition have often extended insights from language, such as the theories and systems, to the other semiotic resources. However, the extent of fidelity to Systemic Functional Theory in the theorisation of the other semiotic resources differ ranging from the adoption of general meta-principles to the drawing of parallels in the detailed mapping and formulation of the systems. As Constantinou (2005: 603) notes, “[w]hile some of these approaches, such as O’Toole’s are closely situated within Halliday’s systemic functional tradition, following its principles of metafunctional and rank-based organization, other approaches are less bound to the systemic origins of

multimodality". For instance, Kress & van Leeuwen (1996/2006, 2001), while adhering to the principles espoused in Systemic Functional Theory, incline towards a more liberal application of a meta-linguistic formulations towards the other semiotic resources. They apply metafunctionality as a meta-integrative principle for all semiotic resources, and develop systems, modelled after systems in language, for other resources like images and music. An even looser reading of Systemic Functional Theory and relating them to multimodal texts, is what Jewitt (2009b: 29) describes as the "social semiotic multimodal analysis approach". This is based on the work by Hodge & Kress (1988) and is demonstrated in the work by researchers such as Kress (2003), Jewitt (2007) and van Leeuwen (2005a).

On the other hand, a more faithful application of Systemic Functional Theory can be found in the work of researchers such as O'Toole (1994/2010, 2004), O'Halloran (2004b, 2008b), Unsworth (2008a), Knox (2009) and Stenglin (2009b) in what is described as the SF-MDA approach. The SF-MDA approach adopts the notions of stratification and ranks to the other semiotic resources. By theorising systems at work in each semiotic resources as well as mechanisms for intersemiosis, this approach offers a detailed analysis of the multimodal text at varying levels of delicacy. The convergence and, sometimes, collision of these approaches to multimodal texts present inevitable challenges to theory in terms of orientation, terminology and methodology. The distinctions between these approaches are summarised in Jewitt (2009b) and O'Halloran (2011a). They are also discussed briefly in Chapter 2.

As mentioned earlier, the application of theories used in linguistics to multimodality has been problematised by some researchers. As Scollon & Scollon (2009: 170) describe “the task of relating multimodality and language, then, is a task of relating this new and fresh but still largely amorphous perspective on human communication to a complex, ancient, richly developed, and historical one which is differently naturalized in different cultures”. Critiquing some of the work that stems from Systemic Functional Theory, Sidiropoulou (2006: 125) argues that “[t]he notion of a universal theory of language which is readily applicable to all other languages, modes and cultural texts/objects is rather problematic and needs to be addressed”. Likewise, Scollon & Scollon (2009: 177) caution that “[l]anguage and linguistic analysis may be an important source of concepts, but it is fatal to the research endeavor to simply transport linguistic analysis over into the analysis of other modes”. Machin (2009) also questions if it is “necessarily a good move to try to explain one phenomenon by use of a framework developed to describe and understand another”. He explains that “[i]t is quite a different step to assume that it is possible to identify all the different elements and treat them as of the same nature as the signs that make up language and then deal with them as one system” (Machin, 2009: 181).

While SF-MDA is founded on Systemic Functional Theory, it must be emphasised that Systemic Functional Theory is not only a theory of language. Rather, as Halliday (1978) elucidates, Systemic Functional Theory is a theory of meaning; a semiotic theory, that has been most extensively applied to language. The allusions to language is not to uphold language as the standard or model but often a

metaphorical reference to the semiotic resource most researched upon and possibly best understood thus far. The principles extrapolated from the Systemic Functional Theory to the other semiotic resources stem from the premise of metafunctional meanings made through semiotic selections within a system network. There is little assumption that the systems in language are identical to the other semiotic resources (see, for example, O'Halloran, 2008b: 449). However, it remains contested if the nature of the other semiotic resources is similar to language, though the possibility that they might be, is not precluded from the SF-MDA approach. This thesis applies, develops and extends the productivity of the SF-MDA approach to pedagogic discourse. This is discussed in Chapter 2.

Fundamental questions concerning technical nomenclature include what constitutes a 'modality' in the term 'multimodality' and what the productive definitions of a 'mode' and a 'semiotic resource' are. For instance, is colour a semiotic resource (van Leeuwen, 2011a) or is it just a system operating within the semiotic resource of images and on the expression plane of written language? The same question can be posed for sound, typography, materiality and layout.

Debates on the issue of terminologies are plentiful. They are found, for example, in Lim's (2005) discussion on what the term 'semiotic resource' implies, Constantinou's (2005) observation of the terminological inconsistencies in the use of 'medium' and 'mode', Kress' (2009) explanation on what a 'mode' is, Bateman's (2011) investigation on the "decomposability of mode" and O'Halloran et al.'s (2010) documentation of the controversy surrounding the different usages of the terms. O'Halloran (2011b: 221) reflects:

The terms semiotic mode and modality are used in various ways in multimodal research, most typically in a manner which is interchangeable with the term semiotic resource (eg Baldry & Thibault, 2006; Bateman, 2008; Jewitt, 2009a; Kress & van Leeuwen, 1996, 2001; O'Halloran, 2004; van Leeuwen, 2005a). However, as Bateman (2011) points out, the term semiotic mode (and modality) is most often used loosely and in an ill-defined manner

Foremost, the term 'semiotic resource' is generally understood as a resource for making meaning. Jewitt (2008: 17) argues that "[p]eople express meanings through their selection from the semiotic resources that are available to them in a particular moment". Jewitt (2008: 18) draws the comparison with Charles Peirce's semiotics, analogising that "signs are a product of a social process of sign making in which a person (sign maker) brings together a semiotic resource (a signifier) with a meaning (the signified) that they want to express". Expanding the notion of a semiotic resource as a signifier, Baldry & Thibault (2006: 18) also define "[a] semiotic resource system is thus a system of possible meanings and forms typically used to make meanings in particular contexts".

However, arguably within Systemic Functional Theory, the term 'semiotic resource' has connotations beyond just a resource for making meaning, but implies the nature of the resource as well. Halliday (1978) famously describes language as a 'social semiotic'. As a semiotic resource, language possesses 1) an expression and a content plane and 2) systems operating on each plane. The systems for language are categorised according to the metafunctions they realise, described through the

systems such as Transitivity, Mood and Modality and Theme. Extrapolating from that, Lim (2005: 53) argues:

Following Halliday (1978), a guideline on that nature of semiotic resources and systems from the Systemic Functional Linguistics perspective can be established. A semiotic resource possesses a content plane, where a set of grammar operates, and an expression plane, where the content plane is articulated. In addition to that, systems operating within a network are also present on each of the strata or planes.

As such, the working definition in this thesis for the term ‘semiotic resource’ includes language and images but also gestures, positioning and movement in the classroom by the teacher. Theorising from the field of theatre studies, Marinis (1993) describes the use of gesture, positioning and movement in the classroom as the semiotics of performance. Marinis (1993) adopts the perspective of the stage performance as a text and the performer’s use of corporeal resources as semiotic resources. This understanding is extended to the teacher’s use of corporeal resources in pedagogic discourse in my thesis.

From the social semiotics perspective, Kress (2001, 2004) and Jewitt (2007, 2008) prefer the term ‘mode’ to ‘semiotic resource’. Jewitt (2008: 17) distinguishes a mode as “an organised set of resources for making meaning”. Jewitt (2008: 17) adds that “[i]n order for something to ‘be a mode’ there needs to be a shared cultural sense of a set of resources and how these can be organised to realise meaning”.

Hence, the term 'mode' is used to define an assemblage of semiotic resources that have been regularised in its usage and understanding within a culture.

While it can be useful to distinguish between 'semiotic resource' and 'mode', the term 'semiotic resource' is preferred in this thesis. 'Semiotic resource', as used in this thesis, is premised on having both an organised and regularised nature. In order for semiotic resources to make meaning in the classroom, they have to be organised and 'regularised' in their usage within a semiotic community (Lim, 2004). The term 'mode' is reserved for another use, as explicated in the following discussion.

From the Systemic Functional Linguistics perspective, the use of the term 'mode' by Halliday (1978) is to draw the distinction of language being in the 'written mode' or 'spoken mode'. O'Halloran et al. (2010: 21) explain that Halliday (1978) has used the term "in a more general sense to the role of language within a situational context". They also cite Kress & van Leeuwen's (2001: 21) distinction between mode and media as mode being on the 'content' side of the theoretical division into content-expression, and medium, which is on the 'expression' side. Apart from that, other researchers see modes more generally as means of representing, and media as means of disseminating (see, for example, Constantinou, 2005: 609 and LeVine & Scollon, 2004: 2).

In addition, O'Halloran et al. (2010) argue that "the term 'mode' is closely related in many uses to the term 'modality, as in the comment by Baldry & Thibault (2006: 4) that "different semiotic modalities make different meanings in different ways according to the different media of expression they use". Following Kress & van

Leeuwen (2001: 22), the term 'media' is used to define the "material resources used in the production of semiotic products and events, including both the tools and materials used". Within Systemic Functional Linguistics, however, the term 'modality' has another specific use within both Halliday's grammar – as a system of the interpersonal metafunction – and more generally to refer to language and other semiotic systems having similar semantic potential, such as music and other sonic sign systems (see, for example, van Leeuwen, 1999).

In keeping with the usage of mode and modality in Systemic Functional Theory and its usage in other disciplines such as information and computer science, the working definition for a modality and mode in this thesis is used in reference to the sensory modalities, that is, the visual, oral, auditory, somatic and kinesthetic modality, by which human beings experience the world. Hence, one may rightly speak of the discourse being in the visual modality when in the written mode and in the auditory modality when in the spoken mode.

My thesis follows the use of terms in the SF-MDA approach as exemplified by O'Halloran (2011a) and others. O'Halloran (2011a: 121) explains:

Semiotic resource is used to describe the resources (or modes) (eg language, image, gesture and architecture) which integrate across sensory modalities (eg visual, auditory, tactile, olfactory, gustatory, kinesthetic) in multimodal texts, discourses and events, collectively called multimodal phenomena"...
The medium is the means through which the multimodal phenomena

materialize (eg newspaper, television, computer or material object and event)

In her investigation of the Mathematics classroom, O'Halloran (in press) also explicates that:

The major modalities are the visual modality (visual perception), the aural modality (hearing) and haptic modalities (tactile and proprioception which are the sense of touch and the perception of body awareness respectively). Other modalities include gustation (sense of taste), olfaction (sense of smell) and modalities involving perceptions of temperature, pain and the sense of balance... Modalities are grouped into four categories: visual, aural, haptic and others, with a focus on the visual and aural modalities in the classroom.

While it is accurate to describe texts as both multimodal and multisemiotic, the different implications of the two terms must be recognised. Describing a text as multimodal, foregrounds the different modalities by which the text communicates its meanings. Describing a text as multisemiotic, foregrounds the variety of semiotic resources co-deployed in the construction of its meanings. O'Halloran (2011b: 222) also argues that "the distinction between semiotic resources and sensory modalities permits inter-semiotic activity to be correlated with inter-modal relations across different modalities".

Other fundamental questions that remain contested include whether images and gestures have a stratified content plane along with an expression plane with different systems, like language. Researchers such as Baldry (2000), O'Halloran

(2004c, 2005) and Lim (2004, 2006), following O'Toole's (1994/2010) approach to images have categorised images to be operating on different ranks and scales, like the structuring of language into expression plane and the stratified content plane, which comprises a lexico-grammar and a discourse semantics strata. While applying the principle of stratification to images and other resources, O'Halloran (2008b: 449) emphasises that the systems for images are not the same as those for language, "which is an obvious point given the differences between the two semiotic resources". As such, they require different descriptive categories and analytical approaches. Nonetheless, she argues that "the systems of the different semiotic resources- language, visual imagery and symbolism- can however be theoretically integrated" (O'Halloran, 2008a: 234). Analyses stemming from this theoretical perspective have yield productive insights and understanding into meanings made in images and films. Yet, there remain others, such as Forceville (2007) and Machin (2007) who express doubt on whether images operate in systems on ranks and scales, preferring to explore the possibility of images offering a 'lexicon' of meanings. As Bjorkvall (2008: 12) notes:

More particularly, Machin sets out to examine whether there is a lexicon of elements or signs in images that can be combined to create meaning in a predictable way. He then asks if it is reasonable to say that there is a finite system of more or less arbitrary rules for such combinations. The conclusion is that it is hard to find anything resembling a lexicon in images because it is difficult to identify discrete components.

Even the question of whether language is a single semiotic resource or is, in itself, intrinsically multimodal is problematised. While most researchers have generally affirmed that language is a semiotic resource or mode, depending on the terminology usage, Matthiessen (2007) has proposed that language is inherently multimodal. He explains that adopting the views “from above”, “from below” and a “stratal view” on the semiotic system of language present a starting point in exploration of multimodality “since this semiotic system is an inherently multimodal one” (Matthiessen, 2007: 4).

Increasing the complexities further, meanings are not only multiplied when co-deployed with a range of semiotic resources in a multimodal text, but has been suggested to multiply across the metafunctions within a single semiotic resource as well. This increases exponentially the complexities in multimodal discourse. As Lemke (in press) argues:

Moreover, this multiplicative specification of meaning is happening along all three meaning axes. So there is in this sense a double multiplication: each semiotic modality multiplied by each of the others in use, and each axis of meaningfulness of each modality multiplied by each other axis, both within that modality, and across all the modalities.

Given the nascence of this domain of enquiry, fundamental questions surrounding the nature of semiotic resources, modalities, such as how and what happens when the resources are co-deployed in a text, and what is the most appropriate theoretical position and methodological approach to adopt towards the

investigation of multimodal discourse, remain contested and debated. Smith et al. (2011: 354) suggest that the challenge in multimodal research is “understanding and relating the multiplicity of analytical approaches which have been drawn upon for or are relevant to the development of a comprehensive and integrated account of multimodal discourse”. This is consistent with Constantinou’s (2005: 604) earlier observation that “terminological and conceptual agreement between the different approaches to multimodality would further aid their complementarity or their ‘working relationship’”.

However, this is no mean feat. While “a variety of disciplines and theoretical approaches can be used to explore different aspects of the multimodal landscape” (Bezemer & Jewitt, 2009: 180), we should be careful not to “simply blindly impose our models and methods onto new areas of study without being sensitive to the way that this may serve to conceal its very nature and of course where therefore it might reveal its nature” (Machin, 2009: 189). As Machin (2007: xi) observes, “[w]hilst those from a linguistics background are often ignorant of both theoretical and practical approaches outside their specific academic field, the opposite lack of engagement in linguistics, in systematic procedure for both textual and visual modalities, is true of many media researchers”. Perhaps, unsurprising, considering the diverse disciplinary training and theoretical background the researchers bring with them as they encounter the immense possibilities multimodal texts offer and entail. In light of this danger, O’Halloran & Smith (accepted for publication b) reason, “[o]ne must sort through the complementarities, inconsistencies and redundancies of the different approaches and perspectives, working out which types of analysis suit which

research project – some approaches being more appropriate to certain tasks than others”.

Given the ramifications of each theoretical stance, a satisfying reconciliation and integration of positions seem elusive, and, arguably perhaps, even unnecessary, at this point. Researchers continue working along their orientations and assumptions and in so doing, contribute in pushing the boundaries of multimodal studies and glean fresh insights into the multimodal phenomenon. The range of theoretical perspectives of the multimodal phenomenon seems to be both helpful and necessary to elucidate the complexities inherent to multimodal texts and the challenges in analysing them. More significantly, the diversity of approaches has led, rather productively, to a range of resultant multimodal discourse analysis with different intents, interests and insights.

1.2.2.3 Multimodality as Analytical Approach

O’Halloran (2011a: 123) explains that “[w]hile multimodality can be characterized as ‘a domain of enquiry’ (Kress, 2009: 54) (visual design, displayed art, mathematics, hypermedia, education and so forth), theories, descriptions and methodologies specific to MDA (multimodal discourse analysis) are clearly required”. Not only that, “[t]he task of capturing and analysing complex multimodal constructions of reality becomes imperative as the realm of the visual and the multimodal increasingly move alongside the linguistic through the advance of technology” (O’Halloran, 2008b: 470).

There is no doubt that technology has changed our meaning potential and effectively transformed our semiotic landscape. Technology has also allowed us to map the process of semiosis, that is, the logogenesis of the multimodal text. Technology allows us to study the dynamics of the discourse through the ways patterns of meaning unfold, leading to other patterns of meaning. O'Halloran, Tan, Smith & Podlasov (2011: 110) note that “[a]dvances in recent years in software tools for the study of complex phenomena, particularly those taken up and developed in application to the physical sciences (including, importantly, data visualization resources), offer further opportunities for those attempting to account for the immense complexities of multimodal communication and culture”.

The technological ability to video-record data in the classroom enables unprecedented analysis of multimodal discourse beyond the traditional focus on language. Christie (2002: 1) explains that the “the invention of the tape recorder, later augmented by the emergence of cheap video recording facilities, rendered much more accessible than hitherto the whole enterprise of recording talk and analysing it”. Just as tape recorders revolutionised classroom research by allowing studies in the sound of language, likewise, video recording along with new digital technology is changing classroom research, by allowing studies into movement, gesture and other semiotic resources in addition to language. Flewitt (2006) observes that the use of video recording to investigate pedagogic discourse can reveal how students deploy “the full range of material and bodily resources available to them to make and express meaning”. She argues that this forces “a reexamination of Vygotskian accounts of the relationship between thought and language by

producing grounded arguments for a pluralistic interpretation of the construction and negotiation of meaning” (Flewitt, 2006: 46). In addition to foregrounding the multisemiotic nature of pedagogic discourse, other contributions of using video recording include “the multiple interpretations derived from very close, repeated viewing and analysis of the text as audiovisual data, in such a way not readily available prior to the development of sophisticated interactive computational playback and interface/annotation resources” (O’Halloran, Tan, Smith & Podlasov, submitted for publication). Along with the possibilities afforded by the technology of video recording, Flewitt (2006: 25) notes that it will bring along with it “a reexamination of established methodological and ethical practices in educational research and has implications for the construction of knowledge theory in the field of education”.

O’Halloran et al. (submitted for publication) argue that interactive digital media holds the promise for advancement in multimodal techniques and development in the field of multimodal studies. They explain that “[d]igital semiotics makes such insights more accessible to testing and application through empirical analysis, and provides a much greater capacity for insight into phenomena not readily accessible with the ‘naked eye’, thus providing an opportunity to advance our theoretical understanding of multimodal semiosis”.

1.2.2.3.1 Challenges to Practice

The third challenge related to the dimension of multimodality as analytical approach is the methodological affordances and constraints in the practice of analysing multisemiotic texts multimodally. As O'Halloran et al. (2010: 3) observe:

While efficient and sophisticated interactive digital technologies have been developed for the design, manipulation and dissemination of multimedia texts and artifacts (eg such as Adobe™, Picasa™, YouTube, etc) which have been quickly adopted by the mainstream society, software tools for the scholarly analysis of multimodal data have tended to be less developed and less widely used by those most concerned with the study of human communication.

Explorations in multimodal studies have begun with mostly investigating static page-bound text. Bateman (2008) insists that the current theoretical apparatus has not been developed to the level of sophistication and affordances for dynamic multimodal texts. O'Halloran & Smith (accepted for publication b) acknowledge that "in practical terms, the analysis of static art is relatively feasible even within the constraints of the printed page". However, they argue that multimodal analysis of dynamic texts, on the other hand, "points clearly to the difficulties of representing on the printed page the mass and complexity of detail involved in multimodal analysis, and of capturing the dynamism and dimensionality of audiovisual film, hypermedia navigation etc".

Another challenge to dynamic multimodal text is that it inevitably consists of an immensely large corpus of data. The collection of multimodal data is usually made possible through video-recording technology. The data is, in a sense, resemiotised into dynamic film texts for annotation and analysis. As Flewitt (2006: 34) explains, “[a]ny kind of transcription, whether of audio or video data, is by definition a process of transformation, where complex, richly situated phenomena are reduced for the purpose of analysis”.

A detailed analysis of every aspect of the multimodal text often requires time-consuming manual annotation. The tedium and enormity of the task may be alleviated, to some extent, through semi-automated software. The traditional annotation and analysis through primarily written language is also proving to be inadequate to represent the complexities of the multimodal data. Given also the large corpus and the complexities in multimodal texts, there is a need for effective visualisation tools, to foreground trends and patterns in the analysis, allowing for comparisons and contrasts and conclusions based on qualitative and quantitative justifications.

It can possibly be argued that one of the factors for the fledging developments in the theory is related to the lack of adequate and satisfactory methodologies and platforms to manage the complexities inherent in dynamic multimodal texts. For instance, as Smith et al. (2011) explain, the dynamic unfolding of a film text can never be done full justice by analysing it through language on a page. They conclude that “[s]uch constraint can lead towards a tendency to theoretical discursiveness and abstraction with a lack of grounding in analysis of

actual instances of text; or otherwise to an analytical focus on static visual media” (Smith et al. 2011: 354). Similarly, “highly systematic transcription schemes developed for linguistic analysis do not accommodate the complexity of dynamic visual data” (Flewitt, 2006: 45). In order to represent and analyse the logogenesis of a dynamic multimodal text, an interactive digital platform is ideal. In other words, multimodal analytical platforms and methodologies are most appropriate to annotate and analyse multimodal discourse. The development of such platforms and methodologies can advance not just the technical aspect of transcription and annotation but also foreground theoretical issues for discussion and development.

O’Halloran & Smith (accepted for publication b) reflect on the current research imperative for multimodal studies. They posit that “[w]hat is required at this stage in the development of multimodal studies as a field is the sort of empiricism of extensive text analysis such as revolutionized the study of language on the 1960s and 1970s”. Such an extensive analysis for multimodal texts might not be quite possible without the development and application of interactive digital media platforms.

As championed by many researchers using the SF-MDA approach, interdisciplinary collaborations between social scientists and computer scientists in developing a multimodal annotation and analysis software on the interactive digital media platform offer possibilities to empower multimodal discourse analysts in their endeavour to develop “theoretical and practical approaches using digital technology and incorporating transdisciplinary perspectives in the process” (O’Halloran, 2008b: 470). An interdisciplinary team formed from computer scientists and social scientists

at the Multimodal Analysis Lab in the Interactive Digital Media Institute at the National University of Singapore is in the midst of developing such software to serve these purposes. The multimodal analysis software remains at a prototypical stage at this time. As mentioned, this study trials and uses part of the prototype software along with other potential plug-ins in the software for the annotation, analysis and visualisation of the multimodal classroom data collected from two General Paper lesson in a Singapore school. The digital platforms used in this study are described in Chapter 5. While these platforms and methodologies remain far from ideal, the utilisation of these applications at the time of this study represents some of the viable approaches at that present stage of development. The inadequacies and constraints of these digital programs as surfaced in this study accentuate the need to persevere in the uphill challenge of developing appropriate software for multimodal analysis.

1.2.3 Multimodality in the Classroom

The understanding that effective teaching and learning in the classroom is not accomplished through language alone has been of interest to some educational researchers, even before a dominant focus on multimodality emerged. For example, Lawn (1999) observes that many teachers do not recognise the impact of the classroom, as the material environment, on teaching. Englund (1997: 277) also enjoins that the teacher possesses different possibilities in the construction of a lesson experience for the students and these potentials are “concretized in different

ways in different classrooms". Classroom arrangements and display have also been considered as providing pedagogic resources, serving to transmit the pedagogic practices and "fundamental regulatory principles" that govern a school (Daniels, 2001: 169). Kress et al. (2005: 18) conclude that "subjects, actualized in particular classrooms, can be inflected in radically different ways, from patriarchal to democratic". This is consistent to Seaborne & Lowe's (1977) earlier argument that a building literally 'makes' a teaching method.

Despite this, research into pedagogic discourse and interaction between teacher and students has traditionally tended to focus on an analysis of classroom language alone (see, for example, Sinclair & Coulthard, 1975; Mercer, 2000 and Walsh, 2006; 2011). More often than not, the emphasis has been on verbal exchanges, while downplaying or neglecting the meanings made in the teacher's use of gesture, positioning and movement in the classroom. As discussed earlier, the concentration on just the linguistic aspect of classroom interaction, however, fails to account for the combination of semiotic resources that together, rather than separately, construct the teaching and learning experience. Kress (2003: 35) explains that "[l]anguage alone cannot give us access to the meanings of the multimodally constituted messages; language and literacy now have to be seen as partial bearers of meaning only".

In fact, Kress et al. (2005) demonstrate that even in an English classroom, language may not always be the dominant semiotic resource. In a similar vein, Bourne and Jewitt (2003) investigate the ways in which the interpretation of a literary text is mediated and (re)construed through social interactions. Their work

suggest how multimodal analysis of pedagogic discourse contributes to a more complete understanding of the teaching and learning in the classroom. Flewitt (2006: 46) also argues that “language is only one tool in a range of human semiosis, and that individuals’ choices of semiotic modes are motivated by a complex web of interconnecting personal, institutional and social factors”. In light of this, O’Halloran (2007b: 79) explains, “[t]he study of linguistic discourse alone has theoretical limitations which have the potential to simplify and distort the actual nature of pedagogical practice”. Hence, the focus of educational research can benefit from moving beyond an emphasis on language to examine the other meaning making resources as well. This presents deeper and broader insights on how the classroom experience is constructed for students.

1.2.4 Multimodal Literacy

Unsworth (2002) and Walsh (2006) discuss the changed nature of literacy within new communicative contexts and explore the differences in pedagogy needed for ‘multimodal literacy’ combined with traditional literacy practices. The term ‘multimodal literacy’ was first proposed by Jewitt & Kress (2003) in their eponymous edited volume to represent the understanding and competency in the diverse modes through which meanings are made. Jewitt & Kress (2003) argue that information and knowledge are constructed in multimodal texts and discourses which require a multimodal literacy to fully access their meanings.

Based on Kress & Jewitt's work (see, for example, Kress, 2003, 2006, 2010; Jewitt & Kress, 2003; Kress et al., 2001, 2005 and Jewitt, 2008), it appears that the notion of multimodal literacy has two dimensions. The first dimension is with respect to the prevalence of multimodal texts, specifically though multimedia texts afforded by the digital media, hence stressing the need for a literacy to produce and access information. The second dimension concerns the recognition that the experience of teaching and learning is intrinsically multisemiotic and multimodal. Hence, there is a need to understand how the lesson experience is constructed through the teacher's use of a repertoire of semiotic resources as embodied in his/her pedagogy. Appreciating the functional affordances and constraints of these semiotic resources and modalities as well as how they are co-deployed in the orchestration of the lesson can provide understandings which may lead to more effective teaching and learning in the classroom.

This study applies both dimensions of multimodal literacy to varying extent. The first dimension of multimodal literacy forms the backdrop of this study, as the curriculum content in the lessons investigated are presented both via the traditional resources such as textbooks and whiteboards as well as technological resources such as videos and PowerPoint slides. This study also briefly discusses the functional affordances of the whiteboard and the use of video by one of the teacher in the lesson. However, the focus in this project centres on the second dimension, where the teacher's use of language, gesture, space and movement in the classroom as realised in the Lesson Microgenres (see Section 3.2.3) are analysed.

1.2.4.1 Multimodal Literacy in Multimedia Texts

The imperative for the first dimension of multimodal literacy comes from the recognition that multimodal communication is part of the human experience and especially so given the empowering social media technologies in the present day. The cause for multimodal literacy also grows proportionally more pressing as interactive digital media and information technology become even more ubiquitous (see, for example, Appadurai, 1990; Kalantzis, Cope & Harvey, 2003 and Jewitt, 2007).

Multimodal literacy acknowledges the significance of all the semiotic resources in meaning making. The semiotic resources are not reduced to paralinguistic resources which are ancillary to language, but are viewed as semiotic resources that are conferred the same status as language and are just as effective in semiosis. Albeit in affordances, these resources are different from that of language. This is because each semiotic resource has its own functional specialisation as well as its distinct “epistemological commitment” (Kress. 2003: 55).

Kress (2003: 46) explains that the “distinct representational and communicative affordances of modes lead to their functional specialisation”. For instance, “writing is better for representing events in sequence, and image is better for representing relation of elements in space” (Kress, 2006: 46). A critical part of multimodal literacy is to understand the affordances and potentials in the different semiotic resources as well as how they operate synergistically in their joint co-deployment. Kress (2003: 51) explicates that “[t]he concept of affordance gives us

the means to ask about the potentials and limitations of the different modes, and at least to begin to examine what might be real or potential losses, and what might be real gains in this move, and in what areas they might occur”.

Following from this, it can be inferred that a ‘multimodal literate’ person must thus be sensitised to the meaning potential and choices afforded to him in the production of the text, rendering in him an ability to make deliberate and effective choices in the construction and presentation of knowledge. Armed with such an understanding, the student will not only become discerning consumers of multisemiotic texts but they also will become competent producers of multimodal texts themselves.

Cope & Kalantzis (2000: 9) define pedagogy as “a teaching and learning relationship that creates the potential for building learning conditions leading to full and equitable social participation”. It is a fact that not all students are equally proficient in every mode of communication. The privileging of particular modes of learning, such as the linguistic mode, might disadvantage students who are not naturally inclined to this mode. The systemic domination of language makes it unusually difficult to those without a natural affinity to language to become ‘educated’. For instance, in the teaching of General Paper in Singapore, knowledge of current affairs is integral as part of the objectives of the curriculum. However, teachers often find it hard to engage students in the reading of densely worded articles and papers. With an appreciation and understanding of how information is packaged multimodally, as alternative to the written mode, knowledge can also be retrieved auditorially and visually with digital media through documentaries, films

and online news clips. In other words, multimodal literacy promises possibilities of social equity and empowerment of previously disenfranchised groups in society through education.

Kress (2003: 85) states that “[i]n as far as the school sees it as its task to provide young people with the resources to act in their society with maximal potential for autonomous action, the young will need to understand the constraints and limitations as well as the potentials and possibilities for action”. The recognition of the different semiotic resources involve in meaning making may liberate disenfranchised students who due to being less linguistically inclined, may not have performed well in the past. Now that there is greater understanding and intentional utility of the other modalities in teaching and learning, these students can have a better chance at a stronger performance. As Kress (2003) indicates, a positive and crucial outcome of the emphasis on multimodal literacy is the promotion of greater social equity and parity in education.

In light of this, Kress (2003) proposes a shift from an alphabetic literacy to a multimodal literacy. Kress (2003) argues that this will facilitate changes in how literacy is developed in school. Multimodal literacy, which is concerned with several different modes of representation, rather than one, does not lend itself easily to “competence in use” which is traditional and “oriented to the past”. Instead, multimodal literacy supports design, which “is prospective, future-oriented” and “starts from the interest and the intent of the designer” (Kress, 2003: 169). Djonov (2010: 119) proposes that “[l]iteracy should not be fragmented into different kinds of literacy such as visual literacy, digital literacy, emotional literacy, etc., which

ultimately leave the hegemony of traditional literacy untouched. It should be defined as design, as an active dynamic process of creating meaning out of multimodal semiotic resources". Literacy as design provides space for greater creativity since design of multimodal texts allows the maker of signs much more latitude in construction of texts. And unlike traditional forms of written text, where knowledge is dictated to the reader by the writer's organisation of text, multimedia texts offer readers the chance to organise the material in whatever way they want.

The notion of literacy as design is derived from the work of Cope & Kalantzis (2000), part of The New London Group, in the field of multiliteracies. More recently, Kalantzis & Cope (2005) and Healy (2008) formulated a 'Learning by Design' curriculum that is built on Cope & Kalantzis' (2000) 'multiliteracies framework'. The theories and concepts developed by The New London Group are radical at the time of their proposition and helpful in pioneering a paradigm shift away from traditional literacy. However, their focus remains very much on the contextual and ideological levels of meaning making and literacy. In other words, multiliteracies seem to be more interested in the dynamic shifts in power and meanings in socio-cultural contexts of teaching and learning rather than in the instantiation of meanings in multimodal pedagogic discourse. As such, complementing the perspective offered by multiliteracies, multimodal literacy focuses more on the specific meanings made in the consumption and production of multimodal text as well as how semiotic resources are co-deployed to package information in the text.

The distinction between multiliteracies and multimodal literacy is subtle. Researchers, (see, for example, Kress, 2003; Marsh, 2005 and Jewitt, 2007) have

observed that multiliteracies, notwithstanding its plural form, along with the new emergent literacies, tend to be “strongly focused on competencies and written lettered representation” (Jewitt 2007: 245). Multimodal literacy, on the hand, draws attention to the other modes of meaning-making beyond language. In so doing, it attempts at a more comprehensive understanding of the combination of semiotic resources that are co-deployed with language in a multimodal ensemble for pedagogical semiosis.

1.2.4.2 Multimodal Literacy in Multisemiotic Experience

The second dimension of multimodal literacy is about all the resources human beings have for meaning making. As O’Toole (1994: 15) observes, “[w]e ‘read’ people in everyday life: facial features and expression, stance, gesture, typical actions and clothing”.

While new media technology has foregrounded the multimodal nature of our communication, meanings have always been constructed and construed multimodally through the use of semiotic resources like language and corporeal resources such as gesture and postures across different sensory modalities through sight, smell, taste and touch. Norris (2004: 2) observes that “[a]ll movements, all noises, and all material objects carry interactional meanings as soon as they are perceived by a person”. In this sense, all interaction is multimodal. Our communication is more than what is said and heard but by what we perceive through expressions, gazes, gestures and movements.

Jewitt (2007: 251) observes that although “multimodal research is often associated with the introduction of new technologies, this perspective is relevant for the analysis of traditional classroom technologies”. Collins and Blot (2003) emphasise that multimodal literacy is not equivalent to the use of digital new media and the ancillary technology involved. The ways which a teacher utilises a range of corporeal resources such as gaze, gesture, positions, traditional teaching resources such as the whiteboard and classroom wall displays are also critical in constructing the teaching and learning experience in the classroom and thus invite investigation.

Hence, at the most fundamental level, multimodal literacy is about knowing and learning how human beings make meaning through the range of semiotic resources and modalities at their disposal. Cope & Kalantzis (2000: 30) assert that “any successful theory of pedagogy must be based on views about how the human mind works in society and classrooms, as well as about the nature of teaching and learning”. Kress (2000) also proposes that multimodality is biological and intrinsic to all human beings. Kress (2000: 159) draws attention to the process of synaesthesia, which he describes as “the transduction of meaning from one semiotic mode to another semiotic mode, an activity constantly performed by the brain”. In other words, the translation and interpretation of meanings across various semiotic resources, such as from language to sound and to images, occur instinctively as part of the cognitive functioning of the brain. From this perspective, it seems that multimodal literacy in sensitising the teacher and the student to synaesthesia can contribute to effective teaching and learning.

From the dual perspectives of multimodal literacy in multimodal text and in multisemiotic experience, the infusion of multimodal literacy has two aspects. They are 1) the inculcation of multimodal discourse analysis skills for students and 2) the sensitisation in the use of multimodal resources (the affordances and constraints each bring, their orchestration (contextualising relations) and their potential to shape the lesson experience) in the classroom for teachers.

Kress (2003) predicts that literacy in the new media age will change with the research and insights in multimodal literacy. He foresees that multimodal literacy will “have profound effects on human, cognitive/affective, cultural and bodily engagement with the world and on the forms and shapes of knowledge” (Kress, 2003: 1). It is with this in mind that my thesis focuses on multimodal literacy as the domain of enquiry in the investigation of multimodal pedagogic semiosis.

1.3. Research Application

1.3.1 Multimodal Pedagogic Discourse

Lemke (2002b: 75) argues that classroom learning is “an example of the general process of ecosocially-mediated development”. The meanings made by the teacher to the students represent the privileged form of knowledge that has been institutionalised through policy and syllabus, packaged into the curriculum and resemiotised in the multimodal pedagogic discourse as the lesson experience.

Initiation of the students into the various specialised fields of disciplines takes place via an immensely complex ensemble of semiotic resources and modalities. Instructional materials such as textbooks and worksheets, media of learning through computers and videos as well as pedagogical practices in the form of teaching methodologies and learning frameworks present semiotic selections for the teacher in the construction of the lesson experience for students. Pedagogic semiosis is made through the use of modalities (such as visual, aural and somatic) and semiotic resources (such as language, images, gestures, mathematical and scientific symbolism). Given their unique functional affordances, the modalities and semiotic resources specialise in particular communicative load in the construction of the classroom experience for the student. Hence, the pedagogic work performed by the teacher in the classroom entails the joint co-deployment of these modalities and semiotic resources in a multimodal ensemble.

Sociologist Basil Bernstein develops the notion of 'pedagogic discourse' as part of an intricate set of proposals to explain the "production, reproduction, and transformation of culture" (Bernstein, 1990: 180). Pedagogic discourse is not simply a general term to describe all communication in the classroom. Rather, it is used in the specialist sense in this study, following the work of Bernstein. Bernstein (1990: 183) elucidates:

We shall define pedagogic discourse as the rule which embeds a discourse of competence (skills of various kinds) into a discourse of social order in such a way that the latter always dominates the former. We shall call the discourse of transmitting specialized competences and their relation to each other

instructional discourse, and the discourse creating specialized order, relation and identity *regulative* discourse.

Given the nature of pedagogic discourse as possessing both the aspects of instruction and regulation, Bernstein (2000: 184) notes that the pedagogic discourse is said to be “a discourse without a specific discourse”, for it has no discourse of its own. Rather, the pedagogic discourse is said to be “a principle for appropriating other discourses and bringing them into a special relation with each other for the purposes of their selective transmission and acquisition”.

The understanding of the nature of the pedagogic discourse in teaching and learning, as developed by Bernstein and adapted by others such as Christie (1995, 2002, 2007), Christie & Macken-Horarik (2007, 2011), O’Halloran (2004a, 2011b) and Wignell (2007) is extended to what is described as ‘multimodal pedagogic discourse’ in this thesis. Although given that all discourse is multimodal and that adding the modifier ‘multimodal’ to pedagogic discourse is, strictly speaking, unnecessary, the nomenclature of multimodal pedagogic discourse is used in this study to foreground the multimodal nature of the pedagogic discourse investigated.

Building on the concept of pedagogic discourse, Bernstein (1990) introduces the notion of a pedagogic device which is instrumental in pedagogic discourse. As Maton & Muller (2007) explain, pedagogic discourse shapes consciousness, differentially distributing knowledge and experience. Developing this understanding, Sadovnik (1995: 10) argues that through the conceptualisation of the pedagogic device, Bernstein is concerned with more than just the description of the production

and transmission of knowledge; he is concerned with its consequences for different groups. This is because to control the device is to have access to a 'symbolic ruler of consciousnesses, a 'ruler' in both sense of having power over consciousness and measuring the legitimacy of its realisations (Maton & Muller, 2007).

Christie (1993, 2000, 2002) applies Bernstein's work on the operation of the pedagogic discourse to develop an account of pedagogic discourse analysis which draws on genre theory. Although focusing primarily on language, Christie's (1993, 1997, 2002) work on pedagogic discourse analysis provides the critical basis for the contextualisation and classification of the multimodal pedagogic discourse used in this study. This is discussed more fully in Chapter 3. Christie (1993, 1997, 2002) explains that classroom sequences constitute 'Curriculum Genres' and 'Curriculum Macrogenres' and demonstrates how the pedagogic discourse is constructed linguistically. Christie (2002) follows Bernstein's recognition of the regulative discourse embedding the instructional discourse, although she prefers to describe it as the regulative register projecting the instructional register, recasting the same notions in terms of Systemic Functional Theory. As such, Christie (2002: 25) argues:

The pedagogic discourse found in the curriculum genres of schooling functions in such a way that it is realized primarily in a first order or regulative register, to do with the overall pedagogic directions taken, their goals, pacing and sequencing, and a second order or instructional register to do with the 'content' and its specialized skills at issue. The first order or regulative register projects a second order or instructional register.

The regulative register is an important aspect of pedagogic discourse that calls for deeper investigation and analysis. Christie (2002: 162) explains that:

“the regulative register is instrumental in bringing the classroom text into being, and in determining the directions, sequencing, pacing and evaluation of activity; how the latter realizes the ‘content’ or the specialist experiential information that constitutes the substance of the teaching-learning activity and how the regulative register actually appropriates and speaks through the instructional register”.

Christie (2002: 173) also argues that “[a] successful instance of a classroom discourse will be one in which the regulative discourse appropriates and speaks through the instructional register functioning in such a way that a form of ‘regulation’ occurs, in the sense that Bernstein intended”.

Drawing also from Foucault’s (1969/1972) conceptions on power and the archaeology of knowledge, Christie (2002: 162) describes schooling as “one of the most important agencies of symbolic control in the modern world”. From the selection and use of textbooks for learning to classroom practices (see, for example, Christie & Derewianka, 2008; 2011; Lim, 2002, 2004; O’Halloran, 2005; Guo, 2004 and Unsworth, 2001) students are acculturated to the society’s norm of beliefs and behaviour. As Haneda (2009: 292) explicates:

As a member of a classroom community, each learner, as a whole person, is not only involved in collaborative exploration and construction of curriculum content but is also continuously negotiating social and academic relations,

using verbal and nonverbal means of communication, to establish her or his identity as a particular kind of person and to become a member of the community by complying with or resisting emergent practices and creating new ones.

Hence, pedagogic discourse continues to be of much interest to educational researchers and sociologists, given its significant influence and the subtlety through which this influence is exercised.

Acculturation and initiation of the students into the various specialised fields of disciplines take places via an immensely complex ensemble of semiotic resources and modalities. The pedagogic discourse is thus instrumental in building and shaping consciousness, and schools are agencies of 'symbolic control'. Hasan (2001) also describes two types of semiotic mediation that occurs in the classroom. Visible semiotic mediation is realised through the instruction of the teacher and invisible semiotic mediation is realised through the manner in which this instruction is carried out, mostly through the other semiotic resources other than language. The latter, which is often less explicitly articulated, is more ideologically laden and may perhaps be uncovered through a multimodal analysis of the pedagogic discourse. As Christie (2002: 166) observes, "[a]uthority is at its most powerful when it expresses itself in abstraction of this kind, because the human agency involved is rendered invisible in favour of the more abstract principle that is expressed".

As such, although Bernstein (1990, 2000) originally formulates the concept of instructional and regulative discourse in pedagogic discourse, in light of the language

used; it may be productive to extend the concept to multimodal pedagogic discourse. This enables an investigation on how different modalities and semiotic resources contribute in realising the instructional and regulative discourses in the classroom through the visible and invisible semiotic mediation of the multimodal resources. In focusing on the analysis of multimodal pedagogic discourse, this thesis shares the convictions espoused by Christie (2002: 24) that “[i]t is of the utmost importance to analyse and explain how the pedagogic discourses of schooling work, how access to forms of knowledge is made available, how such forms are variously distributed to persons in culture and how they function to shape consciousness”.

1.4. Summary

Chapter 1 presents the research terrain of this thesis. The research aims and questions guiding this thesis are articulated. My hypothesis is that a multimodal analysis of the teacher’s use of language, gesture, positioning and movement in the lesson is part of the teacher’s pedagogical strategy. This yields insights and understandings in the construction of the multimodal lesson experience for the students. The fields of study, namely literacy, multimodality and multimodal literacy are introduced and some of the complexities within the field are discussed. The field of application in this study is defined as multimodal pedagogic discourse and it is situated within the pioneering work of Bernstein (1990), Christie (1993, 1997, 2002) and O’Halloran (1996, 2004a).

Kress (2000: 161) declares that “it would be an unforgivable dereliction of the responsibilities of intellectuals if the potentials of representation and communication— of literacy in a very broad and metaphoric sense— offered by current developments were not fully explored, and a concerted attempt made to shape their direction”. Given the amount of work and focus on the field of multimodal studies in the recent years, the theoretical advances made have tremendous potential in informing and transforming pedagogical practices. I align with Christie & Unsworth’s (2005: 233) optimism that “the functional perspective which has inspired and maintained the development of an educational linguistics will support its expansion to address these challenges in the context of an educational semiotics informing the development of contemporary and future pedagogies of multiliteracies”.

Walsh (2011: 1) proposes that “language teachers can improve their professional practice by developing a closer understanding of classroom discourse and, in particular, by focusing on the complex relationship between language, interaction and learning”. My thesis concurs with Walsh’s (2011) argument but widens the definition of classroom discourse to include multimodal resources such as the use of gesture and space by the teacher as part of their pedagogical practice. Building on the foundational work that has been done in this field, my thesis hopes to demonstrate how a detailed multimodal analysis that is grounded in quantitative measures can buttress the argument that effective teaching and learning in the classroom is a result of the combination in the semiotic selections by the teacher to construct the classroom experience. I argue that a multimodal approach to exploring

pedagogic discourse, which is enabled by the reconstruction of what actually goes on in the classroom, through a time-based transcription of the multisemiotic video recording of the lesson, is productive. This will advance our understanding of the dynamism and complexities of semiosis and intersemiosis resultant from the joint co-deployment of the various semiotic resources and modalities in the classroom.

CHAPTER 2

METHODOLOGY AND ORIENTATION

2.1 Methodology

2.1.1 Current Approaches to Classroom Discourse

Classroom discourse has always been investigated by researchers from disparate disciplinary orientations. Sinclair & Coulthard (1975: 15) explain that an “an interest in classroom language studies dated from the 1940s. Since the 1960s and early 1970s, a great deal of research into many areas of discourse, including classroom discourse has been undertaken in the English-speaking world” (see Christie, 2002: 1). In this chapter, I briefly review some of the currently popular approaches to classroom research. Following this, the different aspects and principles underlying the SF-MDA approach for pedagogic discourse, which is the approach applied and developed in this thesis, is discussed.

Contemporary methodologies to research classroom interaction are generally categorised into three main approaches (see Walsh, 2006; 2011). They are 1) Interaction Analysis, 2) Discourse Analysis and 3) Conversation Analysis. In the first case, Interaction Analysis is favoured by Cohen, Manion & Morrison (2007) as it has been described as a more ‘scientific approach’, given that it is both quantitative and measurable. A series of observation instruments are used to record the events and features in the classroom discourse. These observation instruments are mostly

system-based. They also possess a number of fixed categories that have been previously applied to different classroom contexts. System-based observation instruments are ready made and have a proven track record. As such, they reduce the need for the approach to be validated, and allow for ease of cross comparisons between classrooms and contexts. One of the more popular system-based structured observation instruments is Bellack, Kliebard, Hyman & Smith's (1966) three part exchange: Initiation, Response, Feedback (IRF). This IRF exchange is more famously extended by Sinclair & Coulthard (1975). The same phenomenon is observed by Mehan (1979) who described it as the Initiation, Response, Evaluation (IRE) sequence. It has been touted by Edwards and Westgate (1994: 124) as being "the essential teaching exchange".

However, the validity and usefulness of the IRF sequences have also been challenged in several studies (see, for example, Mercer, 2007: 124-126). Criticism of the Interaction Analysis 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) suggest that observation instruments might be more suitable for teacher education. They argue that such system-based observation is more helpful in developing competencies and raising awareness in teachers, than in classroom research. System-based 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. Nonetheless, as Walsh (2006: 41) acknowledges, research in the tradition of interaction analysis have made

“significant contribution to our understanding of the processes of classroom interaction”.

Next, Discourse Analysis is pioneered by Sinclair & Coulthard (1975) as an approach to classroom research which is based on the categorisation of speech acts in the verbal exchanges between teacher and students. Their research framework stems from a structural-functional linguistic approach, where every speech act is related to the function it serves and is instantiated in the form of its verbal realisation. Sinclair & Coulthard (1975) outline 22 speech acts and formulate a discourse hierarchy, from the smallest being an Act, then a Move, then an Exchange, then a Transaction and finally comprising a Lesson. The discourse analysis approach aims to classify naturally occurring verbal exchanges between teacher and students by identifying patterns and referencing them to the discourse hierarchy. In explicating the different nature of discourse in the classroom, the discourse analysis approach develops our understanding in the nature of interaction between teacher and students.

The discourse analysis model has its fair share of criticism, most notably, of its “multi-functionality” in matching a speech act to a specific function as being overly simplistic. For instance, researchers such as Stubbs (1983), Dillon (1988), Woods (1992) and Mercer (2007) argue that every speech act can serve a number of functions, and this is often interlocutor and context sensitive. Levinson (1983) also stresses the complexities of classroom interactions and challenges the productivity of a speech act theory to account for gesture and behavioural traits. As such, the discourse analysis approach may not fully take into account role relationships,

contexts, and sociolinguistic norms. Wu (1998) also problematises the “hierarchical categorization” as being inadequate to demonstrate the dynamics of classroom interactions. This may lead to an over-reduction and unhelpful simplification of the pedagogic discourse. As Christie (2002: 2) observes, Sinclair & Coulthard’s (1975) study was “not a piece of educational research, in that there was no intention to improve the nature of educational practices, for their focus, as linguists, was rather different”.

Last, Conversation Analysis approach is founded on an interest in the function of language as a means of social interaction. Sacks et al. (1974) argue that interaction is both context-shaped and context-renewing, and as such, context is “both a project and a product of the participants’ actions” (see Heritage, 1997: 163). Conversation Analysis stems from the understanding that social context is constantly (re)shaped by the interlocutors’ use of language. It also proposes that “social context is a dynamically created thing that is expressed in and through the sequential organization of interaction” (Heritage, 1997: 162). As Heritage and Greatbatch (1991) explain, all institutions have an overriding goal or purpose that constraints both the actions and interactional contributions of the participants, giving each institution an unique identity. 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 Conversation

Analysis approach is better equipped to interpret and account for the multi-layered structure of classroom interaction than the previous approaches. This is because it examines the utterances in sequence and in relation to the goal of the interlocutor as well as the context of the classroom discourse.

Criticisms levelled against the Conversation Analysis approach consist mainly of the argument that this approach does not seem to express any 'order' on the dynamic and complex classroom interaction. Given the lack of preconceived categories proposed, Walsh (2006: 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. As van Lier (1996: 143) argues, the complexities of classroom interaction deny "hasty conclusions from superficially identifiable interactional tokens". Flewitt (2006: 45) also explains that "the credibility of an ethnographic research pivots only on the robustness of that the conclusions drawn are consistent with the evidence provided".

While the three approaches above 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 the semiotic resource of language alone. Other modalities of communication and semiotic resources are largely neglected or at best viewed as ancillary in pedagogic discourse. As discussed in Chapter 1, the focus on language alone, at best, provides a partial understanding to multimodal pedagogic discourse. A theoretical and practical approach that

focuses on the complex multimodal semiosis in the classroom is discussed in Section 2.1.2.

2.1.2 Systemic Functional Multimodal Discourse Analysis (SF-MDA)

Jewitt (2009b) points to three distinct approaches in the study of the multimodal phenomenon. Jewitt (2009b: 28-39) describes them as the Social Semiotic Multimodal Analysis approach, the Multimodal Discourse Analysis approach and the Multimodal Interactional Analysis approach. As mentioned in Chapter 1, the approach taken in this thesis aligns within the second approach, more specifically termed as the Systemic Functional Multimodal Discourse Analysis (SF-MDA) approach (see O'Halloran, 2007, 2008). This approach is most closely associated with the work of researchers such as O'Toole (1994/2010, 2004), Baldry (2000, 2004), Baldry & Thibault (2006), O'Halloran (2004b, 2005, 2008b, 2011b), Knox, 2009, Lim (2004, 2006), Smith et al. (2011), Stenglin (2009b, 2011), Tan (2009, 2010), Unsworth (2006b, 2008c) and Unsworth & Cleirigh (2009). The Social Semiotic Multimodal Analysis approach is pioneered by Kress & van Leeuwen (1996/2006) and the Multimodal Interactional Analysis approach is developed Scollon & Scollon (2003) and Norris (2004). Jewitt (2009b: 29) argues:

“the differences between these three approaches stem from the historical influences and directions that have shaped them, as well as the emphasis each gives to context, the internal relations within modes or modal systems (eg level and rank), and the agentive work of the sign-maker”.

Another perspective on the different approaches in multimodal studies is outlined by O'Halloran & Smith (accepted for publication a). They distinguish two main discernible strategies and describe the two corresponding approaches. The first approach "is to explain theory, using text analysis as both test and illustration of the discussion of general principles; and the other is explore actual texts, working from such analyses towards generalization". These two approaches are described as the (top-down) contextual approach and the (bottom-up) grammatical approach. O'Halloran (2011a: 122) ascribes the contextual approach to the work of Kress & van Leeuwen (2006) who shows "a particular orientation to ideology" and derives "general principles of visual design which are illustrated via text analysis". O'Halloran (2011a: 122) observes that "contextual approaches have been developed for speech, sound and music (van Leeuwen, 1999), scientific texts (Lemke, 1998b), hypermedia (Lemke, 2002b), action and gesture (Martinec, 2000, 2004), educational research (Jewitt, 2008) and literacy (Kress, 2003)". O'Halloran (2011a: 122) attributes the grammatical approach to the work of O'Toole (1994/2010) who "worked closely with 'texts' (ie. paintings, architectural designs and sculptures) to derive frameworks which can be applied to other works". She explains that "grammatical approaches to Mathematics (O'Halloran, 2005), hypermedia (Djonov, 2007) and a range of other multimodal texts (eg Bednarek & Martin, 2010) have resulted in an approach which has been called SF-MDA" (O'Halloran, 2011a: 122).

As briefly discussed in Chapter 1, SF-MDA is an extension of the Systemic Functional Theory developed by Halliday (1978, 1985). Halliday has always been interested in the pedagogic application of his theory. He developed Systemic

Functional Linguistics originally for the teaching of Mandarin from his seminar paper *Grammatical Categories in Modern Chinese* (Halliday, 1956/1976) (see Fawcett, 2000). Christie (2007: 1) observes that “[f]or Halliday, educational processes are part of the very warp and waft of life, and educational sites constitute major contexts for close analysis in language”. Systemic Functional Linguistics examines the meanings made in language through the systems choices oriented around the ideational, interpersonal and textual metafunctions (Halliday, 1985/1994; Halliday & Matthiessen, 2004).

Halliday (1985a: 4) explains that linguistics is at the same time a “kind of semiotics” because language is viewed as “one among a number of systems of meaning that, taken all together, constitute human culture”. For Djonov (2005: 46), “Systemic Functional Linguistics is thus a social semiotic theory because it models language in relation to social context”. As emphasised earlier in Chapter 1, situating the SF-MDA approach within Systemic Functional Theory is in no way privileging the linguistic model. In fact, Systemic Functional Theory is a theory of meaning, which is first applied to language through Systemic Functional Linguistics; and more recently through SF-MDA to the other semiotic resources as well. SF-MDA is succinctly described by Djonov (2005: 73) as “an analytic practice which tests the application of the key principles of Systemic Functional Linguistics to the analysis of semiotic systems other than language and their interaction with each other and with language in semiosis”. In this thesis, the productivity of the SF-MDA approach and the usefulness of its steadfast adherence to Systemic Functional Theory are tested as it is applied to multimodal pedagogic discourse.

2.1.2.1 Systemic

The use of the term 'systemic' to describe the multimodal discourse analysis approach adopted in SF-MDA is a meaningful one. Halliday (1985: 4) explains that systems of meaning are social systems. They are "modes of cultural behaviour". This is because meanings are always exchanged in interactions between people and the socio-cultural groups they represent. For example, Halliday (1978: 12) sees language and society as a "unified conception" which needs to "be investigated as a whole". The same understanding is extended to the inextricable unity between multimodal semiotic resources and society in SF-MDA as well.

The use of the term 'systemic' is a reference to the centrality of the system network framework to represent the meaning potential available in a semiotic resource. The general systems occur towards the left of the network, and the more 'delicate' systems occur towards the right of the network. This left-to-right dimension of the network is called the 'scale of delicacy'. The systems represent the paradigmatic choices between the various options and the selections are realised syntagmatically in its expression. Halliday (1978) emphasises the importance of the meaning potential represented by the system networks. Halliday (1978: 4) cautions that while context is crucial in interpreting meanings, "this is not the same thing as taking an isolated sentence and planting it out in some hothouse that we call a social context". He explains that the challenge in interpreting meanings is in "focusing attention simultaneously on the actual and the potential, interpreting both discourse

and the linguistic system that lies behind it in terms of the infinitely complex network of meaning potential that is what we call the culture” (Halliday, 1978: 5).

The paradigmatic and syntagmatic options available in the system network foreground the importance of choice in Systemic Functional Theory. In the SF-MDA approach adopted in this study, the paradigmatic options are represented as the different selections (as opposed to selections not chosen) made in a lesson as instantiated in different stages of the lesson. The paradigmatic choices in each lesson allow for comparisons and contrasts across different lessons. The syntagmatic options are represented in the combinations of selections in the logogenesis of the lesson. The syntagmatic choices allow for investigation in the multimodal semiosis through the logogenesis of each lesson in this study.

The notion of choice is central in Systemic Functional Theory. Halliday (1994: xiv) declares that “Systemic theory is a theory of meaning as choice, by which language, or any other semiotic system, is interpreted as networks of interlocking options”. Meaning is therefore made through realised choices from paradigms and in syntagms. Semiotic resources comprise networks of interlocking options from where the meaning-maker selects. As Halliday (1994: xiv-xxvi) elucidates, the choice is “not a conscious decision made in real time but a set of possible alternatives” from which choices are made in actual texts. van Leeuwen (1999: 29) explains that these choices usually “result from a convention followed unthinkingly, a habit acquired unreflectively, or an unconscious impulse”.

This choice available and exercised by the meaning-maker is also further developed by Kress (1993, 2010) in recognising the 'interest' of the sign-maker. Kress (1993) argues that all acts of meaning-making are motivated by interests. He defines interest as "the articulation and realisation of an individual's relation to an object or event, acting out of that social complex at a particular moment, in the context of an interaction with other constitutive factors of the situation which are considered as relevant by the individual" (Kress, 1993: 174). As Jewitt (2009b: 31) explains, "interest connects a person's choice of one resource over another with the social context of sign production". Kress et al. (2001: 5) argue that "the assumption is that the relation between form and meaning, signifier and signified, is never arbitrary, but that it is always motivated by the interests of the maker of the sign to find the best possible, the most plausible form of the expression of the meaning that she or he wishes to express".

As such, the perspective offered by Systemic Functional Theory, and by extension SF-MDA, is that meaning making is a result of choice. These choices may not always be conscious or intentional but they are always motivated according to the interest of the meaning-maker. In this light, the interpretation of meanings made in texts stems from Edmund Husserl's (1907/1964) conception in the phenomenology of intersubjectivity. The intersubjective position has been adopted as a useful perspective in the interpretation of meanings within the literature in Systemic Functional Theory (see, for example, Halliday, 1975, 1994; Hasan, 1992; Hasan, Cloran & Butt, 1996 and Thibault, 2004). White (2003) extends this in Systemic Functional Theory, specifically in Appraisal Theory, formulating the social

intersubjective positioning. He argues that “stance and attitude are fundamentally social rather than personal, that when speakers/writers take a stand, when they construct for themselves a particular persona or identity, it is via a process of engaging with socially-determined value positions” (White, 2003: 280). In a sense then, as applied in this study, the social intersubjective position is the general triangulation of agreement, a shared understanding, within a semiotic community towards a particular contextualised interpretation of meanings in discourse.

Other principles in Systemic Functional Theory are the principles of constituency and stratification, where the semiotic resource is organised on ranks and in strata. In terms of stratification within Systemic Functional Linguistics, it is understood that language has an expression stratum and a stratified content stratum (Halliday, 1985/1994, Halliday & Matthiessen, 2004). In terms of constituency within Systemic Functional Linguistics, the different levels in the content stratum are organised such that the levels are constituents of the higher ones. Hence, language is organised on the level of word, phrase, clause and clause complex. As discussed in Chapter 1, while the degree of fidelity to these principles differs in the various approaches to multimodality, the SF-MDA approach has a strong adherence to these principles and applies them to the other semiotic resources. For instance, O’Toole (1994/2010) extends the principle of stratification to images in his seminal work *Language of Displayed Art* where he organises an image and sculptures on the ranks of Member, Figure, Episode and Work, along the principle of constituency. Likewise, O’Toole (2004) applies the same principles and approach in his analysis of the Sydney Opera House. Baldry (2004: 84), in his analysis

of television advertisements, also argues “for the need to show how meaning is built up as a series of functional units – typically sub-phases, phases, but also potentially macrophases, minigenres and genres”.

Applying the principles of stratification and constituency is not simply an imposition of a linguistic model to the other semiotic resources. As discussed in Chapter 1, there is no illusion that the nature of semiotic resources is universal (see, for example, O’Halloran, 2008b and Machin, 2009). One of the advantages of the SF-MDA perspective, in foregrounding the notion of choice and meaning potential in system networks, along the principles of constituency and stratification is, as Machin (2009: 182) observes in O’Toole’s (1994/2010) study of painting, “to replace terms such as ‘evoke’ and ‘suggest’ that we often use to discuss works of art with systematic and stable terms that allowed us to talk in concrete terms about how such a composition communicates”. This is enabled through the meta-language which Systemic Functional Theory offers and the theoretical perspective which SF-MDA presents.

2.1.2.2 Functional

Systemic Functional Theory is concerned with the functional meanings made by the semiotic resources in society. Halliday (1994: xiii) explicates that the use of the term ‘functional’ in Systemic Functional Theory is “because the conceptual framework on which it is based is a functional one rather than a formal one”. He explains that

“[e]very text ... unfolds in some context of use”. The focus in Systemic Functional Theory is to understand and evaluate the meanings as they are used in context.

Central to the Systemic Functional Theory is the view that meaning is function in context. This is derived from the work of anthropologist Bronislaw Malinowski. Halliday (1989: 6) explains:

He [Malinowski] understood that a text written by these people into this language could not be understood by any foreigners or by people living outside this society even if translated into their own languages because each message brought more meanings than those expressed through the words, meanings that could only be understood if accompanied by the situation. Thus, Malinowski introduced the notion of context of situation, meaning by this the ‘environment of the text’.

For Halliday (1978: 2), language as a social semiotic means "interpreting language within a sociocultural context, in which the culture itself is interpreted in semiotic terms - as an information system". Hence, a major tenet in Systemic Functional Theory is that meaning is made and can only be interpreted in context. Systemic Functional Theory asserts a systematic relationship between the sociocultural context in which language occurs and the functional organisation of language (see Halliday, 1978; Halliday & Hasan, 1985). As Matthiessen (1995: 33) explains, “[c]ontext determines systems in language; but it is also construed by them”. Halliday & Hasan (1985) conceptualise the context of situation, that is, the immediate environment in which a particular instance of language is actually

occurring, namely the field (what is happening), tenor (who is taking part) and mode (role assigned to language) of discourse. In addition to the context of situation (register) stratum, Martin (1992) develops the context of culture (genre) as a higher stratum. Martin (1992) models both as dynamic open semiotic systems through the concept of semogenesis, the unfolding of meanings along different time scales. The notion of context is important not just in Systemic Functional Theory but also as observed by Machin (2009: 189), “in critical discourse analysis... it is notable that two of the best-known writers, van Dijk (1993) and Fairclough (1995), both stress the need for contextual knowledge”.

In keeping with this, the SF-MDA approach interprets meanings made by the semiotic resources, such as gesture and the use of space in positioning and movement of the teacher within its specific contexts of situation and culture. In this study, the meanings made in the classroom are located and interpreted within the different Lesson Microgenres and Lesson Genres. The Curriculum Genre Theory developed by Christie (1993, 1997, 2002) and extended by O’Halloran (1996, 2004a), discussed in Chapter 3, offers a powerful resource for situating the meanings made through the multimodal semiotic resources in the lesson within its context. The functions of pedagogic discourse as an artefact of culture and a resemiotization of the ideologies espoused by the Ministry of Education in Singapore are also discussed in Chapter 3. As such, the meanings made in the multimodal pedagogic discourse investigated in this thesis are interpreted and anchored in the contexts of situation and culture.

In SF-MDA, as it is in Systemic Functional Theory, the meaning potential of the various semiotic resources is not only represented in system networks but the meanings are also organised metafunctionally. Halliday's (1978) social semiotic theory models the meaning potential of semiotic resources into three distinct metafunctions: 1) interpersonal meaning which is the enactment of social relations; 2) ideational meaning, which is expression of our ideas about the world; and 3) textual meaning for the organisation of the meaning into coherent texts and units.

The metafunctional organisation of meanings is particularly helpful in multimodal studies as it presents a shared set of fundamentals across semiotic resources for integration and comparison. Meanings are made through the semiotic resource of language, gesture and the use of space in the classroom. The organisation of meanings across the semiotic resources thus offers a unifying platform for studies in intersemiosis. This is discussed further in Chapter 6.

2.1.2.3 Multimodal

The conceptualisation of multimodality, as phenomenon, domain of enquiry and analytical approach, is discussed in Chapter 1. Within Systemic Functional Theory though, most researchers, until recently, have focused on the semiotic resource of language, there has always been recognition that language is but one of the many semiotic resources used in meaning making. For instance, Halliday & Hasan (1985: 4) articulate:

There are many other modes of meaning, in any culture, which are outside the realm of language. These will include both art forms such as painting, sculpture, music, the dance, and so forth, and other modes of cultural behaviour that are not classified under the heading of forms of art, such as modes of exchange, modes of dress, structures of the family, and so forth. These are all bearers of meaning in the culture. Indeed we can define a culture as a set of semiotic systems, as a set of systems of meaning, all of which interrelate.

The term 'multimodal' describes both the nature of discourse and the type of approach undertaken in SF-MDA. As mentioned earlier in Chapter 1 with respect to the term 'multimodal pedagogic semiosis', adding the modifier 'multimodal' to describe the nature of any discourse is probably unnecessary, given that all discourses are arguably multimodal. However, given that most discourse analysis approaches to multimodal texts have tended to focus on language or a specific semiotic resource, the inclusion of the modifier 'multimodal' serves to differentiate the SF-MDA approach and theoretical orientation from the other monomodal approaches.

2.1.2.4 Discourse

Gee (1990/2008) specifies the distinction between the terms 'Discourse' and 'discourse'. "A *Discourse* is a socially accepted association among ways of using language, of thinking, feeling, believing, valuing, and of acting that can be used to identify oneself as a member of a socially meaningful group or 'social network', or to

signal (that one is playing) a socially meaningful 'role'" (Gee, 1990: 143). However, *discourse* (that is not capitalised) is simply "connected stretches of language that make sense, like conversations, stories, reports, arguments, essays; 'discourse' is part of 'Discourse' — 'Discourse' with a big 'D' is always more than just language" (Gee, 1990: 142). SF-MDA aligns with Gee's (1990/2008) use of 'Discourse' and follows Kress & van Leeuwen's (2001: 4) general definition of it as "socially constructed knowledge of (some aspect of) reality".

Jewitt (2009b: 31) observes that "O'Halloran's multimodal discourse analysis approaches 'discourse' at the micro-textual level". However, while detailed fine-grained analysis is a distinctiveness of the SF-MDA approach, there has also been an attempt to relate the discourse to the macro-social context and situate the analysis. O'Halloran (2011a: 135) emphasises that "[c]ontext is an essential part of any analysis, not just the immediate context of situation (the ... event and subsequent resemiotizations of that event), but the context of culture in general". In explaining that SF-MDA "reveals how instances of multimodal semiotic choices function inter-semiotically in ways which ultimately create and answer to larger patterns of social context and culture", O'Halloran (2011a), in a sense, draws the connection from *discourse* to *Discourse*.

In this thesis, the macro-social context includes the General Paper curriculum, the Ministry of Education's Desired Outcomes of Education, the educational landscape in Singapore as well as the ideologies on teaching and learning shared by the relevant stakeholders. Altogether, these factors situate the micro-textual analysis of the multimodal pedagogic discourse as they are

instantiated in the distinct stages of the lesson. The contextual background of this study, as well as an approach to relate these factors to the detailed textual analysis, are accomplished using Iedema's (2001, 2003) notion of resemiotization and Christie's (1993, 1997, 2002) Curriculum Genre Theory. The approach is discussed in Chapter 3.

2.1.2.5 Analysis

As discussed in Chapter 1, both Jewitt (2009b) and O'Halloran (2011a) have summarised some of the current approaches to multimodal studies. One of the distinctive features of SF-MDA is the bottom-up orientation where theories and ideologies are extrapolated from an intensive analysis of actual texts. However, as is discussed later in this chapter, the SF-MDA approach adopted in this thesis, while retaining the emphasis of a detailed textual analysis, proposes a quadocular perspective that is not confined to working from bottom-up only.

A rigorous analysis of the multimodal data in SF-MDA usually involves detailed transcription and annotation of the multimodal corpus. Working with multimodal data is demanding because of the many and often complex parameters and dimensions involved. Analytical approaches range from repeated viewing of data, at variable speeds, and zooming into marked or particularly unusual occurrences for discussion. As Flewitt (2006: 28) remarks, the video sequence can be reviewed "several times, with sound, without sound, in real time, slow motion and fast forward".

While there are benefits in such repeated reviews of the multimodal video sequence, if comprehensive transcriptions and annotations are not done, the analysis might appear more discursive than empirical. For instance, an ethnographic study in Kress et al. (2005: 33-34) is presented as:

Unlike John... Irene uses gaze very much to engage with the class...the teacher speaks quite slowly throughout, she speaks very clearly and audibly, strongly and deliberately,: what she has to say is given weight by all aspects of the quality and her use of her voice. Her voice is a clear sign of her authority.

The report is made from astute observations on the part of the researcher though it can be open to the criticism that it is not quantitatively verifiable. Nonetheless, given the ethnographic orientation of the research, this might not be considered as a flaw or even a necessity to be addressed.

However, from the SF-MDA perspective, a fine-grained multimodal analysis is expected because it presents empirical evidence to support the claims made about the text which are interpreted in context. O'Halloran (2009: 101) explains that SF-MDA "transcends the boundaries of a discursive description through the analysis of the actual choices which are made against the backdrop of other possible choices which could have been made".

Jewitt (2009b: 30) explains that one of the advantages of the Social Semiotic Multimodal Analysis approach, as exemplified by Bezemer & Kress' (2008) analysis of school textbooks, is that "the analytical dimensions of layout or image are generated

from the text themselves than from any pre-defined system". However, as Ochs (1979) notably argues, there is no theory-neutral analysis or transcription practices. Transcription in itself is theory and the mode of data presentation not only reflects subjectively established research aims, but also inevitably directs research findings. Hence, there is no doubt that a system, of sorts, is required for a robust textual analysis in the SF-MDA approach. However, as experienced in the undertaking of this study, the system, while arguably pre-defined, to some extent, is not immutable. While a theoretical system, based on relevant existing research and literature, is usually adopted as a guiding framework for analysis, the actual analysis of the text itself often provides feedback into the system. The recursive process of proposing frameworks and working with the text tests the productivity of the proposed systems, informs the systems and serves to advance the theoretical understanding of the field based on empirical analysis.

In this thesis, the formulation of the parameters for study, such as the contextual variables of the Lesson Microgenres in Chapter 3 and the systems for gesture in Chapter 4, is ostensibly top-down in orientation. However, the actual close analysis of the pedagogic discourse is apparently bottom-up in orientation. Through it, the adaptability and usefulness of these theories to multimodal pedagogic discourse are reflected. Hence, in the recursive process between theory guiding practice and practice informing theory, both the analytical interpretation of the multimodal text is enriched and the theoretical apparatus is refined. Martin & White (2005: 260) explain that "[f]inding the right balance between qualitative and

quantitative analysis is an important challenge as we try to deepen our understanding of evaluation in discourse”.

Given the usefulness of both the top-down and bottom-up orientations to multimodal analysis, O’Halloran & Smith (accepted for publication b) acknowledge “both the empiricism of detailed, exhaustive text analysis (coping with the challenges this raises) and the ongoing problematisation and exploration of theoretical generalization and abstraction are needed for the development of resources for and practice of multimodal text analysis”. An attempt is made to include the dual perspectives through the SF-MDA approach in this thesis. This is discussed more fully in Section 2.2.

2.2. Orientation

2.2.1 Quadnocular Theoretical Perspective

The preceding discussion of the operating principles in SF-MDA has explained O’Halloran’s (2011a) perspective of the bottom-up and top-down orientations within current multimodal studies as a recursive process. A distinctiveness of the SF-MDA approach is the centrality of the bottom-up orientation that focuses on a detailed analysis of the multimodal text. As discussed earlier, performing an exhaustive multimodal analysis on the discourse and extrapolating theories and ideas from the observation have distinct benefits. As van Leeuwen (1999: 193) observes, working on the data stratally from the source to theory, “reconnect[s] with the meaning potentials that are opened up by our physical experience of materiality”. A rigorous

quantitative analysis of the multimodal corpus also offers empirical justification for the theoretical propositions made about the nature of the text.

However, as established earlier, SF-MDA does not only focus on the actual analysis of the text at the expense of neglecting theoretical formulations and contextual influences, that is, the top-down orientation. Both orientations can be reconciled as complementary, rather than competing. In this study on multimodal pedagogic discourse, while the actual textual analysis involves a meticulous transcription and annotation of the data (such as, what the teacher says, how the teacher gesticulates and where the teacher moves in the classroom), these formal observations are analysed according to existing theoretical frameworks derived from current research and literature, for example, Systemic Functional Linguistics, Curriculum Genre Theory and Martinec's (2001, 2004) functional semantics for gesture. The application of these theoretical apparatus to the actual analysis may reveal inadequacies and disjunctions, which can result in the refinement and extension of the theory. Therefore, it is a recursive process, where the theories initiate the analyses and the analyses feedback to the theories.

Chapter 4 represents the top-down orientation in this study. The present theoretical models for modelling gesture and the existing researches for mapping space within the Systemic Functional Theory are investigated. These theoretical frameworks and systems are applied and adapted for the discourse analysis of the multimodal pedagogic semiosis. Through this, the productivity and viability of the theoretical apparatus are put to test.

Chapter 5 demonstrates the bottom-up orientation in this study. The chapter discusses the transcription, annotation and analysis of the two lessons based on the various parameters identified for study. The fine-grained analysis offers findings based on the statistical data of the multimodal choices made by the two teachers in the study. Implications from the results are discussed in Chapter 7 where feedback about the operating theoretical models and framework is discussed, thus advancing knowledge in the field.

Halliday & Matthiessen (2004: 31) advocate a “trinocular perspective” of text so as to more comprehensively interpret the meanings made. Two views of the semiotic phenomenon are represented by the bottom-up and top-down orientations. In addition to this, they propose an ‘all-round’ orientation that relates to the ideological settings in which the discourse is situated. Just as the empirical dimension of a bottom-up orientation complements the theoretical dimension of the top-down orientation, the ‘all-round’ orientation invokes the vital role of context in understanding multimodal semiosis. As Lemke (2009: 141) explains, “[m]eaning-making is essentially selective contextualization... which contexts, intertexts, and cultural patterns co-determine the construal of meaning and when (i.e. under what circumstances or conditions)”.

Chapter 3 frames the contextual factors and influences on the two lessons texts investigated in this study. The context stratum of the pedagogic discourse is discussed using Iedema’s (2001, 2003) notion of resemiotization as well as the Curriculum Genre Theory developed by Christie (1993, 1997, 2002) and extended by O’Halloran (1996, 2004a). Multimodal pedagogic semiosis is instantiated as semiotic

choices governed by normativity in each Lesson Microgenre. Applying the Curriculum Genre Theory allows for the situating of specific instances of the lesson into a Lesson Microgenre and its corresponding Lesson Genre, Curriculum Genre, Curriculum Macrogenre and Curriculum Hypergenre. The contextualisation of the specific lessons in this study is discussed in terms of the resemiotization of the ideologies and policies as espoused in the curriculum documents formulated by the Ministry of Education, Singapore.

While the trinocular perspective is useful, given the multimodal nature and emphasis in SF-MDA, another perspective, that investigates the intersemiosis across the different semiotic resources, can be appropriate. As discussed earlier in Chapter 1, meanings are made through the combination of semiotic choices which, when co-deployed in contextualising ways, can result in semantic expansions and multiplication. The semiotic resources should not only be investigated independently but also inter-dependently, in relation with the meanings made with the other semiotic resources. O'Halloran (2011a: 121) explains:

Multimodal discourse analysis is concerned with the theory and analysis of semiotic resources and the semantic expansions which occur as semiotic choices combine in multimodal phenomena. The 'inter-semiotic' (or inter-modal) relations arising from the interaction of semiotic choices, known as intersemiosis, is a central area of multimodal research.

As such, this thesis proposes adding another dimension, loosely termed, an 'all-in' orientation, to the trinocular perspective, as a theoretical space to explore

intersemiotic relations in multimodal text. Intersemiosis in the two lessons, in the meanings made through the contextualising relations of language, gesture and the use of space, as identified in this study, is discussed in Chapter 6.

The bottom-up, top-down, all-round and all-in orientations are adopted in the SF-MDA approach in this study. The 'quadnocular perspective' constructs an over-arching framework for the chapter organisation in this thesis. Altogether, the quadnocular perspective serves as a cohesive and unifying orientation that offers a more comprehensive interpretation of the meanings made in multimodal pedagogic semiosis.

2.2.2 Diachronic and Synchronic Analytical Views

Time and space are integral in all acts of meaning-making. As Lemke (2009: 143) explains, "[m]eanings are made across time, across space, in and through matter. Experience is experienced in and through time, in place and across space, in a body and in interaction with other bodies". Scollon & Scollon (2009: 177) also conclude that "[h]uman meaning-making is now understood to be accomplished in places and with materials which are predicated on rather different timescales (Lemke, 2000; Blommaert, 2005)". As such, it is vital to consider the integral role of time and space in multimodal semiosis, that is, the temporal and spatial contributions in meaning-making.

Time is embedded within the notion of the unfolding of a text in logogenesis, the development of a language in phylogenesis and the learning of a language in

ontogenesis. Meanings are made through speed, through how quickly or slowly a discourse unfolds; and duration, in how long or short the text is. Lemke (2009: 142) raises phenomenological questions on how the experience and meaning of a text changes “in what order we read it”, “how many times we read it” and “how many hours or days we spend over the course of reading it, putting it aside and picking it up again”. He argues that “a phenomenological perspective necessarily complements a semiotic one” in that it “attempts to recoup the experiential feelings and nominally subjective aspects of what it means to act and be in time and with the world” (Lemke, 2010: 141). In addition, Lemke (2009: 141) claims that a phenomenological perspective “reminds us of the importance of time, pacing, feeling, affect, and embodiment, all of which are matters that can be constructed semiotically, but which seem to elude being completely accounted for in formal, categorical terms”. The convergence of the phenomenological perspective with the semiotic perspective allows time to be broadly and arguably described as a resource for meaning-making because the manner in which the semiotic resources are organised in time has its own semantics. However, time is not like any other semiotic resources because it is necessarily always present in every act of meaning-making. The meaning-maker can only choose the speed and duration, which are, arguably, the systems of time.

There is a discernible link between timing and semiosis. van Leeuwen (2005b: 128) observes that “[s]ociologists have drawn attention to the correspondences between the timing of fundamental social activities on the one hand, and the way people think and talk about time, or enact it in symbolic forms such as music, on the

other”. As such, he argues that “[t]iming itself is also a social practice – and integrative practice, vital for the coherence of social life, for holding together most, if not all of the social practices of a society” (van Leeuwen, 2005b: 138).

Specifically, in pedagogic discourse, Christie (2002: 107) points out:

Teachers define the pace of activities in schools, establish the spatial dimensions that apply in adopting work practices, and define periods of time with which activities are to be undertaken. Considerations of time and space are both involved in defining the pedagogic subject position in construction, and they are one aspect of the realization of the regulative register. Such considerations serve to build structure and definition to the day, the week, the month and so on.

In fact, studies by Erickson (2004) and Wortham (2001) also suggest that the annual cycle of the school year is an important dimension in their analysis of teacher-student interactions on subject matter. Hence, the temporal location of the lesson within the curriculum and when the lesson takes place in the school year are also meaningful and significant in influencing the nature of pedagogic discourse that occurs.

The incessancy and relentless flow of time makes it an integral resource by which the rest of the semiotic resources make meaning with, in and through. The distributional use of modalities and semiotic resources across time, the significant semantic load placed upon certain period of time, and the allocation of time in discourses present possibilities for further investigation. This is especially pertinent in

the pedagogic setting where the demarcation of lesson time in the classroom is determined between school-bells set out in a time-table and where there is a perpetual time pressure to complete the syllabus to adequately prepare students for the final examinations. As van Leeuwen (2005b: 132) explains, “[t]ime summons may also be ‘instrumentalised’, as in the case of the alarm clock, the school bell, the church bell, the factory whistle, the traffic light, and so on. Here the power of timing becomes impersonal and institutionalised, and hence to some extent naturalised”. This suggests that the timing of the lesson, the role of timing and the systems of time such as speed and duration are meaning-making resources that deserve further investigation in pedagogic discourse.

Space is the material site in which a discourse is realised. van Leeuwen (2008: 88) argues that “[o]ur understandings of space derive from and can be linked directly to social action, to the way in which we use space in acting out social practices”. As such, the terminological category of space is taken, in the broadest sense, to mean not just the physical location such as the classroom, but also the materiality of textbooks and screens. Space can thus refer to the boundaries of the text, the co-text, inter-text, as well as the context of situation and context of culture in which informs the meanings made. Like time, space is necessarily present in all acts of semiosis. Discourse unfolds in time and occurs in a space. The temporal site of instantiation of meanings by the multimodal ensemble is time and the spatial site for realisation of multimodal semiosis is space.

In this thesis, both synchronic and diachronic analytical views of the multimodal pedagogic discourse are proposed to take into account the role of time

and space in semiosis. The synchronic analytical view is obtained when an image from the multimodal discourse is analysed. In a sense, time stands still to allow for detailed analysis. Flewitt (2006: 43) explains that “still images of particular moments ‘frozen’ in time” present “a wealth of information” for analysis. It is not unlike a dissection into a miniscule segment of time in order to explore the depth of complexities in an instance of the multimodal phenomenon. The diachronic analytical view of the text is obtained through the modelling of dynamic meaning as it unfolds over time in the analysis of the visual sequence. Such a view is made possible through the use of interactive digital media software platforms such as *Cytoscape* introduced in Chapter 5.

The recognition of the role of time and space in semiosis is hardly recent. For example, Kress & van Leeuwen (1996: 183) conceive of two overarching codes responsible for integrating different semiotic resources in texts – the code of spatial composition operates in texts where elements are spatially organised, and the code of temporal composition or rhythm which operates in dynamic texts such as dance, but which influences the reading paths through static ones such as magazines as well. The use of time and space as integrating codes for intersemiosis in multimodal discourse is discussed in Chapter 6.

Given the ubiquity of time and space and their fundamental role in semiosis, I adopt the term ‘integral resources’ to describe temporality and spatiality in multimodal discourse. Scollon & Scollon (2009: 170) propose, “[c]oupled with the new emphasis on concrete forms of human action, we suggest that a key area for developing analysis in the spatio-temporal integration of communicative modes

across differing timescales”. The formulation of the notion of integral resource to describe time and space represents an attempt to explore their proposition. The notion of an “integral resource” is productive in multimodal studies because it 1) recognises the integral role that time and space have in semiosis, 2) distinguishes time and space from the other semiotic resources selected in meaning-making, 3) shifts away from a logocentric focus by organising the analysis around time and space, 4) allows an integrated perspective of intersemiosis between semiotic resources on the expression plane as co-occurrences in the same temporal and spatial site and 5) foregrounds the integrative nature and integrating contributions of time and space in multimodal discourse. The temporal and spatial trends in the multimodal analysis and organisation of the Lesson Microgenres are detailed in Chapter 3 and 5. Chapter 6 discusses the usefulness of time and space as integral resources for understanding intersemiosis in multimodal discourse.

In addition to the quadnocular perspective discussed earlier, the multimodal pedagogic semiosis in this study is investigated from both the diachronic and synchronic analytical views. The diachronic analytical view is offered from the analysis of the logogenesis of the lesson as it unfolds in time and is situated within the Curriculum Genre Theory. The synchronic analytical view is offered from the detailed analysis of the instantiations from the text as the multimodal semiotic resources construct meanings at a specific point in time.

2.4 Summary

Chapter 2 introduces the methodology located within the SF-MDA approach. The SF-MDA approach is presented against the backdrop of other approaches to pedagogic discourse. The principles in Systemic Functional Theory that inform the SF-MDA approach are also discussed. A quadnocular perspective on multimodal discourse and the diachronic and synchronic analytical views stemming from the recognition of time and space as integral resources are proposed for this study.

Multimodal research offers much promise for classroom studies and applications. While many of the former approaches and methods in classroom research remain relevant and informative, the multimodal perspective offered in SF-MDA brings into focus the other modalities in pedagogical semiosis, and interprets the total meaning made in pedagogic discourse through the integration and interplay of the co-deployed modalities.

The SF-MDA approach, as outlined in this chapter, accentuates the need for the development of new theories and strategies in teaching and learning that takes into account multimodality. As such, the new paradigm of teaching and learning afforded through multimodal lens presents a research space inviting deeper exploration and further investigation. Likewise, the recognition of the nature of multimodal semiosis in pedagogic discourse offers viable and valuable contribution to classroom research and practices.

CHAPTER 3

CONTEXTUALISATION FROM IDEOLOGY TO INSTANCE

This chapter presents the all-round orientation from the quadnocular perspective described in Chapter 2. The focus is on the contextualisation of the lessons that are analysed in this study. The context of culture of the lessons is explored in relation to Iedema's (2001, 2003) notion of resemiotization in Section 3.1. The context of situation of the lessons is discussed in terms of Christie's (1993, 1997, 2002) Curriculum Genre Theory in Section 3.2.

3.1 Resemiotization

This chapter discusses the resemiotization of the subject General Paper, from its policy formulation at the Ministry of Education, Singapore, to its practice in a General Paper lesson. The SF-MDA approach necessitates the contextualisation of our investigation within the lesson, the English Department, the Junior College in which the data for this study was collected, and the Ministry of Education. This not only locates the analysis within the context of culture, but also presents a systematic co-relation between the actual multimodal phenomenon in the classroom with reference to the ideological values espoused by the Ministry of Education and privileged in the educational system of Singapore.

Kress et al. (2005: 17) note that there is a “balance of power between national framework and classroom practice”. It is generally understood that policy intent may not always be consistent with policy implementation. This chapter discusses how the subject General Paper is constructed and is changed from policy to practice in the classroom. General Paper is a unique subject in the sense that it does not have a fixed set of core curricular knowledge to be transmitted. This is unlike, for example, Science, History or Geography, where there is a pre-determined body of knowledge for each level. Instead, the assessment of General Paper in the Singapore-Cambridge General Certificate of Education (Advanced Level) tests the student’s ability to answer questions based on unseen passage(s), write an expository essay on a topic and develop his or her arguments based on general knowledge and experience. In light of the nature of General Paper, it is interesting to investigate how the subject is constructed and reproduced from the curriculum documents to the actual lessons in the classroom. Kress et al. (2005: 22) argue that “policy is articulated in discourses of various kinds – of targets and attainments, of ability and achievements, of economic utility and cultural values. But it is only in their articulation as signs that discourses become ‘visible’ and effective”. By this token, the multimodal pedagogic discourse in the General Paper classroom is arguably an articulation of the Ministry of Education’s ideologies and policies.

Iedema’s (2001, 2003) proposal of the notion of resemiotization can be extended to describe the implementation of the Ministry of Education’s policies in the discourse in the lesson. Iedema (2003: 41) views Bernstein’s (2000) notion of recontextualisation as a form of resemioization and defines resemiotization as how

“meaning making shifts from context to context, from practice to practice, or from one stage of a practice to the next”. Iedema (2003: 50) explains that “[r]esemiotization is crucially interested in how materiality serves to realize the social, cultural and historical structures, investments and circumstances of our time. In this way, resemiotization contributes to displacing analytical attention from discourse as structured meaning towards practice as material affordance”. Through the (re)production of curriculum objectives and values in classroom practices, the impact of government-driven policies have worked themselves into the ‘capillaries’ of the school, albeit inflected and transformed through the teachers’ resemiotization of curriculum documents.

This chapter also discusses the Curriculum Genre Theory developed by Christie (1993, 1997, 2002) and extended by O’Halloran (1996, 2004a). The Curriculum Genre Theory is proposed as a productive theory to 1) describe the levels of contextualisation from text to context, 2) account for relationships between the various elements at each generic stage, 3) explain the resemiotization of the subject General Paper as constructed in the policy and curriculum documents to its instantiation as practice in the classroom and 4) provide a sound rationale by which selection of texts for delicate analysis and cross-comparison can be made.

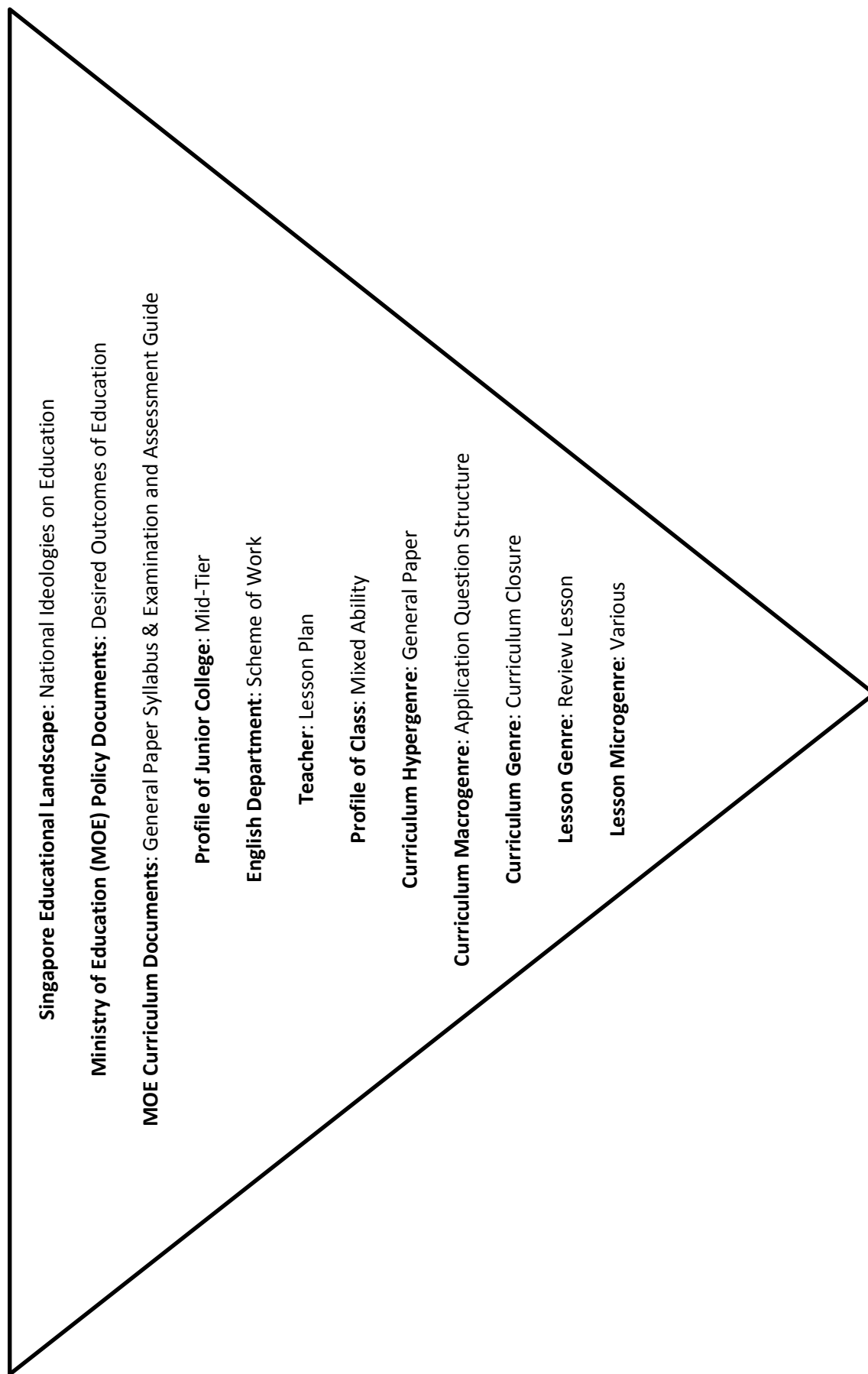


Figure 3.1 Model of Contextualisation

With regard to the last point, Christie (2002: 7) explains that “[t]he issue of what text(s) should be selected for classroom discourse analysis, and of how best to motivate and justify the selection is in fact a very important one, both theoretically and practically”. She argues that “the notion of curriculum genre is useful because it provides a principled basis for making selections of classroom text for analysis and interpretation” (Christie, 2002: 22). In this study, while an entire lesson each by the two teachers is selected for detailed text analysis in the study, the two lessons are, nevertheless, a minuscule representation of the total number of lessons that the teachers have taught to the class within the curriculum. The Curriculum Genre Theory offers a basis for the selection of the two lessons and locates them amongst all the other lessons in the curriculum.

The ensemble of meanings made in the multimodal analysis of the lesson are instantiated in a particular stage (Lesson Microgenre: for example, Discourse on General Knowledge) of a lesson and the type of lesson (Lesson Genre: for example, Review Lesson). This lesson is situated within a stage in the learning of a topic (Curriculum Genre: Curriculum Closure) and the stage within a Skills and Content Topic (Curriculum Macrogenre: Application Question Structure). The topic, in turn, is one of the many Skills and Content Topics within the Subject (Curriculum Hypergenre: General Paper). The topics in the subject are determined by the English Department’s Scheme of Work which is designed to suit the profile and cater to the needs of the students in Singapore Junior College (SJC). SJC is the school in which the data for the project is collected and its profile is described in Chapter 5. The Scheme of Work is a resemiotization of the Ministry of Education’s Syllabus as well as

Examinations and Assessment documents. These curriculum documents are aligned towards the educational philosophy of the Ministry of Education, expressed in the Desired Outcomes of Education. Finally, the educational goals of the Ministry of Education are, in some ways, arguably a reflection of the popular ideologies as well as the prevalent values espoused by the Government and privileged by the people in Singapore. This is represented in the Model of Contextualisation in Figure 3.1.

3.1.1 Singapore's Educational Landscape

The educational landscape in Singapore has been progressively changing over the past decades as the Singapore's economy develops from a technical skills-based model to the current knowledge-based economy. With shifting societal values and perceptions on what is needed to prepare students to meet the challenges of the future, the Ministry of Education has been periodically reviewing its curricula and programmes. This is to ensure relevance and to equip students in the best possible manner for the future. There is a strong ideological connection made between the education of individuals to their role as citizens and in ensuring Singapore's continual economic success. Ho & Gopinathan (1999) observe that the recession in the mid-eighties in Singapore has prompted the Government to review the education system.

The review highlighted the need for education to progress in tandem with future economic needs and along with it, the importance of students to develop critical and creative thinking as well as independent learning. This goal has been reiterated time and again by the senior leadership in the Ministry of Education. For

instance, this is clearly articulated by Winston Hodge (2010), Director, Training and Development Division, Ministry of Education, in his study of the current content and reform of curricula. Hodge explains that the mission of the Ministry of Education is “to prepare a generation of thinking and committed citizens who are capable of contributing towards Singapore’s continued growth and prosperity” (Hodge, 2010: 1). As such, the Ministry of Education is “constantly revisiting its curriculum to ensure that the skills and knowledge taught in schools meet the challenges of the 21st century” (Hodge, 2010: 1).

3.1.2 Singapore Ministry of Education’s Desired Outcomes of Education

In the last decade especially, there has been a drive initiated by the Ministry of Education to introduce “greater flexibility and diversity into the education system in order to provide students with greater choice in and ownership of their learning” (Bryer, 2008: 1). This is reflected in the more broad-based curriculum which aims to develop students holistically in learning both in the classroom and beyond the classroom. A greater focus is also placed on thinking skills and creativity as well as knowledge application skills. These foci are enshrined in the Ministry of Education, Singapore (2000) policy document entitled, *Desired Outcomes of Education*. The eight core skills and values are:

1. Character Development
2. Self Management Skills
3. Social and Cooperative Skills

4. Literacy and Numeracy
5. Communication Skills
6. Information Skills
7. Thinking Skills and Creativity
8. Knowledge Application Skills

The core values and skills to nurture the ‘well-rounded persons’ are developed progressively from the primary education to the secondary education and culminate in the pre-university or Junior College education.

To better reflect and adhere to the Desired Outcomes of Education, a series of curriculum reforms and subject reviews were conducted in the last decade. This discussion examines the revised pre-university curriculum, known as the Singapore-Cambridge General Certificate of Education (Advanced Level) Curriculum, that was implemented in 2006. In particular, the core elements that make up the central knowledge skills area of the revised pre-university curriculum, and more specifically, in the subject General Paper are discussed. The other subjects in this area include Project Work and the newly launched Knowledge and Inquiry.

3.1.3 The Ministry of Education’s Advanced Level Curriculum Framework

The new Singapore-Cambridge General Certificate of Education (Advanced Level) curriculum is developed jointly by the Ministry of Education, the Singapore Examinations and Assessment Board and the University of Cambridge Local Examinations Syndicate. Its expressed aim is to prepare students for the changes and

challenges in the 21st century. The objectives are no less ambitious than the former. In the Ministry of Education, Singapore (2006) policy document, *Breath and Flexibility: The new A-Level Curriculum*, the Singapore Examinations and Assessment Board enumerates the objectives. The new curriculum is to build on depth of knowledge, breath of study and multi-disciplinary learning. It is also to encourage new approaches to learning, inculcate a wide range of skills and develop critical and creative thinking.

The model of the New Singapore-Cambridge General Certificate of Education (Advanced Level) Curriculum is depicted in Figure 3.2. The circular introducing the new curriculum is also reproduced in Appendix I. The curriculum is presented through a framework which models the subject disciplines and skills into three concentric circles. The inner circle refers to the non-academic curriculum and is labelled life skills. This includes instilling sound values and character development to nurture students into socially responsible citizens. The middle circle is labelled knowledge skills and this focuses on the development of the students' thinking, processing and communication skills. The outer circle covers the content-based subject disciplines such as Languages, Humanities and the Arts, Mathematics and Sciences.

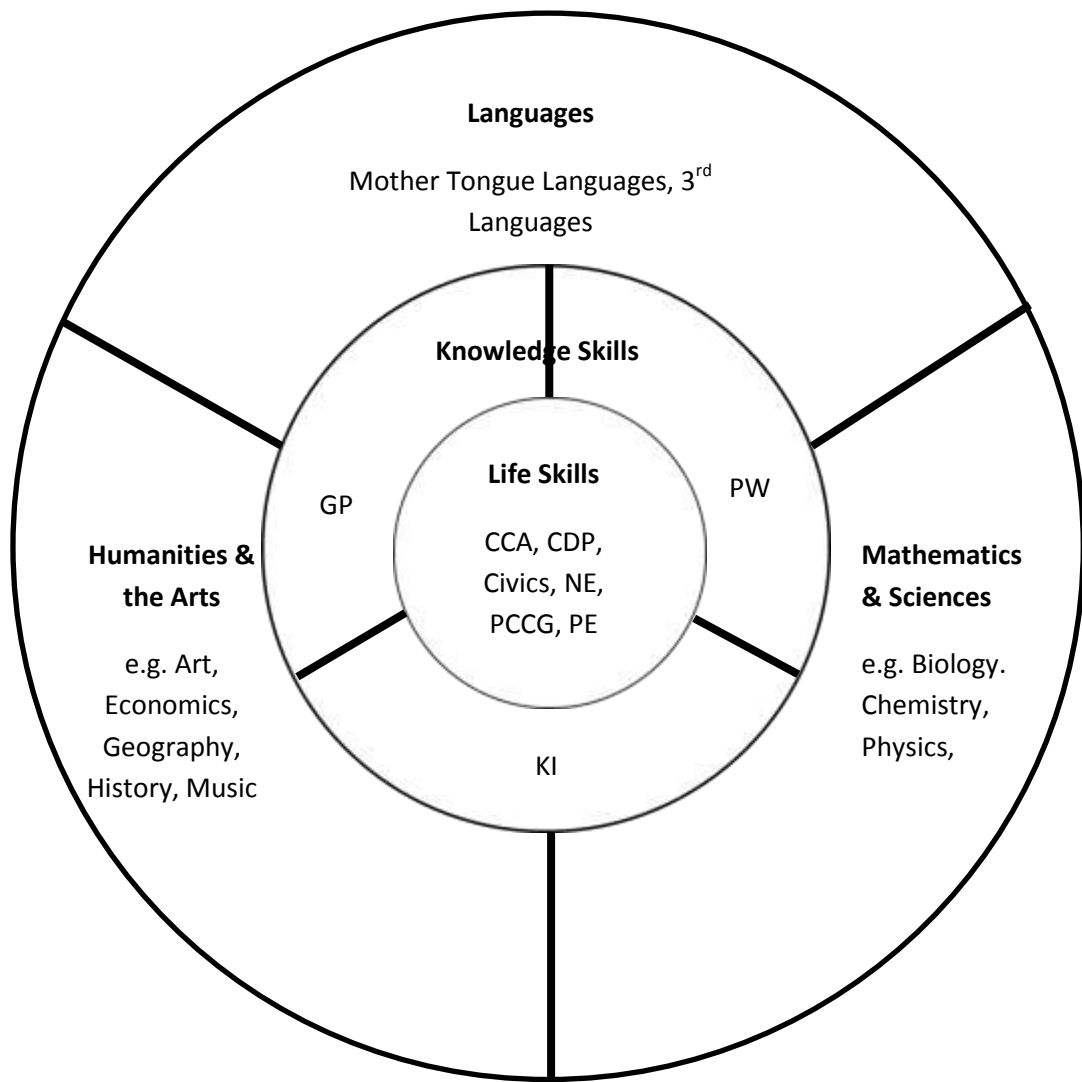


Figure 3.2 Singapore-Cambridge General Certificate of Education (Advanced Level)

(reproduced from Ministry of Education, Singapore, 2006)

Legend

CCA: Co-Curricular Activities

CDP: Character Development Programme

NE: National Education

PCCG: Pastoral Care & Career Guidance

PE: Physical Education

GP: General Paper

PW: Project Work

KI: Knowledge & Inquiry

The curriculum framework was introduced to students in the two-year programme at the pre-university level in 2006. The data collected for this project are from students who were enrolled in 2008, that is, the 3rd cohort taking the new curriculum. The data was collected in 2009 when the students were in the second year of their Junior College programme. Data collected from the 3rd cohort presents a good reflection of the impact of the new curriculum as the changes are probably stabilised and the new system is likely to be well in-place. The Ministry of Education also usually conducts a review of the curriculum every five years, with the next study due in 2012.

Under the new curriculum framework, students have to offer a number of compulsory subjects along with optional subjects. The subjects are offered at three levels of study: Higher 1 (H1), Higher 2 (H2) and Higher 3 (H3). The compulsory subjects are at H1 and they consist of General Paper, Project Work and Mother Tongue Language. In other words, all students are required to take these three subjects over the two years of their study. In addition, students are required to take at least four content subjects. Three of these subjects are at H2 and the fourth, which must be a subject drawn from a contrasting discipline, can be offered at H1 or H2. Higher ability students, as measured by their GCE O-Level results, can opt to take up to two more subjects at H3. This presents them with the opportunity to be challenged intellectually and to compete for Government scholarships in their University studies.

3.1.4 General Paper in the Ministry of Education’s Curriculum Documents

The subject General Paper is taken by all students except for a small number of higher ability students who may take the new subject, Knowledge and Inquiry, at H2 in lieu of General Paper. All the students in SJC take General Paper instead of Knowledge and Inquiry. The General Paper Examinations Syllabus 2007, in Appendix II, lists the aims of the subject, which can be categorised into three broad categories of skills development. They are:

1. Cultivating an awareness and understanding of issues of universal importance at both global and regional level.
2. Enhancing the ability to comprehend and interpret a broad range of subject matter and then applying that understanding.
3. Enhancing the ability to communicate understanding effectively and productively.

Bryer (2008) discusses the three categories of skills development. Bryer (2008: 3-4) surmises that General Paper aims to foster “a critical awareness of both continuity and change in the human experience. Students are encouraged to broaden their global outlook, but at the same time remain mindful of the historical and social experience they share with others both within Singapore and the region and beyond”. This is consistent with and reinforces the Desired Outcomes of Education as there is emphasis on the development of communication skills, information skills, thinking skills and creativity as well as knowledge application skills in General Paper. As such, the Desired Outcomes of Education 5, 6, 7, 8, that is 50%

of the Desired Outcomes of Education, can be cultivated through the subject General Paper. Hence, the attention and emphasis placed on General Paper by the Ministry of Education is reasonable and understandable given its significant contribution as a channel to achieve the Desired Outcomes of Education.

As mentioned earlier, a central question is what constitutes curriculum knowledge in General Paper. This is because there is no set text and seemingly no core content knowledge to be taught as only broad areas of study are stipulated in the syllabus. While there is no specific body of content knowledge identified for the subject General Paper, the Syllabus lists six broad areas of study. They are:

1. Historical, social, economic, political and philosophical topics
2. Science, including its history, philosophy, general principles, current developments and applications
3. Mathematical and geographical topics
4. Literature and language
5. Arts and crafts
6. Topics of local interest and national concern.

Even as the six broad areas present categories for study, the content area of General Paper is very wide and is designed to cover almost anything and everything. As a result, beyond just exposing students to a wide range of topics and issues for discussion, teachers are also expected to focus on the development of competencies in students that will enable them to excel in the examinations. Aligned to the

Curriculum Objectives in the Syllabus and Desired Outcomes of Education as expressed in Ministry of Education's policy documents, the nature of the examinations and the assessment rubrics are also guiding documents that shape how General Paper is eventually taught in the classroom. The expert knowledge in General Paper, in a sense, comprises the privileged way of thinking, knowing, arguing and writing rewarded in the assessment. To an extent then, the teaching of General Paper in the classroom is arguably assessment-led and examination-driven.

The General Paper Examinations consists of two Papers which are 90 minutes each. Paper One comprises 12 essay questions, of which the student may choose any one to write an expository essay of about 500-800 words. The topics are drawn from the six broad areas as listed above and students are expected to present an informed, critical, creative and relevant response crafted in balanced and cogent arguments. In addition, Ho (2006a: 1) notes that there may also be questions that are not based on the broad areas and attribute this as "keeping with the aim of testing not merely students' general knowledge but rather their ability to convey a sustained and well thought-out argument".

Paper Two is designed to test comprehension. Students are presented with either one or two passages of unseen text. This is followed by a series of compulsory questions that assesses the students' literal and inferential understanding, their ability to explain, evaluate and summarise as well as their command of vocabulary. The final question is the Application Question, a personal response to specific ideas from the passage. In making their personal response, the students are expected to "synthesise information and respond to concepts or ideas conveyed in the text in a

task derived from the text” (Bryer, 2008: 4). Students are also required to “consider viewpoints or issues that have been presented with and apply them to the context of their country. In expressing their own beliefs and opinions, they are expected to make close reference to the authorial viewpoints and/or how the issues dealt with in the text relate to their own country” (Bryer, 2008: 5). A specimen copy of the Singapore-Cambridge General Certificate of Education (Advanced Level) General Paper Examinations is found in Appendix III.

As a core element within the middle circle of knowledge skills, the General Paper curriculum emphasises thinking and communication skills, and in this case, more of written communication than oral communication as the General Paper examinations test solely through the written mode. In addition to possessing information on the categories of study, skills such as a competent grasp of English are expected of the students and they are required to read and write accurately in Standard English. A range of vocabulary, a variety of linguistic styles and expressions appropriate to the context, task and audience are also valued. Students are expected to formulate cogent arguments in presenting their views, or in analysing and evaluating the views of others in the General Paper examinations. They are expected to comprehend and interpret unseen materials they are presented with and answer questions set with personal responses that show evidence of both critical and creative thinking. Students are also expected to “apply that understanding by linking the information or views they have been presented with to their own experience or that of their society” (Bryer, 2008: 4). These expectations are especially pertinent for the Application Question in Paper Two which assesses the students’ abilities to

construct such responses. The topic of Application Question Structure is the focus in both the lessons investigated in this study.

3.1.5 General Paper in the English Department's Scheme of Work

While the six broad areas of study are espoused in the General Paper Syllabus, the resemiotization of this in the Scheme of Work of the English Department varies from college to college. This is true even in how the subject is recommended to be taught from the National Institute of Education, the main teacher-training institution in Singapore. For instance, Ho (2006b), a General Paper teacher-trainer from the National Institute of Education, proposes the 'Hand' approach to indicate the different knowledge domains. Ho (2006b: 201) recasts the six broad areas into five domains through the metaphor of a hand. The thumb represents Science & Technology, the Index Finger for Politics and Government, the Middle Finger for Environment, the Fourth Finger for Love, Marriage and Relationships and the Little Finger for Social Activities Mass Media and Sports. This represents an example of resemiotization from policy document to a pedagogical approach and strategy advocated for the teaching of General Paper in the classrooms.

In most Junior Colleges, the teaching of General Paper is separated into the teaching of lessons that focus on content knowledge acquisition and lessons that focus on skills and competency development. Likewise, in SJC where the data for this project is collected, the General Paper lessons are divided Content Lesson and Skills Lesson. Content Lessons are guided by Themes which are a resemiotization of the six

broad areas of study from the syllabus. These lessons typically discuss the key concepts in a theme and highlight the controversial issues within the field. For instance, in a theme on Science and Technology, arguments on Euthanasia, Abortion and Cloning are debated. In SJC, there are four guidelines proposed by the English Department which frames the teacher's selection of issues and articles for discussion. They are information that represents 1) Core Knowledge, are considered to be 2) Current Information, discussion on 3) Controversial Issues and how these issues are relevant locally in 4) Connection to Singapore. In a sense, these guidelines inform the nature of the content knowledge within a theme that is taught to the students.

In SJC, the English Department resemiotizes the six broad areas of study espoused in the Syllabus into Thematic Content Units for each school term over the two-year General Paper Programme. The themes are 1) Science & Technology, 2) Prejudice & Discrimination, 3) Globalisation, 4) Poverty, 5) Singapore Society, 6) Popular Culture, 7) Society & Self and 8) Mass Media. The reason behind the resemiotization of the six broad areas of study from the Syllabus into these Thematic Content Units, according to an interview with the Year Two Level Head, is to “foreground the more popular topics which are regularly tested in the exams; and those that students typically do well” (personal communication). Hence, even though questions on more esoteric and philosophical topics, such as “What is the value of art?” and “Is there good in suffering?” are not uncommon in the Paper One examinations, the teachers in SJC have chosen to steer the students away from that

as these questions are deemed “too difficult to score for our kind of students” (personal communication).

The purpose of the Content Lessons is mainly to equip students with information and critical awareness of issues. This is to help prepare the students for the expository essay they have to write in the General Paper Paper One Examinations. However, it also provides students with general, as well as some specific, knowledge as they evaluate the passage’s arguments in the Paper Two Examinations and answer the Application Question component. Students can apply their knowledge for exemplification and evaluation. Apart from the Application Question, familiarity to the topic which the General Paper Paper Two examinations passage(s) is based on also gives the students an added advantage in the examinations.

Skills Lessons usually run concurrently with Content lessons in a School Term of ten weeks. The English Department’s Scheme of Work recommends that in the typically three General Paper lessons for a class each week, one lesson should be focused on content and the other two on skills. However, this is not rigidly enforced, and teachers have the latitude and flexibility to modify the sequence according to the learning needs and progress of their classes. Nonetheless, by and large, skills lessons and content lessons usually follow each other closely probably because this arrangement provides variety for the students and teachers.

As discussed earlier, the skills taught are identified because they are deemed to be necessary competencies needed to answer the examinations questions. These

skills are listed in the English Department’s Scheme of Work. Together with the thematic content knowledge; they form the Skills and Content Topics, which constitute the curricula knowledge of General Paper, designed by SJC, in its resemiotization of the Ministry of Education curriculum documents.

Skills & Content Topics	GP Examinations		Desired Outcomes of Education				
	Paper 1	Paper 2	4	5	6	7	8
Question Analysis	1	1	1		1	1	
Argumentation	1	1*	1	1	1	1	1
Higher Order Thinking	1	1			1	1	1
Grammar Competency	1	1	1	1	1		
Vocabulary Knowledge	1	1	1	1	1		
Identification of Ideas from Text		1	1	1	1	1	
Evaluation of Ideas from Text		1	1	1	1	1	
Literary Language		1	1	1	1		
Inferential Questions		1	1			1	1
Content Knowledge [^]	1	1*	1			1	1
Paraphrasing		1	1	1			
Essay Structure	1		1	1	1		
Application Question Structure		1*	1	1	1		
Connection to Singapore	1	1*			1	1	1
Direct Questions		1	1	1	1		

[^] includes all the Thematic Content Units

* only in the Application Question

Desired Outcomes of Education

4. Literacy and Numeracy

5. Communication Skills

6. Information Skills

7. Thinking Skills and Creativity

8. Knowledge Application Skills

Figure 3.3 Skills & Content Topics in General Paper

The Skills & Content Topics are developed by the English Department in each Junior College and are a resemiotization of the Syllabus as well as the Examinations and Assessment Guidelines, which are correspondingly guided by the Desired Outcome of Education espoused by the Ministry of Education. Figure 3.3 displays the

Skills & Content Topics identified by SJC English Department's Scheme of Work, their alignment to the specific Desired Outcomes of Education as well as their relevance to the sections in the General Paper Examinations.

While these skills identified are mostly common across all the Junior Colleges, there are also differences in emphasis, elaboration and focus from colleges to colleges. For example, Teo & Sim (2006: 7-13), from another Junior College, break down in great detail and identify 100 skills located within 12 processes needed for General Paper in their English Department's Scheme of Work.

Hence, even as General Paper does not have a fixed body of knowledge to be taught, as reflected in the curriculum documents, the abstraction of the subject is somewhat 'concretised' in its resemiotization in the Junior College English Department's Scheme of Work as a set of skills and competencies as well as Thematic Content Units. Together, the Skills and Content Topics make up the curricular topics of the subject General Paper.

3.1.6 Accretive Learning in General Paper

Christie (2002) distinguishes between two types of learning which she terms as 'Accretive Learning' and 'Incremental Learning'. Accretive learning involves an "expansion of understanding through phasing in new knowledge and skills at selected points, when other knowledge and skills are in development, and when other tasks are still to be completed; the effect is that learning is enlarged in interconnected and overlapping ways, creating a conceptually unified body of

knowledge” (Chirstie, 2002: 126). On the other hand, incremental learning involves expansion by learning knowledge and skills in singular movements, progressing from one step to another, facilitating expansion of understanding.

The learning in the General Paper appears to be more accretive than incremental. This can be inferred from the two-year curriculum timeline observed in SJC English Department’s Scheme of Work as reproduced in Appendix IV. Students are introduced to all the inter-connected and overlapping skills components, such as answering the Application Question Structure in General Paper, within the first few months. However, they will revisit them regularly as different content areas are taught. The standards and levels of proficiency are gradually raised over the different exams situated along various milestones in their course of study. This includes the Mid-term examinations for Year One, Promotional examinations at the end of Year One, Mid-term examinations for Year Two, Preliminary examinations and the Singapore-Cambridge General Certificate of Education (Advanced Level) at the end of Year Two. The skills component, such as the skills in writing argumentative essays, critical reading, and answering of short passage-based questions, are also developed recursively through constant revision, practice and reiteration, with emphasis on different sets of Thematic Content Units.

Given that the learning of Skills and Content Topics in General Paper is more accretive rather than incremental, the sequencing of the inter-connected Skills & Content topics is often cyclical to allow for practice, diagnosis and remediation, as shown in Figure 3.4. This is evident in a General Paper teacher’s view of his experience from teaching the subject. He says, “I would inform students that there

are three stages- basic, intermediate and advanced, and I would go through these cycles. Thus I cover the skills many times, at progressively deeper levels of application, checking for deeper levels of understanding” (Teo & Sim, 2006: 13).

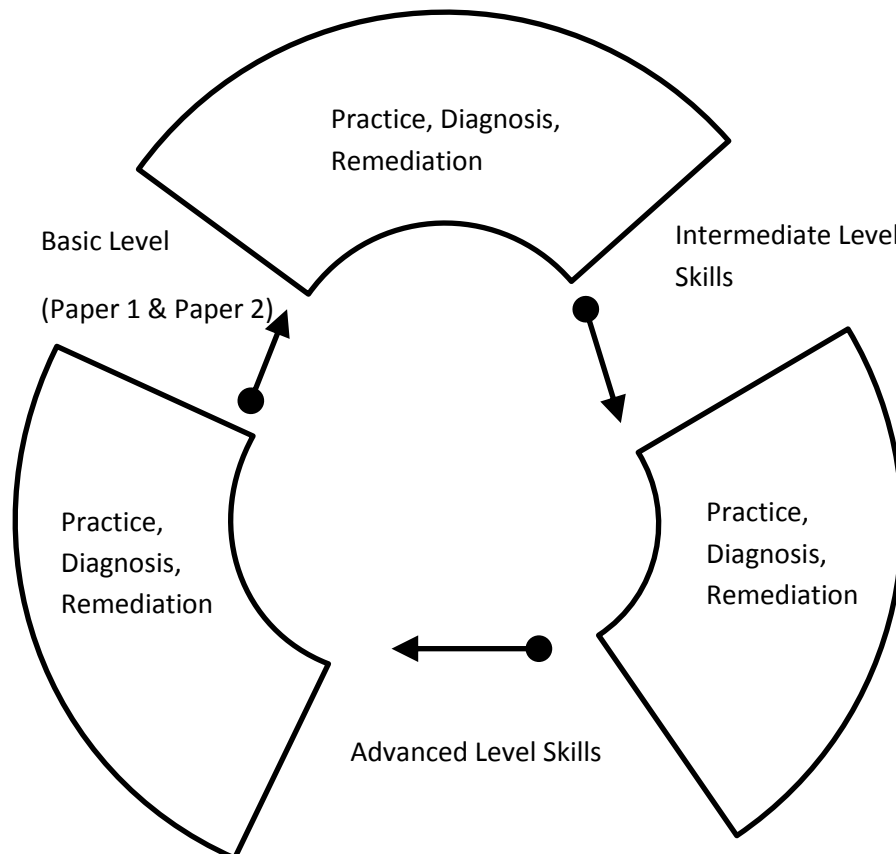


Figure 3.4 Cyclical Learning in General Paper

(reproduced from Teo & Sim, 2006: 14)

In light of the accretive nature in the learning of the overlapping Skills & Content Topics, the relationship between the Skills & Content Topics can be described as networked and inter-dependent. The implications of the interconnectivity in Skills & Content Topics and the proposal of Networked Curriculum Hypergenre model are discussed in Section 3.2.2.

3.2. Curriculum Genre Theory

Curriculum Genre Theory is developed by Christie (1993, 1997, 2002) to study the organisation and structure of learning in the classroom as well as how they are situated and related to the macro-design of the curriculum. The value in adopting the Curriculum Genre Theory to study the logogenesis of the lesson is espoused in Christie's (2002: 2) succinct argument that "[u]nless we are willing to engage seriously with the discourse patterns particular to the institution of schooling, we fail genuinely to understand it".

Christie (1993, 1997, 2002) draws from Systemic Functional Theory, such as genre theory in the Systemic Functional tradition and aspects of sociological theories by Bernstein (1999, 2000), particularly his theoretical conceptions on the pedagogic discourse. Christie (2002: 3) views "classroom activity as structured experience and associated notion of classroom work as social practice". As discussed in Chapter 1, these are to be "analysed and understood in terms of the operation of two registers, a first order or regulative register, to do with the overall goals, directions, packing and sequencing of classroom activity and with a second order or instructional register, to do with the particular 'content' being taught and learned". The two registers work "in patterned ways to bring the pedagogic activity into being, to establish goals, to introduce and sequence the teaching and learning of the field of knowledge at issue, and to evaluate the success with which the knowledge is learned". Christie (2002: 3) proposes that "pedagogic discourse can be thought of creating curriculum

genres and sometimes larger unities referred to as curriculum macrogenres". These Curriculum Genres and Curriculum Macrogenres represent units of curriculum activity. The endeavour to map out these patterns of pedagogic discourse will show the unity, development, consistency and change of the curriculum design in and over time. It will also enable comparisons across other lessons and subject disciplines.

Christie (2002: 96) also observes that "curriculum activity that is expressed mainly in discrete curriculum genres carrying little sense of progression and development in learning is found in teaching and learning at all levels of schooling". Christie (2002) argues that unless there is evidence of significant change and development in understanding and in learning of a kind that marks an entry to new forms of 'uncommonsense knowledge' (see Bernstein, 2000: 28-29), it is difficult to justify seeing the series of teaching episodes that emerges as more than a collection of discrete genres. This, Christie (2002) argues, results in ineffective teaching and learning. As such, Christie (2002) proposes the Curriculum Macrogenre model, discussed in Section 3.2.1, to exemplify effective teaching and learning in different subjects, where the Curriculum Genres are not discrete but inter-related in various ways. Christie (2002: 25) explains that this "tells us not only about the manner in which pedagogic knowledge and relationships are constructed, but it allows us to make judgements about the relative success of the different models of pedagogy and of the pedagogic subject that appears to apply".

Despite only investigating the linguistic discourse in the classroom, Christie (2002: 3) acknowledges that language, however, must not be understood as some "discretely independent entity, but rather as part of complex sets of interconnecting

forms of human semiosis". Although she focuses primarily on the role of language as the basis of Curriculum Genres and Curriculum Macrogenres, Christie (1997: 136) recognises that Curriculum Genres are "temporally sequenced and serial in character, reflecting those requirements of pedagogic activities to do with pacing and ordering the steps in which teaching and learning is done". These pedagogic activities are both constructed and experienced multimodally in time and space. As discussed in Chapter 2, time and space are understood as integral resources in semiosis through which the other semiotic resources and modalities are realised. This allows for the diachronic and synchronic analytical views of the multimodal discourse adopted in this thesis.

3.2.1 Curriculum Macrogenre & Curriculum Genre

The notion of a macrogenre is first proposed by Martin (1994, 1995), following Martin & Rothery (1980, 1981, 1986) and others' study of the written genres of schooling. Martin (1994, 1995) observes that 'elemental genres', such as recounts, reports, explanations or procedures create larger unities in written text, such as science textbooks. The larger unity created which incorporates several 'elemental' genres is described as a macrogenre.

Christie (1997, 2002) extends Martin's (1994, 1995) proposal of a macrogenre to pedagogic discourse. She explains that a Curriculum Macrogenre is "a complete unit of curriculum activity: marked by some clearly initiating stage which signals the commencement of some new learning about the topic, and it will be marked by a

clearly defined closure, expressed for example, in completion of a piece of work...a tool for evaluation of the students' learning" (Christie, 2002: 23). It represents a topic in a subject, for instance, the topic on Application Question Structure in the subject General Paper.

Like Martin (1994, 1995), a Curriculum Macrogenre constitutes elemental Curriculum Genres. "Within a curriculum macrogenre, the elemental genres are interdependent... an initiating genre will typically be followed by some genre(s) that provide elaboration, or extension or enhancement upon either the original initiating genre or upon one or other of those in the 'middle' of the total structure, or sometime upon both" (Christie, 2002: 99). Christie (2002) explains that the three stages of a Curriculum Macrogenre are the Curriculum Genre of Initiation or Orientation, Negotiation or Collaboration and Closure. The opening Curriculum Genre of Initiation or Orientation usually has a series of phases or stages. It contributes to the definition of tasks, the establishment of a framework for working, and indicates the criteria for the evaluation of students' performance. An ultimate task to be completed is very often introduced in the Curriculum Genre of Initiation. The middle Curriculum Genre of Negotiation or Collaboration shows the greatest variation from one macrogenre to another. Its nature depends on the overall goals of programme, the nature of the instructional field, the students' profile and their level of proficiency. The Curriculum Genre of Closure concludes the topic, revises and reviews the learning and usually requires the students to complete a task as an evaluation of learning.

Christie (1997, 2002) describes two models of Curriculum Macrogenres, namely the Linear and Orbital Curriculum Macrogenre. The Linear Curriculum Macrogenre progresses through a series of stages which unfold in real time, ending with a final Curriculum Genre of Closure where usually a task is completed. Figure 3.5 shows an example of the Linear Curriculum Macrogenre.

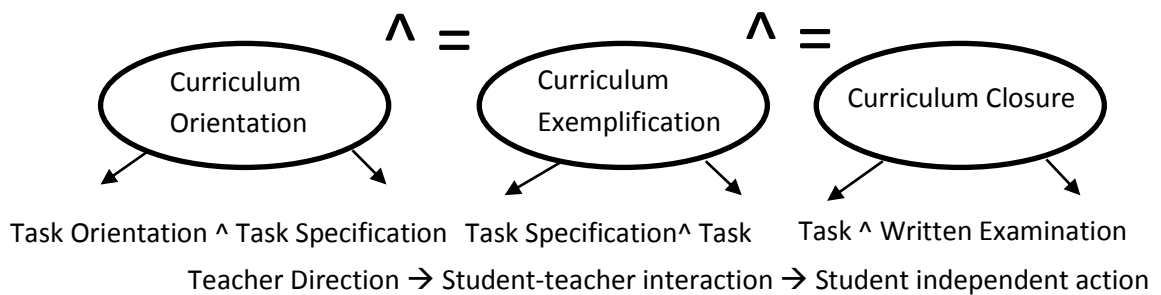


Figure 3.5 Linear Curriculum Macrogenre

(reproduced from Christie, 2002: 100)

In comparison, the Orbital Curriculum Macrogenre builds initiation through sets of interrelated steps, some undertaken in parallel phases. This results in a learning that is accretive rather than incremental. The Orbital Curriculum Macrogenre also may not have a clearly defined culminating task at the Curriculum Genre of Closure but usually involves a number of tasks, often of equal significance throughout the teaching and learning of the topic. In a sense then, the assessment of learning is usually more formative than summative in nature. Figure 3.6 shows the nucleus and satellites model which represents the Orbital Curriculum Macrogenre.

According to Christie (2002), the metaphor of an orbital structure is built on the idea of planetary activity, where satellites revolve around a larger body which is

the nucleus. She explains that “[t]he relationship of the satellites is such that though they unfold on the page in an apparently linear way, they are capable of being reordered, without significant loss of meaning” (Christie 2002: 128). While this perspective might be vulnerable to the criticism that that there is always some meaning change (gain & loss) in every reordering, the distinctiveness of the Orbital Curriculum Macrogenre is that the reordering is possible without significant loss in pedagogic meaning. In comparison, reordering is not pedagogically possible in a Linear Curriculum Macrogenre, as subsequent stages are contingent on the mastery of the previous stages, given the incremental nature of learning represented in this model.

Further to that, each of the satellite genres in the Orbital Curriculum Macrogenre “has status and significance primarily because of its relationship to the Curriculum Orientation and not because of their relationship to each other” (Christie, 2002: 132). In other words, all satellites are dependent on the nucleus, that is the Curriculum Genre of Orientation, but there are no such dependent relationships between the satellites.

Christie (1997, 2002) proposes the Orbital Curriculum Macrogenre to describe the learning of a topic in the subject Geography at the Secondary School level. Christie (1997, 2002) observes that the development of the lessons within the topic is not linear but rather orbital in nature. This is because the different elements, or Satellites, the Curriculum Genre of Negotiation, such as Exemplification and Closure, are connected to and serves the Nucleus or Curriculum Genre of Initiation. The satellites are not connected to one another and this suggests that they can be

taught and learnt in any order in the curriculum. In a sense then, apprenticeship into the subject is developed through accretive learning rather than incremental learning.

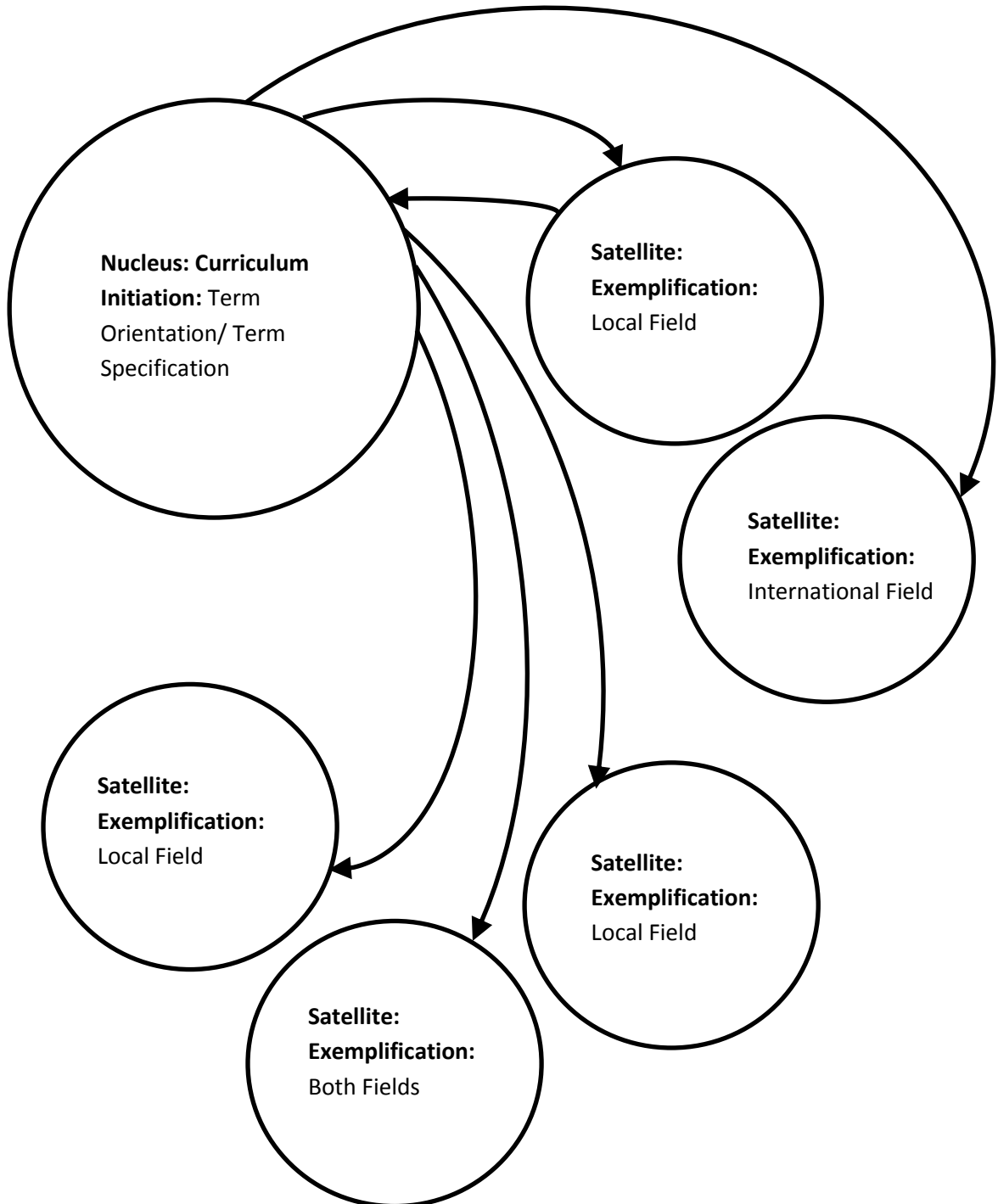


Figure 3.6 Orbital Curriculum Macrogenre

(reproduced from Christie, 2002: 132)

As discussed earlier, given the nature of learning in General Paper as being accretive in nature, the Orbital Curriculum Macrogenre model best depicts the nature of teaching in each Skills and Content Topic. Further to that, while also facilitating accretive learning, the complex inter-dependent relationships amongst and across the Skills & Content Topics in the subject, cannot be mapped using the Curriculum Macrogenre Model. This is because the Curriculum Macrogenre operates on the level of a topic. In order to map the inter-relationships between the Curriculum Macrogenres, a model on a higher rank needs to be formulated. The proposal of a Curriculum Hypergenre is discussed in Section 3.2.2.

3.2.2 Curriculum Hypergenre

Christie (1997, 2002) develops the theory of Curriculum Macrogenre and Curriculum Genre to investigate the different stages in the teaching of a topic in a subject and to map the logogenesis of a topic. However, her work does not include the nature of relationships across all the topics, which are represented by the different Curriculum Macrogenres, within a subject. In view of the productivity of the Curriculum Genre Theory, it may be useful to propose the notion of a Curriculum Hypergenre to model the overall curriculum and to depict the relationships between all the topics within a subject in the curriculum.

The idea of a hypergenre stems from Lemke's (1998a, 2002b, in press) description of fractal semantics across scales, where "macropropositions and macroproposals of text-units on larger scales... are particularly fundamental to many

existing hypergenres” (Lemke, 1998a). A Curriculum Hypergenre constitutes a network of inter-dependent Curriculum Macrogenres which represents the topics in the syllabus, that is, the entire curriculum, of the subject. Just as the Curriculum Macrogenre depicts the development of a topic in either an orbital or linear fashion, the Curriculum Hypergenre presents a complex networked relationship between the topics in the constitution of a subject.

As discussed earlier, each Skills & Content Topic in General Paper represents a Curriculum Macrogenre which, in turn consist of the three types of Curriculum Genres in an Orbital Curriculum Macrogenre Model. The Curriculum Hypergenre describes the logogenesis of the subject General Paper across the entire curriculum, as instantiated in the Skills & Content Topics or Curriculum Macrogenres. From the investigation of the different Skills and Content Topics in the subject General Paper carried out in this study, there appears to be an inter-dependent relationship between many of the Skills & Content Topics in the curriculum. The complex inter-connectivity and inter-dependency of these Skills & Content Topics are represented in the Networked Curriculum Hypergenre of General Paper in SJC. The relationships are derived from the researcher’s previous experience of teaching General Paper and his involvement in planning the Scheme of Work in SJC. While the specific connections between the Skills and Content Topics may be debated, the aim here is to demonstrate the complex inter-dependency of the Skills and Content Topics in the subject. This is displayed in Figure 3.7A-B. The figures are generated using the software *Cytoscape* described in Chapter 5.

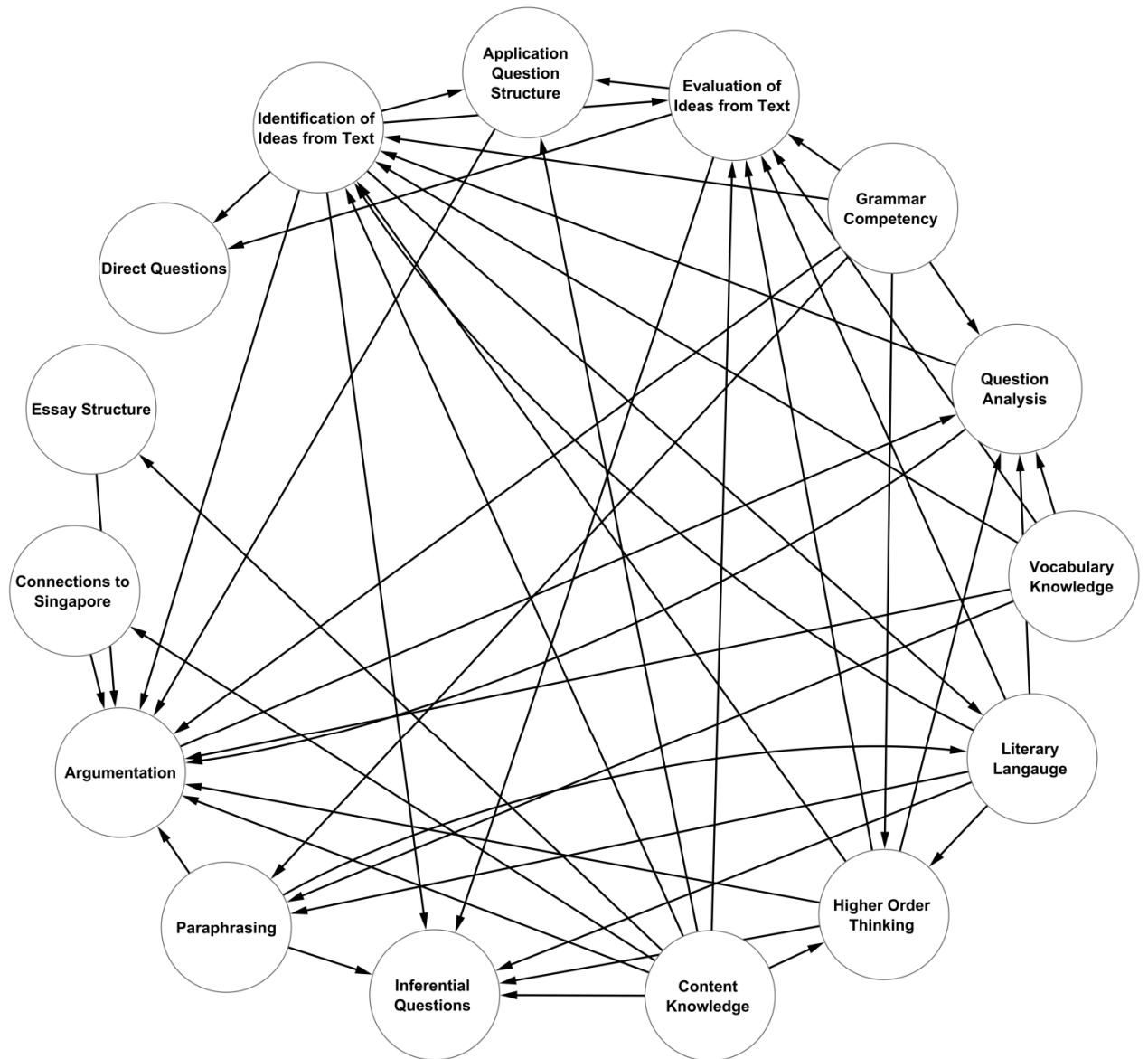


Figure 3.7A Networked Curriculum Hypergenre in Circular Layout

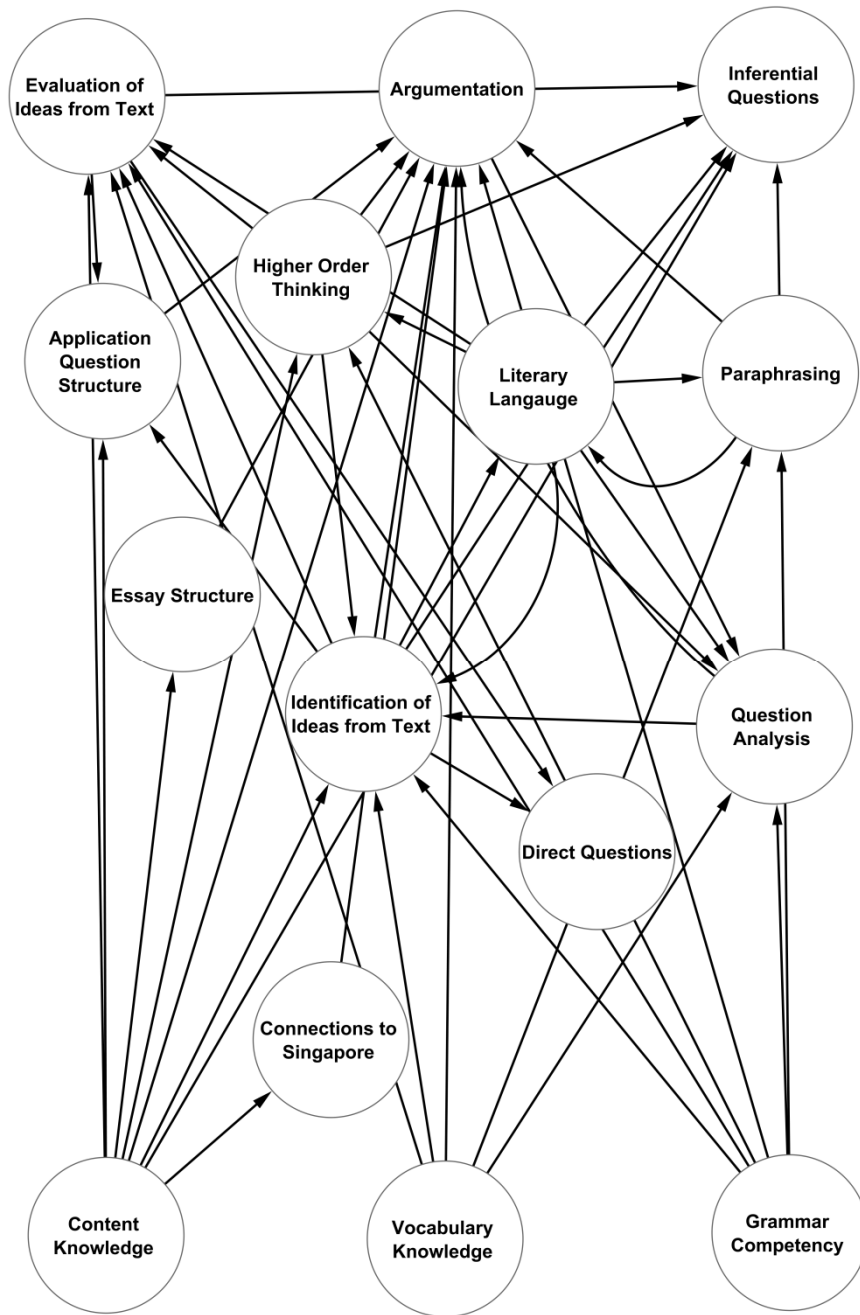


Figure 3.7B Networked Curriculum Hypergenre in Hierarchical Layout

Figure 3.7A shows the Curriculum Hypergenre in a circular layout which displays the interdependency of the Skills & Content Topics. In Figure 3.7B, the Curriculum Hypergenre in the hierarchical layout displays the foundational Skills & Content Topics, such as Grammar Competency, Vocabulary Knowledge and Content Knowledge below and the higher order Skills & Content Topics, such as Argumentation and Application Question Structure above.

From the Networked Curriculum Hypergenre Model, it is possible to identify the inter-connectivity between the Skills & Content Topics. In this case, the Skills & Content Topics of Grammar Competency, Vocabulary Knowledge and Content Knowledge each have six arrows leading from it to six other Skills & Content Topics. It is also significant to note that there are no arrows leading to these three Skills & Content Topics. This is indicative of the primary role they serve in relation to the other topics. In other words, the Skills & Content Topics of Grammar Competency, Vocabulary Knowledge and Content Knowledge are foundational to the learning in General Paper.

The Skills & Content Topics that have the most arrows leading to them are Formulating Arguments, Identification of Ideas and Evaluation of Ideas. They are considered as new knowledge phased in at selected points in the curriculum. Learning of these topics is also, in part, dependent on the learning of the foundational Skills & Content Topics, albeit it can also occur in parallel phases. For example, the Skills & Content Topic of Formulating Arguments is connected to the the Skills & Content Topics of Question Analysis, Identification of Ideas and others. As the learning in General Paper is accretive and the teaching is recursive, it might be

useful to consider the nature of the inter-connectivity between the Skills & Content Topics.

There are three possible reasons for the inter-connectivity of Skills & Content Topics in the Networked Curriculum Hypergenre. The first reason is the accretive nature of learning in General Paper as discussed earlier. Secondly, the teaching of the Skills & Content Topics in the English Department Scheme of Work is usually conducted in a recursive and cyclical manner. This is discussed in the earlier part of the chapter. Thirdly, the learning inherent in many Skills & Content Topics is not independent, but often overlaps with the other Skills & Content Topics. In turn, the learning of a Skills & Content Topic is also related to the learning of the other Skills & Content Topics, albeit at different stages of acquisition. For example, the Skills & Content Topic of Question Analysis is inter-connected with the learning of the Skills & Content Topics of Higher Order Thinking and Vocabulary Knowledge. In turn, the Skills & Content Topic of Question Analysis contributes to the learning of the Skills & Content Topic of Argumentation.

While every General Paper lesson focuses purportedly on a Skills & Content Topic, it is also useful to note that, in practice, the Skills & Content Topics may not be taught only within the lessons designed for these topics. This is observed in the two lessons investigated in this study on the Skills & Content Topic of Application Question Structure. However, there are also traces of other Skills & Content Topics that are observed in the lessons. As described in Chapter 5, the two teachers investigated in this study are given the pseudonyms, Adeline and Wilson. In Adeline's lesson, the Skills & Content Topic of Vocabulary Knowledge is evident when the

teacher explains the meaning of certain words in the Lesson Microgenre of Discourse on Language. The Skills & Content Topic of Higher Order Thinking is also observed when the teacher asks questions that provoke and promote thinking in the Lesson Microgenre of Discourse on Philosophy. Likewise in Wilson's lesson, the Skills & Content Topics of Connections to Singapore and Content Knowledge are taught through the Lesson Microgenre of Discourse on General Knowledge and Discourse of Content. The conceptualisation of the Lesson Microgenre is discussed in Section 3.2.3 and in Chapter 5.

The Curriculum Genre Theory offers the perspective of the classroom experience as a structured activity, stemming from curriculum policy design to the actual realisation in classroom practices. The pedagogic discourse is seen from the perspective of ranks and constituency. The Curriculum Hypergenre operates on the level of the Subject to model the networked relationships between the Skills & Content Topics. The Curriculum Macrogenre operates on the level of a topic to depict the connection between the nucleus and the satellites, that is the stages of teaching the topic and finally the Curriculum Genre operates on the level of lesson types, classifying the lesson as Curriculum Initiation, Negotiation or Closure.

3.2.3 Lesson Genres and Lesson Microgenre

O'Halloran (1996, 2004a), in her investigation of the Mathematics classroom, extends Christie's (1993, 1997, 2002) conceptualisation of Curriculum Macrogenre and presents an inventory of Lesson Microgenres realising the Mathematics lesson.

She explains that “actual text structure is described by the sequence of these microgenres realising the lesson” (O’Halloran, 1996: 57). O’Halloran (1996, 2004a) proposes the notion of Lesson Genres which realises each stage (Curriculum Genre) of the Curriculum Macrogenre. For instance, the Curriculum Genre of Curriculum Development can be realised as a Theory Lesson, Practice Lesson, Practical Lesson or Review Lesson.

O’Halloran (1996: 59) also applies Lemke’s (1990) formulation of Activity Types and recasts them into ‘Lesson Microgenres’. Lemke (1990: 158), in his study on the science classroom, observes that “the structure of a text is the result of the structured social practices that create that text. In this sense, we may consider a text structure to be a special case of an Activity Structure”. O’Halloran (1996, 2004a) interprets the notion of Activity Type as microgenres and proposes seven main categories and a total of 46 microgenres, relating them to the Lesson Genres and Curriculum Macrogenre. These seven main categories are Pre-Lesson Genres, Interpolated Disruptive Genres, Interpolated Genres, Preliminary Genres, Preliminary/ Main Lesson Genres, Main Lesson Genres and End of Lesson Genres.

O’Halloran (1996: 65) describes the Lesson Microgenres according to their register configuration of Field, Tenor and Mode, and explains that “the unfolding of actual texts is displayed dynamically in clause time. In this way, the synoptic description of the microgenres for the analysis of lessons is used to dynamically represent the unfolding of an actual text”.

Lesson Microgenres	Field		Tenor		Mode				
	Socio-Semiotic Processes	Phenomenal Domain	Status	Contact	Affect	Distance	Semiotic Resource	Medium	Modality
LI	Lesson Initiation								
DG	Discourse on Greetings	Classroom Business	Unequal	Distant	Positive	SC	LGS	X	AV
DA	Discourse on Attendance	Classroom Business	Unequal	Distant	Neutral	SC	LGS	X	AV
DPH	Discourse on Philosophy	General Discussion	Unequal	Distant	Neutral	SC/P	LGS	WB, Screen	AV
DGK	Discourse on General Knowledge	General Knowledge	Unequal	Distant	Neutral	SC/P	LGS	WB	AV
DEE	Discourse on Explanation of Events	Classroom Business	Unequal	Distant	Neutral	SC	LGS	X	AV
DHW	Discourse on Homework Check	Classroom Business	Unequal	Distant	Neutral	SC	LGS	X	AV
DI	Discourse on Instructions	Classroom Business	Unequal	Distant	Neutral	SC/P	LGS	Notes	AV
DLO	Discourse on Lesson Objectives	Subject Matters	Unequal	Distant	Neutral	SC	LGS	X	AV
DM	Discourse on Motivation	Disciplinary Matters	Unequal	Involved	Neutral	SC	LGS	X	AV
DRV	Discourse on Revision of Previous Lesson	Subject Matters	Unequal	Distant	Neutral	SC/P	LGS	WB	AV
DAD	Discourse on Administration	Classroom Business	Unequal	Distant	Neutral	SC	LGS	X	AV
LDV	Lesson Diversion								
DRB	Discourse on Rapport-Building	Personal Business	Equal	Involved	Positive	SC	LGS	X	AV
DD	Discourse on Discipline	Disciplinary Matters	Highly Unequal	Distant	Negative	SC/P	LGS	X	AV
DM	Discourse on Motivation	Disciplinary Matters	Unequal	Distant	Positive	SC	LGS	X	AV
DP	Discourse on Permission	Disciplinary Matters	Highly Unequal	Distant	Negative	SC/P	LGS	X	AV
DTC	Discourse on Time Check	Classroom Business	Unequal	Distant	Neutral	SC/P	LGS	X	AV
DED	Discourse on External Distraction	Classroom Business	Unequal	Distant	Negative	SC/P	LGS	X	AV
DAD	Discourse on Administration	Classroom Business	Unequal	Distant	Neutral	SC	LGS	X	AV

Figure 3.8 Lesson Microgenres in General Paper

Lesson Microgenres	Field		Tenor		Mode				
	Socio-Semiotic Processes	Phenomenal Domain	Status	Contact	Affect	Distance	Semiotic Resource	Medium	Modality
LP	Lesson Progress								
DI	Discourse on Instructions	Subject Matters	Highly Unequal	Distant	Neutral	SC/P	LGS	WB	AV
DPH	Discourse on Philosophy	General Discussion	Unequal	Distant	Neutral	SC/P	LGS	WB	AV
DGK	Discourse on General Knowledge	General Knowledge	Unequal	Distant	Neutral	SC/P	LGS	WB	AV
DR	Discourse on Reading	Subject Matters	Unequal	Distant	Neutral	SC/P	LGS	WB, Screen	AV
DOL	Discourse on Language	Subject Matters	Unequal	Distant	Neutral	SC/P	LGS	WB WB,	AV
DOS	Discourse on Skills	Subject Matters	Unequal	Distant	Neutral	SC/P	LGS	Screen, Notes WB,	AV
DOC	Discourse on Contents	Subject Matters	Unequal	Distant	Neutral	SC/P	LGS	Screen, Notes	AV
DRV	Discourse on Revision	Subject Matters	Unequal	Distant	Neutral	SC	LGS	WB	AV
DEX	Discourse on Exams	Subject Matters	Unequal	Distant	Neutral	SC	LGS	X	AV
VS	Video Screening	Subject Matters	X	X	X	X	X	Video	AV
DPC	Discourse on Personal Coaching	Subject Matters	Unequal	Involved	Neutral	CP	LGS	X	AV
SW	Student Work	Classroom Business	X	X	X	X	X	X	X
LC	Lesson Closure								
DSL	Discourse on Summary of Lesson	Subject Matters	Unequal	Distant	Neutral	SC/P	LGS	WB, Screen, Notes	AV
DIH	Discourse on Issuing on Homework	Classroom Business	Highly Unequal	Distant	Neutral	SC	LGS	WB	AV
DAM	Discourse on Arrangements for Next Meeting	Classroom Business	Unequal	Distant	Neutral	SC	LGS	X	AV
DG	Discourse on Greetings	Classroom Business	Unequal	Distant	Positive	SC	LGS	X	AV

Figure 3.8 Lesson Microgenres in General Paper

This study proposes 25 Lesson Microgenres in the General Paper lesson. The list is represented in Figure 3.8. The choice to label them as ‘discourse’ is to recognise that the Lesson Microgenres may be constructed multimodally as discourse. Following O’Halloran (1996, 2004a), the Lesson Microgenres proposed are described according to the register configuration of Field, Tenor and Mode. Their contextual variables are also listed in Figure 3.8. Each Lesson Microgenre is described according to O’Halloran’s (1996, 2004a) descriptive categories as well as Matthiessen’s (2009) parameters discussed in the following sections.

3.2.3.1 Contextual Configuration of Lesson Microgenre: Field

Matthiessen (2009: 28) describes the constitution in Field in terms of two basic parameters, 1) Socio-Semiotic Process (‘that which is going on’) and 2) the Phenomenal Domain (‘subject matter’). Matthiessen (2009) situates his work in the field of context-based register typology and proposes eight distinct primary socio-semiotic process types which are grouped according to first-order and second order processes. First order processes (Halliday, 1978, 142-143) are located within the social system in the ordered typology of systems, in this case the social process of ‘doing’. In this order, Matthiessen (2009: 28) observes that “language and other denotative semiotic systems come in merely to facilitate the execution of this first order social process”. Second order processes are located within the semiotic system in the ordered typology of systems. “They are inherently semiotic processes (and so

also social, of course) and operate in contexts that are constitute not only socially but also semiotically” (Matthiessen, 2009: 28).

Socio-Semiotic Process	Context	Description	Ordered Typology
Doing	Social action (with semiotic processes facilitating)		1 st Order
Expounding	General knowledge	Explaining/Classifying	2 nd Order
Reporting	On sequences of particular event, or regions of places	Recording (events) Surveying (places)	2 nd Order
Recreating	Personal or imagined experiences	Narrative/ Dramatizing	2 nd Order
Sharing	Typically particular, personal experiences and values		2 nd Order
Recommending	Courses of action	Advising/ Exhorting (promoting)	2 nd Order
Enabling	Courses of action	Empowering/ Regulating	2 nd Order
Exploring	Positions and values	Arguing/ Evaluating	2 nd Order

Figure 3.9 Socio-Semiotic Processes

As represented in Figure 3.9, in the Lesson Microgenres, the most common socio-semiotic process in the classroom is *Enabling*. This is where students are either regulated or empowered towards certain courses of actions. Examples of this include Discourse on Lesson Objectives, Discourse on Time Check and Student Work. The socio-semiotic process of *Expounding* is also frequently found in the Lesson Microgenres, given that it has to do with the explanation or classification of knowledge. Examples of this include the Discourse on Content, Discourse on

Language and Discourse on General Knowledge. The higher frequency of the Socio-Semiotic Processes of Enabling and Expounding is unsurprising given the pedagogic nature of the discourse where the focus is on teaching and learning as well as empowering students.

It is interesting to note that the socio-semiotic process of *Exploring* is only located in one Lesson Microgenre, that of Discourse on Philosophy. In fact, the key distinction between the Lesson Microgenre of Discourse on Philosophy and Lesson Microgenre of Discourse on General Knowledge is that the former relates to the socio-semiotic process of *Exploring* and the latter to that of *Expounding*. The socio-semiotic process of *Exploring* is a critical skill to develop as it equips the students with the competencies to identify ideological positions and formulate their arguments. In view of the Desired Outcomes of Education discussed earlier in this chapter, where there is a premium on developing critical thinkers, the socio-semiotic process of *Exploring* and, by extension, the Lesson Microgenre of Discourse on Philosophy is valued. The detailed implications for a lesson where Discourse on Philosophy dominates, such as in Adeline's and where Discourse on General Knowledge dominates, such as in Wilson's, are discussed in Chapter 5.

The socio-semiotic process of *Recommending* is located in Lesson Microgenres such as Discourse on Motivation and Discourse on Examinations which are concerned with advising or exhorting a certain course of action. In the General Paper classroom, the socio-semiotic process of *Sharing* is unique to the Lesson Microgenre of Discourse on Rapport-Building as teachers tend to share personal anecdotes and experiences in order to relate to the students. This is to reduce the

interpersonal distance and mitigate the hierarchical nature of the teacher-students relationships. Discourse on Rapport-Building contributes significantly to build a more collegiate and participative learning environment. The first order semiotic system of *Doing* is located within the Lesson Microgenre of Student Work where the students go about the activity assigned by the teacher in the lesson.

The 2nd parameter of Field in the categorisation of Phenomenal Domain in the General Paper Classroom adopts O'Halloran (1996, 2004a) categories of the different types of field in the classroom. The classifications are *Classroom Business*, *Subject Matters*, *Personal Business*, *General Discussion* and *Disciplinary Matters*. The related Lesson Microgenres which these domains apply to are described in Figure 3.8. *Classroom Business* refers to discourse related to classroom management, set-up and regulations whereas *Subject Matters* is concerned with any discourse on the subject of General Paper. *Personal Business* is the field for the Lesson Microgenre of Discourse on Rapport-Building as it is concerned with the sharing of personal stories. *Disciplinary Matters* is the field for the Lesson Microgenre of Discourse on Discipline, Discourse on Permission and Discourse on Motivation. The field for the Lesson Microgenre on Discourse on Philosophy is *General Discussion*, given the broad nature of the field representational of Discourse on Philosophy. However, Discourse on Philosophy can also arguably be situated within the Phenomenal Domain of *Subject Matters*.

3.2.3.2 Contextual Configuration of Lesson Microgenre: Tenor

O'Halloran (1996, 2004a) defines the constitution in Tenor within the Systemic Functional Theory tradition. They are *Status (or Power)*, *Contact* and *Affect*. The values of *Power* are Equal and Unequal, although Highly Unequal is also used to describe the Lesson Microgenres of Discourse on Discipline and Discourse on Permission when the authority of the teacher is most salient. *Contact* is described in terms of being Distant or Involved depending on the nature of the activity. For instance, the Lesson Microgenres of Discourse on Rapport-Building, Discourse on Personal Consultation and Discourse on Motivation are classified as Involved. Most of the other Lesson Microgenres can be described as Distant. The values associated with *Affect* are that of Positive, Negative and Neutral. Most of the Lesson Microgenres are Neutral in Affect, given the didactic nature of pedagogic discourse. However, the Lesson Microgenres of Discourse on Greetings and the Discourse on Rapport-Building are coded as Positive. The Lesson Microgenres of Discourse on Discipline, Discourse on Permission and Discourse on External Distraction are coded as Negative.

It is important to note that the values of Status, Contact and Affect ascribed to the Lesson Microgenres are the typical generic values expected given the nature of the activity. They describe the expected values rather than the actual realisations of the meanings made through the multimodal semiotic resources. The instantiation of these meanings through the resources of language, gesture and the use of space by the teacher may differ from what is expected. These disjunctions become, in a sense, marked selections which invite deeper investigation. These marked choices

can usually be reconciled through understanding the different pedagogical strategies adopted by the teacher to manage the tenor relations. This is discussed in relation to structured informality in Chapter 6.

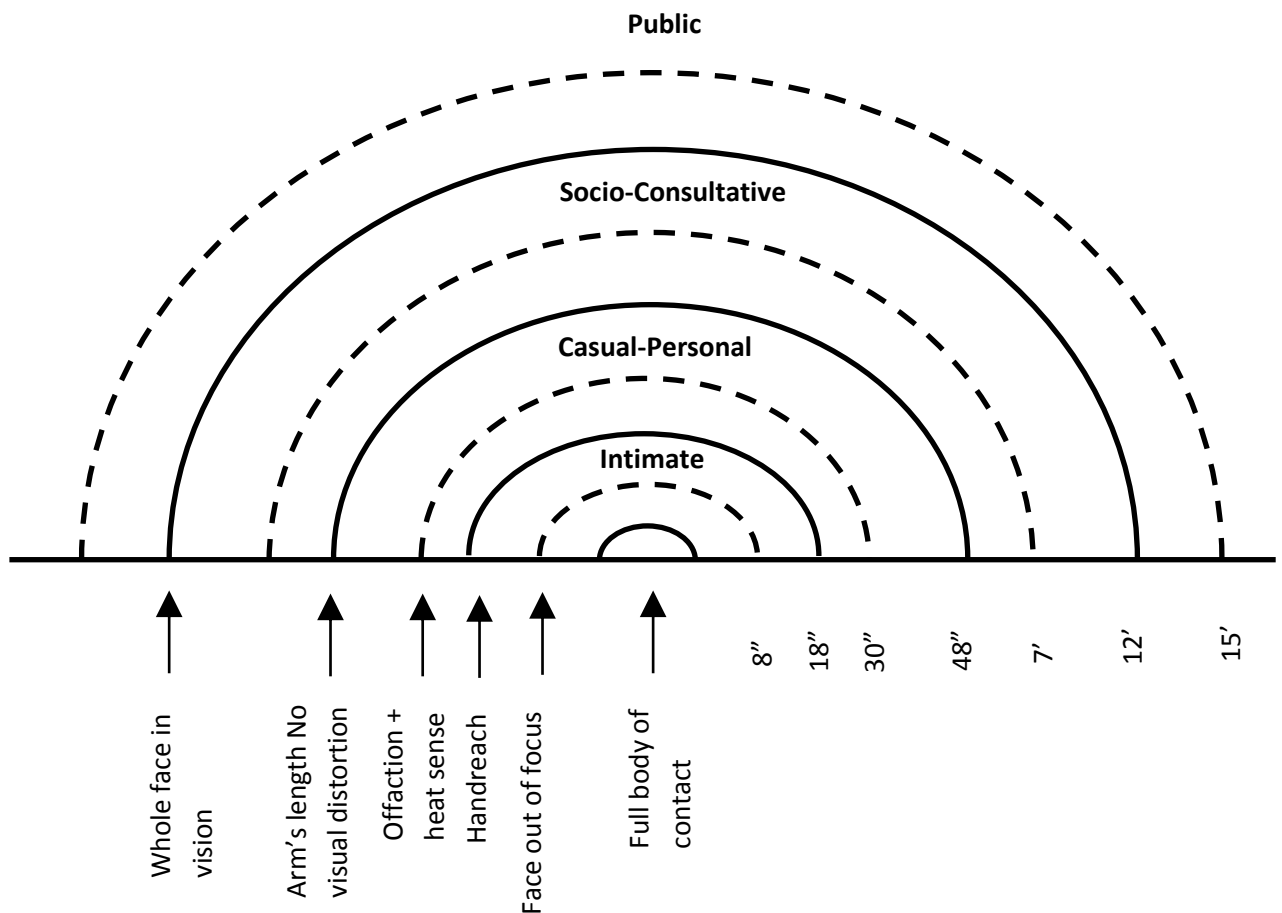


Figure 3.10 Hall's (1966) Distance Sets
(reproduced from Matthiessen, 2009: 27)

Matthiessen (2009) discusses the notion of interpersonal distance within Tenor and develops Hall's (1966) work on distance sets where material distance is understood to realise semiotic distance. Hall's (1966) distance sets is represented diagrammatically by Matthiessen (2009) and reproduced in Figure 3.10. Matthiessen (2009: 27) explains that Tenor interacts in interesting ways with visual and aural

contact. He argues that “the more ‘intimate’ the tenor of the relationship is, the wider the bandwidth of the channel of communication is – the widest bandwidth being associated with intimate face-to-face conversation...the greater the range of interpersonal meanings that can be expressed... since the face is a key resource for the expression of interpersonal meanings” (Matthiessen, 2009: 27).

Following Hall’s (1966) description of distance sets, the nature of interaction in the classroom setting situates most of the Tenor relations in the Lesson Microgenres within the Socio-Consultative Space (SC in Figure 3.8) or between the Socio-Consultative Space and Public Space (SC/P in Figure 3.8). This is with the exception of the Lesson Microgenre of Discourse on Personal Consultation bordering on the Casual-Personal Space (CP in Figure 3.8). In the context of a classroom, however, a more delicate set of distinctions within the Socio-Consultative Space may be productive to better reflect the different semiotic activity. This is proposed and discussed in Chapter 4.

3.2.3.3 Contextual Configuration of Lesson Microgenre: Mode

In terms of the constitution in Mode, it is useful to extend the SF-MDA’s distinction between semiotic resources and media as discussed in Chapter 2. O’Halloran (1996, 2004a) identifies the various resources deployed in each Lesson Microgenre. Here, the semiotic resources investigated are Language, Gesture and the Use of Space through positioning and movement (LGS in Figure 3.8). The teaching resources include both traditional teaching resources such as the media of whiteboard,

textbooks and notes as well as technological teaching resources such as videos and PowerPoint presentations. An exemplar of their (co-)deployment in each Lesson Microgenre is detailed in Appendix V and discussed in Chapter 5.

The popular medium used in the General Paper classroom, as observed in the two lessons, is the whiteboard. While the actual semiotic work in which the medium of the whiteboard does in a General Paper lesson presents interest for further examination beyond the scope of this study, there are some general comments that can be made on the pedagogical functions of the whiteboard. There seems to be seven functions that the whiteboard serve in the General Paper lesson based on classroom observations and the researcher's experience in using the medium. The pedagogical functions of the whiteboard in a General Paper Lesson include 1) Reinforcement of Knowledge, 2) Reformulation of Knowledge, 3) Explanation and Elaboration of Knowledge, 4) Organisation of Knowledge, 5) Disambiguation of Knowledge, 6) Demonstration of Knowledge, and 7) Assessment of Knowledge.

The *Reinforcement of Knowledge* occurs in the intersemiotic co-contextualising relations between what is said by the teacher or students and is written down on the whiteboard. The words that are written on the whiteboard are a repetition of what have been said, although very often only the key points are written down. This repetition is similar to what Lemke (1984) described as 'redundancy', which he argues is a necessary process in teaching and learning, particularly in the acquisition of new knowledge and understanding. The notion of redundancy is discussed further in Chapter 6. This function of the whiteboard can be

observed in Wilson's lesson where he writes down the answers given by the students verbatim on the whiteboard as exemplified in Figure 3.11.



Figure 3.11 Whiteboard for Reinforcement of Knowledge



Figure 3.12 Whiteboard for Reformulation of Knowledge

The pedagogical function of *Reformulation of Knowledge* is similar to *Reinforcement of Knowledge* except that the words written on the whiteboard are not a repetition of what is said. Instead, the meanings are represented in appropriate, specialised, and often technical language. While there is redundancy taking place through the intersemiotic co-contextualising relations, the *Reformulation of Knowledge* is more similar to Christie's (2002) description of the teacher recasting the students' answers into the specialised jargon that is privileged in the discipline. Christie (2002) argues that the logogenesis from everyday lexis to the specialised language of a subject is a mark of successful apprenticeship in the

learning of a discipline. One manner which this is achieved is in the multimodal reformulation through the medium of the whiteboard. While reformulation can be mostly commonly observed in the Initiation, Response, Feedback (IRF) sequence (Sinclair & Coulthard, 1975) of classroom conversations, teachers may also use the whiteboard in the reformulation of knowledge from the verbal to the written mode. This is evident in Adeline's lesson during the Lesson Microgenre of Discourse on Summary of Lesson when she explains that "Okay, I am not quite writing down what you are saying", as represented in Figure 3.12. What she is doing, in fact, is reformulating the responses from the students into the appropriate phrases privileged in the discipline.

Along with the pedagogical function of *Reinforcement of Knowledge* and *Reformulation of Knowledge* from what is said by the teacher and students to what is written on the whiteboard, Iedema's (2001, 2003) conception of resemiotization is always taking place as the meanings made are resemiotized across the semiotic resource of spoken language to written language through the medium of the whiteboard.

The whiteboard also serves the pedagogical function of *Explanation and Elaboration of Knowledge* as the teacher can use it to illustrate a particular point that he is bringing across to the students. Hence, instead of just explaining the knowledge verbally, the teacher uses the whiteboard to add detail and clarify the knowledge he has introduced through his speech. An example of this can be found in Wilson's lesson when he introduces the template that he has developed for the answering of the Application Question. In Figure 3.13, he verbally explains the steps needed such

as “we have to propose some solutions to the problems” and illustrates how his template serves to achieve these through the medium of the whiteboard.



Figure 3.13 Whiteboard for Explanation and Elaboration of Knowledge



Figure 3.14 Whiteboard for Organisation of Knowledge

The fourth pedagogical function that the whiteboard serves is the *Organisation of Knowledge*. For instance, as the students are engaged in the activity set by Adeline, she uses the whiteboard to create headings and to organise the points which the students are offering. Hence, the whiteboard is used to visibly structure and classify the knowledge in the lesson. This is represented in Figure 3.14. While the organisation of knowledge through the whiteboard in Adeline’s lesson is rudimentary, there are instances where teachers use the whiteboard extensively to position items of knowledge at specific sections on the whiteboard in order to draw the linkages and show the relationship between the points. This is a pedagogical

strategy known as link maps, where the organisation of knowledge is foregrounded and the interconnectivity between different points are made explicit and prominent. The productivity of link maps as an organisational template that results in effective teaching and learning has been reported in studies by Lindstrom (2010) and Lindstrom & Sharma (2009). Whiteboards, given their size and prominence, in the classroom provide a natural site for the production of link maps.

Another pedagogical function of the whiteboard is for the *Disambiguation of Knowledge*. This is where the knowledge item expressed verbally is made clear and unambiguous in the written form. In a sense, this is similar to the function of *Reinforcement of Knowledge*. However, in this case, the main purpose is to draw attention to the orthography of the word, specifically its spelling. For instance, when Adeline explains the word 'transience' to the class, she writes the word on the whiteboard so that the students will know clearly how it is spelled. Given the nature of the subject General Paper, where there is a strong focus on language, it is unsurprising that *Disambiguation of Knowledge* features regularly in the lesson. In addition, the whiteboard is used to serve this function whenever specialised lexis is introduced and mentioned in the other subjects' lesson as well. While serving also to reinforce the new term, the orthography of the term is disambiguated.

The medium of the whiteboard operating in the pedagogical functions of *Demonstration of Knowledge* and *Assessment of Knowledge* are not observed in the two lessons investigated. The former suggests that the teacher is using the whiteboard to demonstrate the solution to a particular problem. The detailed working out of the processes by the teacher on the whiteboard is usually found in

the Mathematics and Science lessons, where knowledge is taught and learnt through a problem being presented. Similarly, the *Assessment of Knowledge* is where students are called up to the whiteboard to write down their answer to a question posed by the teacher. In a sense, an informal assessment of the students' understanding is enabled by the whiteboard. While uncommon in the subject General Paper, there are also incidences of occurrences when these two functions are observed. The former function is served when the General Paper teacher uses the whiteboard to analyse a particularly complex sentence into its component word classes to explain its meaning. The latter function is served, for example, during a vocabulary quiz where a student is asked to come up to the whiteboard and write out the spelling of a word.

The pedagogical functions of the whiteboard listed here, while observed in the two lessons and supplemented with the researcher's experience of using the medium in the teaching of General Paper, are probably not exhaustive. Further research, beyond the scope of this project, is required to understand the nature of these functions and the resemiotization that have taken place. It is also worthwhile to investigate the intersemiotic relationship between what is verbalised by the teacher and students together with what is written on the whiteboard.

In addition to O'Halloran's (1996, 2004a) descriptive categories, Matthiessen's work on Mode is also applied in this study. He argues that "[w]ithin context, the contextual parameter of mode relates to the 'modality' of the expression planes of different semiotic systems since it is mode that is concerned with the semiotic role of the semiotic systems operating within a given context and

the role of a particular semiotic system depends on the affordances of its medium or media of expression” (Matthiessen, 2009: 23). Matthiessen (2009) describes modes in terms of Medium (spoken/written/signed) and Channel (aural/ visual/ tactile/ olfactory/ gustatory). However, to be consistent with the usage of the terminologies in the SF-MDA approach, as discussed in Chapter 1 and 2, the aural, visual, tactile, olfactory and gustatory channels are termed as modalities.

Matthiessen (2009: 23) explains that the use of aural, visual, tactile, olfactory and gustatory modalities is “the semiotic construction of communication technology. It is a representation of the “semioticization of the affordances of the material channel”. As such, it is “concerned with the bandwidth of semiosis between ‘speaker’ and ‘addressee’ as far as the expression plane is concerned, ranging from maximal bandwidth when they are not in any direct sensory contact to maximal bandwidth when they are in full sensory contact” (Matthiessen, 2009: 23). In the General Paper classroom, observations from the two lessons suggest that the modalities by which meaning is made to the students are also mostly aural and visual.

The constitution of Mode is understood, in this study, to consist of 1) the semiotic resources such as language, gesture and the use of space through positioning and movement, 2) the media such as the whiteboard and screen and 3) the modalities such as the aural and visual senses. The repertoire of resources and media apparent in the constitution of Mode in each Lesson Microgenre underscores the complexity of meaning making in the classroom and the multimodal nature of pedagogic discourse. It is the combination of these resources in a multimodal

ensemble that multiplies the constellation of meanings made in the lesson. The nature of the relationship between the semiotic resources, their co-deployment in space and time and the emergent meanings made in multimodal pedagogic semiosis are discussed in Chapter 6.

3.2.4 Lesson Microgenres in the General Paper Lesson

The formulation of the stages in Lesson Microgenre corresponds with the categories of Activity Types by Lemke (1990) and the categories of Lesson Microgenre by O'Halloran (1996, 2004a). The Lesson Microgenre is productive in mapping the structural unfolding in the logogenesis of the lesson. The proposal of the Lesson Microgenre is also a useful classification to situate the instantiation of multimodal pedagogic semiosis within its co-text, that is the other Lesson Microgenres, and locate it in its corresponding context of Lesson Genre, Curriculum Genre, Curriculum Macrogenre and Curriculum Hypergenre.

The main activity stages of a lesson for General Paper are simplified and represented in four main categories. They are namely, Lesson Initiation, Lesson Progress, Lesson Closure and Lesson Diversion. This narrows from O'Halloran's (1996, 2004a) original formulation of seven categories. For instance, the Pre-Lesson Genre of Teacher Preparation and Settling into Work are not explicitly represented. Instead, they are classified broadly under the single generic stage of Lesson Initiation. The classification of Preliminary/ Main Lesson Genre is also separated into either Lesson Initiation or Lesson Progress in this study. In addition, both

O'Halloran's (1996, 2004a) Interpolated Disruptive Genres and Interpolated Genres are subsumed under the generic stage of Lesson Diversion in this study. Finally, the End of Lesson Genre proposed by O'Halloran (1996, 2004a) is categorised under the generic stage of Lesson Closure used in this study. Figure 3.8 shows the list of microgenres under each of the four categories. There are altogether 25 Lesson Microgenres proposed for the subject General Paper. The Lesson Microgenres are discussed in greater detail through the analysis of the two lessons in Chapter 5.

While the Lesson Microgenres fall largely within each generic stage, a neat and clearly delineated categorisation is problematised. For instance, the distinction between the Lesson Microgenres of Discourse on General Knowledge and Discourse on Content is based on the latter being specific to the passage content in question, whereas the former refers to general knowledge and current affairs. Lesson Microgenres can also be located in two activity stages of the Lesson Genre. For instance, the Lesson Microgenre of Discourse on Motivation can be seen as part of Lesson Initiation but also as Lesson Diversion if it occurs in the midst of Lesson Progress. Similarly, the Lesson Microgenre of Discourse on Instructions can occur both in Lesson Initiation and Lesson Progress as the teacher moves from one activity to another during the lesson.

O'Halloran (1996, 2004a) categorises some Lesson Microgenres according to the structure of the activity in the classroom such as whether it is Board Demonstration, Seat Work Discussion, Practical Activity Discussion, or Copying Notes in some Lesson Microgenres. O'Halloran (1996, 2004a) also categorises some Lesson Microgenres according to the nature of the activity such as Review, Motivation,

Teacher Narrative or Teacher Exposition in other Lesson Microgenres. This study foregrounds primarily the nature of the activity and distinguishes between the Lesson Microgenres of Discourse on Philosophy, Discourse on General Knowledge and Discourse on Skills. This is because the types of activities in the structural sense are more limited in the General Paper classroom, but the nature of activities, as expressed through the discourse, is more varied and thus open to further investigation. It is unsurprising that the Lesson Microgenres proposed for the General Paper classroom differ in some ways from O'Halloran's (1996, 2004a) propositions for the Mathematics classroom given the significant differences in the nature of teaching and learning of the two subjects.

An analysis of the primary or recurrent Lesson Microgenre of the lesson may reveal patterns indicative of the lesson experience and the pedagogy of the teacher. A comparison made between the Lesson Microgenres of the two lessons also shows the different approaches in a lesson that is situated within the same Lesson Genre of Review, Curriculum Genre of Closure, Curriculum Macrogenre of Application Question Structure and Curriculum Hypergenre of General Paper, taught at the same curriculum point in time to classes of the same mixed ability profile by two different teachers.

3.3. Summary

Chapter 3 discusses the contextualisation of the lessons which are investigated in this study. The educational landscape in Singapore is introduced and the Ministry of

Education's ideologies articulated through its Desired Outcomes of Education are discussed. Next, the construction of the subject General Paper in policy is examined through the curriculum documents, namely the General Paper Syllabus and the Examinations and Assessment guidelines. The alignment of these documents to the Desired Outcomes of Education is made. Iedema's (2001, 2003) notion of resemiotization is also applied to investigate the transformation of the subject General Paper from policy to practice in the classroom.

The Curriculum Genre Theory is applied and extended in this study to examine General Paper from the level of a subject, to the topic, to the curriculum stages of the topic, to the types of lessons, to the lesson and finally to specific sections of the lesson. O'Halloran's (1996, 2004a) proposes the Lesson Genre and Lesson Microgenres as a complementary perspective to Christie's (1993, 1997, 2002) Curriculum Genre and Curriculum. Following O'Halloran's (1996, 2004a) lead, this study also proposes the Curriculum Hypergenre as a complementary perspective to these two pioneering works and applies these conceptions to the General Paper classroom.

As Lemke (1985: 275) outlines, "[t]he basic principle of social semiotic analysis is that meanings are made by selective contextualization: each entity which we take to be a sign we make meaningful by considering its syntagmatic, paradigmatic, situational, and intertextual contexts, both actual and potential". The situation of a specific section of the pedagogic discourse in a Lesson Microgenre, which is in a constituency relationship with a specific Lesson Genre, located in a Curriculum Genre, being part of a Curriculum Macrogenre and in a networked

connection within a Curriculum Hypergenre, offers an all-round perspective of the multimodal pedagogic semiosis that is anchored in co-text, inter-text and context.

CHAPTER 4

GESTURE AND SPATIAL PEDAGOGY

This chapter presents the top-down orientation from the quadnocular perspective described in Chapter 2. The theoretical systems developed for the study of gesture and the use of space through positioning and movement are discussed. The conceptions of these resources pioneered in the field of non-verbal communication are reviewed and the study of gestures and spatial semiotics within the field of multimodality, particularly from the SF-MDA perspective, is developed and extended to investigate pedagogic semiosis.

4.1 Gesture Studies

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

during the Cold War era in the second half of the 20th Century. As mentioned in Chapter 1, research in non-verbal communication, specifically in the study of gesture, has been championed by scholars such as Ekman & Friesen (1969, 1974), Goldin-Meadow & Singer (2003), Kendon (1981, 1996, 2004), McNeill (1992, 2005) and Cienki (2008). More recently, within the last decade, social semioticians such as Hood (2007, 2011), Martinec (2000, 2001, 2004) and Cleirigh (2011, in preparation) have developed studies in systematising gesture from the Systemic Functional theoretical perspective. Their work is taken up and discussed further in this chapter.

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 (1996: 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: 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: 376).

While Kendon's (1996, 2004) definition has been mostly adopted in the field of non-verbal communication and social psychology, a simpler and more inclusive definition of gesture is offered by Cienki (2008), working in the field of cognitive linguistics. He proposes that "[i]n the broad sense, gestures can refer to any wilful bodily movement" (Cienki, 2008: 6). Although this is a more expansive definition of gesture, the question of the subjectivity involved in determining what is recognised as 'wilful' remains.

The issue of subjectivity in interpreting which movements are 'wilful' is addressed from three angles in this study. Firstly, given the intersubjective stance towards the interpretation of meanings, adopted in this study (see Section 2.1.2.1), subjectivity of determining what is considered 'wilful bodily movement' can be, in part, mitigated. This is because interpretation of meanings is based on an intersubjective consensus within a semiotic community. In addition, investigating gesture together in combinational deployment with other semiotic resources provide co-text for collective interpretation. The disambiguation of meanings is also supported by the quadocular perspective described in Chapter 2. Secondly, the adoption of both formal and functional dimensions in the annotating of gesture in this study also, to some extent, reduces the subjective interpretive element required in determining which action is gesture and which action is not. This is further discussed in Section 4.1.3. Finally, a very broad definition of gesture which includes the categories of Communicative Gesture and non-communicative gestures or Performative Gesture is proposed in this study. This is also discussed in Section 4.1.1.

4.1.1 Communicative Gesture and Performative Gesture

In my investigation of the use of gesture in the classroom from the SF-MDA perspective, the working definition of gesture is proposed as any bodily movement, regardless of whether it is recognisably communicative. The categories of Communicative Gesture and Performative Gesture are proposed for this purpose. Communicative Gesture is aligned with Kendon (1981, 2004), Cienki (2008) and others in the field of non-verbal communication's definition of a gesture as an action which communicates meanings. In terms of its relationship with language, Communicative Gesture is sub-classified as Language Correspondent Gesture, Language Independent Gesture and Language Dependent Gesture. Language Correspondent Gestures are gestures which co-occur with speech, but their meanings can be accessed and interpreted without relying on the accompanying language. Language Independent Gestures are gestures that occur in the absence of language and makes meaning on their own. Language Dependent Gestures are gestures which co-occur with language and require the accompanying language to fully access and interpret their meanings. The different types of gesture are discussed with examples in the following sections.

In addition, the definition for gesture in this study also includes Performative Gesture, which is movement performed practically to execute a task. It may not be semantically loaded or wilfully performed to communicate meaning. Examples of Performative Gesture include picking up a pen, rubbing of one's temple to ease a headache or scratching one's neck to ease an itch. While the primary intent of Performative Gesture is not to communicate, they may, at times, be construed to

convey meaning, thus serving as Communicative Gesture. For instance, the action of scratching one's head is a Performative Gesture as a reflex to an itch. However, it can also be interpreted as a Communicative Gesture to suggest uncertainty. As observed, the boundary between the classification of Communicative Gesture and Performative Gesture is, at times, nebulous. Nonetheless, the meanings are usually disambiguated when the gesture is interpreted in context, including in its co-text and inter-text. Hence, it is arguably useful not to disregard Performative Gestures, despite them being not primarily communicative in nature.

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 & 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 described in the following paragraphs as well. Nevertheless, the general principles behind the classification remain mostly similar. The types of gesture in the field of non-verbal communication are briefly described.

Emblems are considered as speech-independent gestures that can possibly have direct verbal translation. They are Communicative Gestures, as defined in this study. For instance, the 'OK' sign made by the joining of the thumb and index finger is the classic example of an Emblem. Working from the Systemic Functional theoretical perspective, Martinec (2000) categorises Emblems as Representing Actions. This is discussed in Section 4.1.5.1 of this chapter.

Illustrators are speech-dependent gestures. The degree of intent exercised by the enactor is uncertain. They are categorised as Communicative Gestures. Illustrators include signals for turn-taking in conversations (pointing with palm), signals for referents (using fingers for numbering of ideas), baton (slamming of hand), ideographs (snapping of fingers while thinking) and pictograms (tracing the movement of signing a cheque when requesting for the bill). They are described by Martinec (2000) as Indexical Action.

Regulators or Gesticulations, as described by Kendon (2004), are gestures that are habitual and mostly unintentional. They are mostly speech-dependent gestures and are categorised as Communicative Gestures. They are also similar to what Martinec (2000) terms as Indexical Action.

Adaptors, as described by Ekman & Friesen (1969), are highly unintentional behaviour and are usually responses to boredom or stress. Self Adaptors involves the manipulation of the enactor's body such as hair twisting or scratching. Alter Adaptors are designed to psychologically or physically protect the enactor from others. This includes the folding of arms or unconscious leg movements. Object focused Adaptors involve the unconscious manipulation of objects such as the twisting of rings and the tapping of pens. Finally, Affect Displays include facial expressions, postures, reflex actions and involuntary movements such as shivering. Adaptors are not strictly considered as gesture in the field of non-verbal communication as they are usually not wilful and may not be recognisably communicative. In this study, however, they are categorised as Performative

Gestures. Martinec (2000) also describes them under the Behavioural process types of Presenting Action.

4.1.2 Systemic Functional Approach to Gesture

Research in gesture from the Systemic Functional perspective classifies actions according to their realisations of ideational, interpersonal textual metafunctional meanings (see, for example, Martinec, 2000, 2001, 2004 and Hood, 2007, 2011). Action realises metafunctional meanings based on formal observable criteria. Martinec (2000) proposes that actions can be classified into Presenting Action, Representing Action and Indexical Action. Martinec (2000: 243) defines Presenting Action as “most often used for some practical purpose” and “communicates non-representational meanings”. They are classified as Performative Gestures in this study. Representing Actions “function as a means of representation” and are strongly coded representations. 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: 244). Indexical Action is classified as Communicative Gesture and is described as Language Dependent Gesture in this study. The classification of gesture proposed in this study is depicted in Figure 4.1.

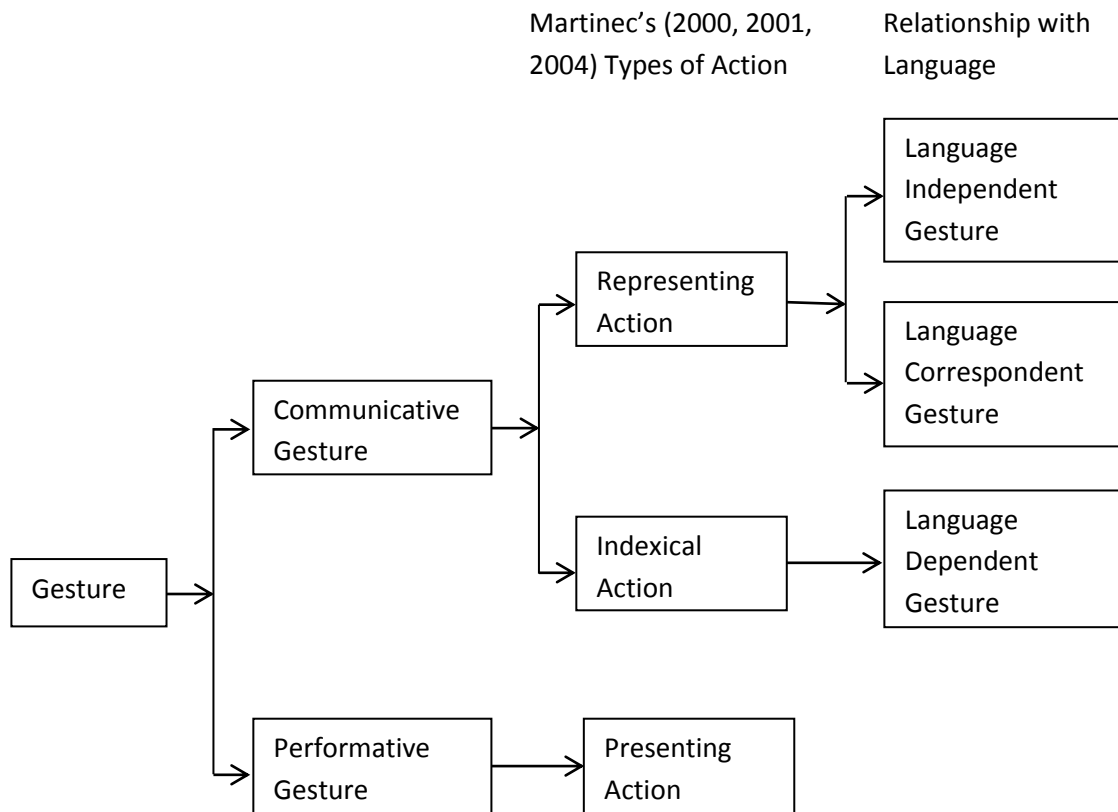


Figure 4.1 Classification of Gesture

Martinec (2000, 2001, 2004) formulates the systems for action which includes movement and proxemics. He explains that “part of the system of engagement in Presenting Action, for example, has been considered as belonging to proxemics and quite separate from the system of affect. Neither has been previously related to engagement in indexical action” (Martinec, 2001: 144). Nevertheless, Martinec (2001: 144) argues that there are merits in considering action and proxemics together as “they all express the same broad kind of meaning”. This study draws on Martinec’s (2000, 2001, 2004) development of systems for ideational meanings in gesture. However, as the systems Martinec (2001) proposes for the interpersonal meanings in actions tend towards a discussion on proxemics, body

postures and facial expressions, Hood's (2011) systems for interpersonal meanings, formulated specifically for gesture, are adopted instead. In this study, the investigation of the meanings made in proxemics is accomplished in the analysis of the use of space through positioning and movement in the classroom. This is discussed in Section 4.2 of this chapter.

Hood (2007, 2011) builds on the foundational work in gesture from McNeill (1992, 1998, 2000) and Enfield (2009) in cognitive studies as well as Kendon (1980, 2004) in psychology. Hood (2007, 2011) approaches gesture from the Systemic Functional theoretical perspective and also organises the meanings made in gesture according to the three metafunctions. For ideational meanings, Hood (2007) develops Martinec's (2000) description of Representing Action and identifies Congruent Entities and Metaphorical Concepts in gesture. In terms of interpersonal meanings, Hood (2011) identifies types of gesture which embodies Attitude, Engagement and Graduation. Finally, for textual meanings, Hood (2011) describes the identification, waves of interaction, salience and cohesion in gesture. Her conceptions are adapted in this study and are discussed in Section 4.1.5.3.

Examining the notion of body language from the Systemic Functional theoretical perspective, Cleirigh (2011, in preparation) distinguishes three types of operating semiotic systems based on their development over time. They are Protolinguistic, Linguistic and Epilinguistic semiotic systems. Cleirigh (in preparation) explains that Protolinguistic body language "is a development from infant protolanguage". This refers to the systems "left behind in the transition to the mother tongue". It is similar to what Kendon (2004) describes as Adaptors, discussed

earlier. They consist of expression and meaning only and do not need accompanying speech to mean. Examples of Protolinguistic body language include fidgeting realising discomfort. Cleirigh's description of Protolinguistic body language can also be located within the broader category of Martinec's (2001: 117) description of Presenting Action, which "does not function as means of representation and whatever meanings it communicates regard to the immediate context of the here-and-now". It is also located within the category of Performative Gesture described in this study.

Cleirigh (2011) describes Linguistic body language as only occurring during speech. Hood (2011: 33) explains that "[t]hese movements synchronise with the rhythm and intonation of prosodic phonology in language and so express salience and tone, co-instantiating textual and interpersonal meanings". Linguistic body language generally corresponds to Martinec's (2000; 2001, 2004) description of Indexical Action, which are actions that necessarily co-occur with language. It is classified as Communicative Gesture and is described as Language Dependent Gesture in this study.

Cleirigh (in preparation) proposes that the third system, Epilinguistic body language, is "made possible by transition [from protolanguage] into language, but [is] not systematically related to the lexicogrammar of language... realis[ing] meanings rather than wordings". Hood (2011: 34) elaborates that "[w]hen accompanying speech, Epilinguistic body language makes visible the semantics of speech. Without speech it constitutes mime. Epilinguistic body language can instantiate all three metafunctions: ideational, interpersonal and textual".

Epilinguistic body language aligns with Martinec's (2001: 117) description of Representing Action which "functions as a means of representation and thus can be used to communicate about a context displaced from the here-and-now". It is classified as Communicative Gesture and can be described as Language Correspondent Gesture or Language Independent Gesture in this study.

In mapping the theoretical congruency between Martinec's (2000, 2001, 2004) types of actions with Cleirigh's (2011) categories of semiotic systems in body language, this study situates the discussion within Cleirigh's (2011) typology despite using the terminologies and systems developed by Martinec (2000, 2001, 2004) and Hood (2007, 2011).

4.1.3 Description of Gesture

As discussed earlier, in order to circumvent the subjectivity in determining which movement is recognised as 'wilful bodily movement', a formal and functional description of all the movements made by the teacher either as Communicative or Performative Gestures is meticulously annotated in the classroom data analysis.

The relationship between the formal description and the functional description, or form and function, in gesture is realisation. Metafunctional meanings are instantiated in the formal expressions of gestures. In fact, as Martinec (2000: 245) observes, "[m]ost of the process types which have been identified in the semantics of language are also identifiable in action. What is more, in action their

formal characteristics are always observable, so in action the process types have direct formal realizations”.

4.1.4 Formal Description of Gesture

This study proposes a rudimentary description of forms in movements. The movements made by the two teachers during their lesson in this study are annotated according to the formal descriptions. This allows for a discussion of the functional semantics of the gesture based on its formal features.

The broader definition of gesture which includes both Communicative Gesture and Performative Gesture is useful here. All gestures made by the teachers during the lesson are annotated regardless of whether they are recognisably communicative. This is because at the preliminary stage of data annotation and transcription in this research, it may be premature to conclude certain movements as meaningful and others not, without imposing a certain degree of researcher’s interpretive subjectivity. The intensive annotation and analysis may also reveal meanings which a more cursory descriptive analysis may miss.

Following the principle of stratification of language as a semiotic resource in Systemic Functional Theory, gesture can also arguably be viewed as possessing an expression plane and a content plane. Gestures can also be understood as a semiotic resource with meaning potential that are instantiated and realised through syntagmatic and paradigmatic selections offered by systems on various strata.

From this perspective, the expression plane of gesture is the formal physical form of the gesture. This includes movement and actions in its material expression. The expression plane of gesture is its material form enacted through the physical body. The content plane, arguably, may be viewed to possess a grammatical structural stratum, organised along the musculoskeletal physiology of an individual. This determines what movements, and thereby what meanings can or cannot be realised. The semantics stratum is concerned with the functional meanings made in the three types of actions proposed by Martinec (2000). His conceptions are discussed further in Section 4.1.5.

Analogous to the ranks of word, group, phrase and clause in language, gestures are organised according to the ranks along the principle of constituency as well, such as the ranks of the finger, hand, arm and upper body. This study also proposes that an action is constituted by one or more movements. For example, the movements in bringing both palms repeatedly together with force produce the action of clapping.

The formal features of the gesture are described and the various selections, such as Direction, Level, and involvement of Arms, Hands and Palms are annotated from the classroom data in this study. Nonetheless, it is important to note that other systems are also in operation on the level of Action, such as the dynamic aspects of frequency, speed, force and muscular tension. Altogether, they operate to produce rhythm, gradation and tempo. However, given the scale and complexity involved in mapping these dynamic systems, a thorough investigation of these systems is beyond the scope of my study. Nonetheless, aspects of rhythm, speed and frequency

are explored through proxy indicators such as the system of Beat in Indexical Action. This is discussed in Section 4.1.5.3 of this chapter.

4.1.5 Functional Description of Gesture: Metafunctional Organisation

4.1.5.1 Ideational Meanings in Gesture

Martinec's (2000) proposes three types of actions with distinctive systems that realise ideational meanings. For instance, Presenting action realises ideational meaning through transitivity processes analogous to language. Representing action realises ideational meaning through their representations of participants, processes and circumstances as well as congruent entities and metaphorical concepts. Indexical action realises ideational meaning in relation to the meanings made by the accompanying language. It also adds another layer of semantics such as the representations of importance, receptivity or relation to it. They are discussed in the following sections.

4.1.5.1.1 Presenting Action

Martinec (2000: 243) describes Presenting Action as gestures that do not serve a semiotic or signifying function and may not embody semantic meaning. It is classified as Performative Gesture. Examples of such actions in the classroom include picking up a pen, writing on the whiteboard, distributing notes and scratching of one's head.

Figure 4.2 shows Wilson performing various Presenting Actions of rubbing his temples, lifting a chair and taking his mobile phone out of his pocket. Adeline also makes various Performative Gestures, such as rubbing her chin, adjusting her hair and lifting her water bottle to drink.



Figure 4.2 Presenting Action

According to Martinec (2000: 247), Presenting Action can be “seen as part of our experience of reality, formed in our interaction with it by means of our perceptions and motor actions”. As such, Martinec (2000) adapts the Hallidayan processes of transitivity to Presenting Action. The different types of Presenting Actions are distinguished according to the processes of transitivity in Systemic Functional Theory. They are Material process, Behavioural process, Mental process, Verbal process and State process. They are represented in Figure 4.3.

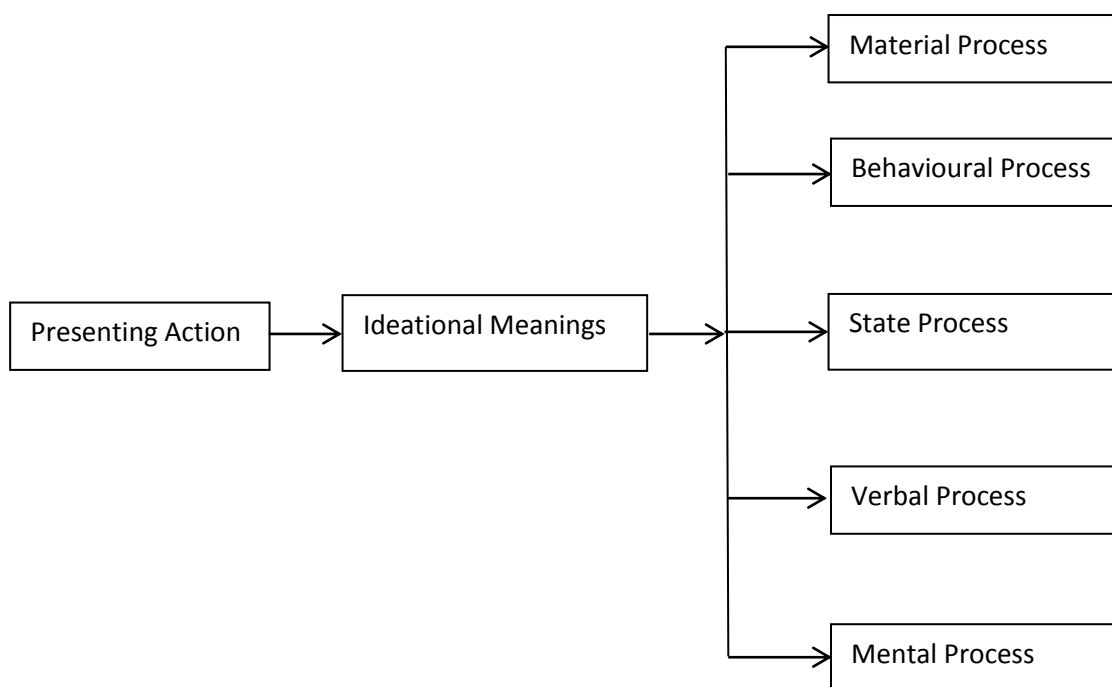


Figure 4.3 Ideational Meanings in Presenting Action

The classification for Material processes, defined by an obvious expansion of effort, such as writing on the whiteboard and arranging the tables, is straightforward. However, a direct application of the other categories to classroom data may require some adjustments. In the application of Martinec’s (2000) proposals to classroom analysis, it is observed that the identification of the processes of transitivity can defy easy categorisation and may need to be further adapted for investigation in pedagogic semiosis.

Martinec (2000: 247) claims that “Behavioural processes are similar to Material processes in that they involve an expenditure of energy but they differ in that their main participant, called Behavior, must be conscious”. This distinction can arguably be tenuous as all gestures must necessarily be enacted by a conscious

individual, although not all gestures are always intentional. Martinec (2000) describes the acts of holding a weight and kicking a ball as Material processes and the acts of grooming such as combing, shaving and washing as Behavioural processes. It may be argued that in both situations, there must necessarily be an enactor of the action that is conscious. Perhaps a more distinct classification can be whether the action is directed to self, which may be described as a Behavioural process, or directed to others or to objects, which may be described as a Material process. However, the productivity of such a distinction requires further investigation beyond the focus of this project. As such, to sidestep the uncertainty, this study will adopt a more general differentiation of Material processes as that which foregrounds the expansion of effort and Behavioural processes as that which Martinec (2000) describes as Affective processes, a sub-set of Behavioural process in his formulation. Examples of Behavioural process thus include crying, laughing, moaning and physiological processes like breathing, coughing and burping, that might be realised in the gestural form. In Figure 4.2, the action of moving the chair and taking the mobile phone of the pocket by Wilson are examples of Material processes.

Martinec (2000: 249) proposes the category of State processes to describe processes that have no significant movement and have no obvious expenditure of energy. Martinec (2000) argues that the human experience of exerting and not exerting effort in action is ultimately the difference between material and state processes. State process has only one participant known as the Stayer. Examples of

these include sitting and standing. Figure 4.4 shows instances where Wilson and Adeline are in State Processes during the lesson observed.



Figure 4.4 State Processes

The other processes include the Verbal processes that have two realisations: visual and auditory. Martinec (2000: 248) proposes that “the visual realization is the lip movement which articulates sound in the way that is done for speech” and “the auditory realization is speech sounds”. As this study does not investigate facial expression or lip movement, Verbal processes in Presenting Action are not coded in the analysis.

Martinec (2000: 250) argues that there are no Mental processes in action unlike in language as “they are processes of cognition and take place in the mind, which is not directly observable”. However, these “processes of cognition” have been expressed in language as mental processes through words such as ‘think’, ‘imagine’ and ‘consider’ in Systemic Functional Linguistics. In a similar vein then, it is

arguably possible to identify the gestural realisation of mental processes even though they refer to processes that “take place in the mind”. From the analysis of the classroom data in this study, it is found that identifying the proxy indicators of thought and foregrounding the act of thinking by the teacher is useful. Indicators of cognition may be suggested by the action of the index finger pointing to the solar plexus and the finger pursing at the chin. Given the natural emphasis on thinking and learning in the educational setting, and that direct or oblique reference to cognition are regularly made through language and gesture in the two lessons observed, it can be productive to identify the realisations of Mental processes in gesture. Instances of these mental processes are depicted as the finger or hand on the chin when considering a student’s response, in the act of reading and viewing a film are exemplified in Figure 4.5.



Figure 4.5 Mental Processes

4.1.5.1.2 Representing Action

Representing Action according to Martinec (2000) is gesture with a conventional signifying function. They are classified as Communicative Gestures in this study. These gestures are either recognisable universally or within a semiotic community. The ideational meanings made by Representing Action are classified as Participants, Processes and Circumstances, as displayed in Figure 4.6. Representing Action is also sub-classified as Language Correspondent Gesture and Language Independent Gesture, based on their coupling relationship with language (see Figure 4.1).

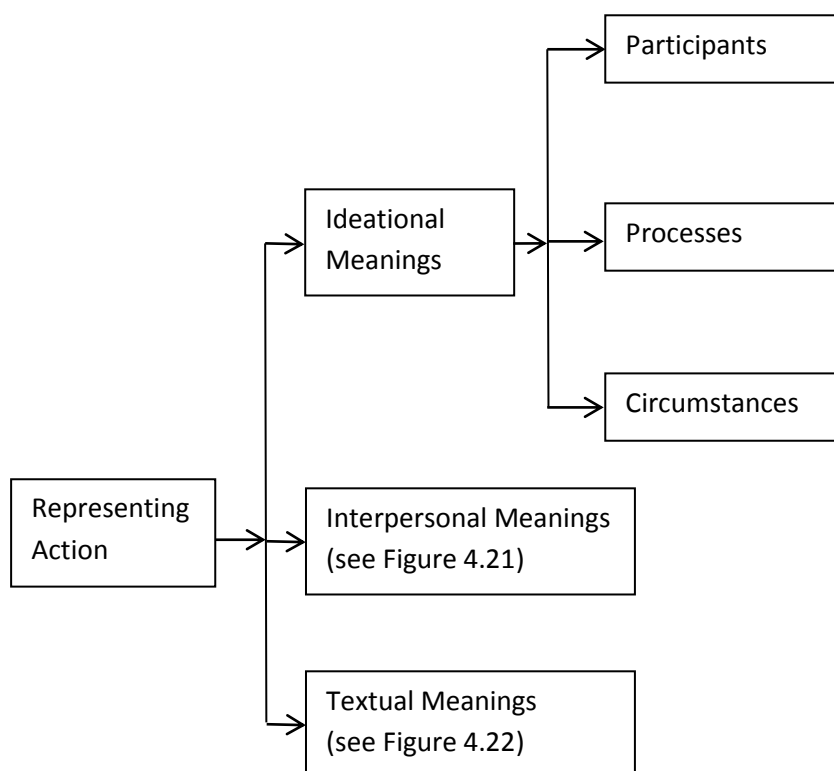


Figure 4.6 Ideational Meanings in Representing Action

Language Independent Gesture in Representing Actions functions without language. As mentioned, they include the Emblems described by Efron (1941) and Ekman & Friesen (1969) and the Iconic Gestures described by McNeill (2000). These

signs have developed a conventionality and regularity as a stable signifier in its own right. Examples of such signs include the thumbs up sign to represent 'good', the number '1' sign formed by raising the index finger and the number '2' sign formed by raising the index finger and the middle finger



Figure 4.7 Language Independent Gestures

Language Independent Gesture can make ideational meanings that may not be expressed verbally in language. As Hood (2011: 41) explains, “[a]t times, however, the representation of ideational meaning is made only in gestures, and is not expressed in the verbiage. In other words, the teachers’ gestures carry the full ideational load”. For instance, as shown in the first frame of Figure 4.7, Adeline enumerates her points by making the ‘two’ sign with her index and middle finger without saying ‘two’ with language. In the second frame of Figure 4.7, Adeline beckons the students to come in with her gesture. Similarly, this is observed when Wilson mimics the action of yawning by raising both arms when he teases a student. This is displayed in the last frame of Figure 4.7. The class laughed because they understood the meaning made by the Representing Action even though language was absent.

Language Correspondent Gesture in Representing Action is distinct from Language Dependent Gesture in Indexical Action in that the meanings are recoverable without the need of inference from language. Language Correspondent Gesture may replicate semantically an entity expressed concurrently in language. For instance, in Figure 4.8, when Wilson explains through language, “You do not want your neighbour digging on your roof”, he also performs the action of digging. There is, therefore, a direct correspondence between the action and what is expressed in language.



Figure 4.8 Language Correspondent Gestures



Figure 4.9 Representing Action of 'Stop'

This is not the same as Indexical Action, even though both co-occur with language. In Representing Action, the meanings can be explicated through the gesture on its own terms. However, the meanings made by correspondent entities often co-contextualise with that made by language and reinforce the meanings made by the teacher. The repetition of meanings in language and gesture produces what

Lemke (1984) calls 'redundancy', as mentioned in Chapter 3. The conceptions of redundancy and intersemiosis are discussed more fully in Chapter 6.

Martinec (2000: 251) argues that the semantics of Representing Action are realised through "formal categories which are directly observable and have to do with the shape of the signs". The relationship between form and function in the gestures can either be non-arbitrary or arbitrary. As suggested by Cleirigh (in preparation), some Representing Actions have evolved naturally from Presenting Actions. Instead of serving a practical function of performing a task, it now serves a signifying function to communicate an idea. For instance, the stop sign is formed by the hand outstretched with a front-facing open palm. This may have evolved from a Presenting Action to forcibly restrain a person. As a Representing Action used by the teacher in the classroom, it now embodies the abstract process of stopping, waiting or slowing down. This Representing Action is used by Adeline in Figure 4.9 to enforce discipline when some students stood up and wanted to leave the room during her lesson.

Martinec (2000: 253) suggests that there are only two kinds of processes for Representing Actions at the primary delicacy level: static and dynamic. Martinec (2000) further sub-classifies the static and dynamic processes according to the shape of the hand and finger as well as the shape of the movement trajectory. The classification of process types in Representing Action according to the shape of the gesture may be open to the criticism that it is not along the same principle as that is used to classify process types in Presenting Action. According to Martinec's (2000) propositions, the process types in Representing Action are based the formal features

Lazaraton (2004) who investigates the ways in which teachers act out lexical meaning of verbs such as 'sweep' and 'dig'.

While the categorisation between the representations in gesture as concrete entities and abstract processes might be useful, in practice, the distinction is not easily made. This study annotates the Representing Action used by the teachers based on whether they represent Participants, Processes or Circumstances. The ideational meanings made in the Representing Action are related to their linguistic forms. For instance, representations such as 'globe' and 'line' are annotated as participants, representations such as 'digging' and 'going' are coded as processes, and representations such as 'before' and 'outside' are noted as circumstances.

4.1.5.1.1 Indexical Action

The third category of action delineated by Martinec (2000) is Indexical Action. They are Communicative Gestures and Language Dependent Gestures because they necessarily accompany language and require it for interpretation. While Language Dependent Gestures usually co-contextualise with language, they do not replicate the exact meanings. Instead, the intersemiotic interaction brings an additional layer of ideational dimension to the meanings made through the gestural realisation.

Through the analysis of the teachers in the two lessons, three major types of realisations of ideational meanings in Indexical Action are identified in pedagogic semiosis. They are the representation of Importance instantiated through rhythmic beat, the representation of Receptivity instantiated through open palms, and the

based on whether they represent Participants, Processes or Circumstances. The ideational meanings made in the Representing Action is related to their linguistic forms. For instance, representations such as 'globe' and 'line' are annotated as participants, representations such as 'digging' and 'going' are coded as processes, and representations such as 'before' and 'outside' are noted as circumstances.

4.1.5.1.1 Indexical Action

The third category of action delineated by Martinec (2000) is Indexical Action. They are Communicative Gestures and Language Dependent Gestures because they necessarily accompany language and require it for interpretation. While Language Dependent Gestures usually co-contextualise with language, they do not replicate the exact meanings. Instead, the intersemiotic interaction brings an additional layer of ideational dimension to the meanings made through the gestural realisation.

Through the analysis of the teachers in the two lessons, three major types of realisations of ideational meanings in Indexical Action are identified in pedagogic semiosis. They are the representation of Importance instantiated through rhythmic beat, the representation of Receptivity instantiated through open palms, and the representation of Relation instantiated through pointing. They are represented in Figure 4.10.

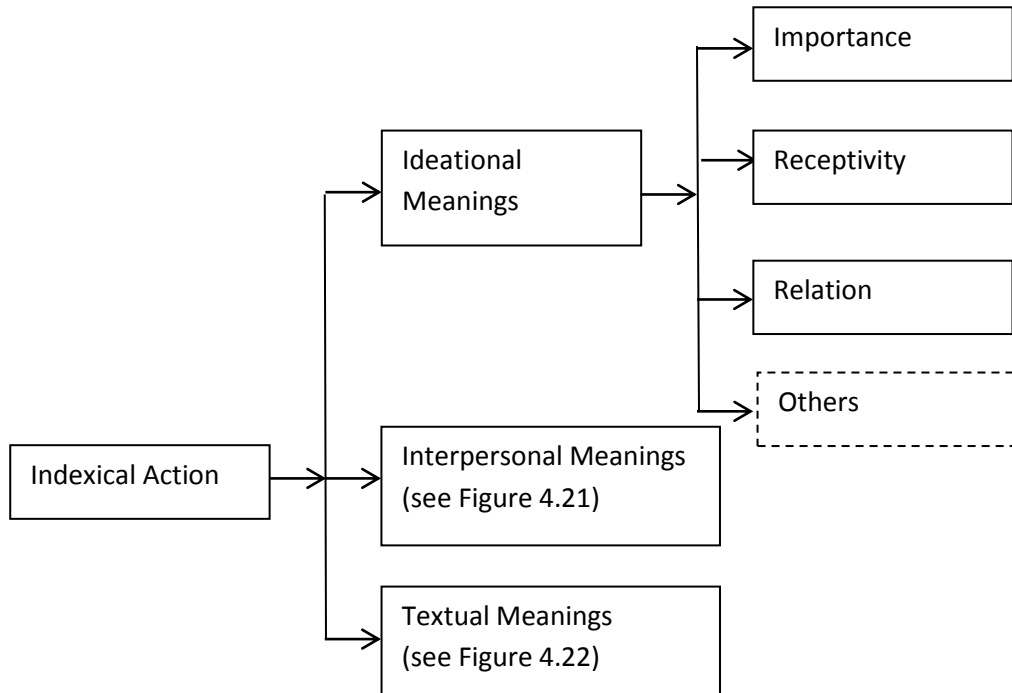


Figure 4.10 Ideational Meanings in Indexical Action

The representation of Importance is instantiated through the repetitive and rhythmic swing or beat of the arm in tandem with speech. The analysis of the classroom data indicates that Adeline regularly uses Indexical Actions realising the representation of Importance to reinforce the meaning she makes through language. Instances of Indexical Action realising the representation of Importance are represented in Figure 4.11.

The representation of Receptivity is instantiated by open palms along with the regular rhythmic movement of the arm. The Indexical Action realising the representation of Receptivity conveys welcome and openness. It also realises the interpersonal meaning of attitude through positive affect. In addition, it signifies an expansion of negotiation space in Engagement as described by Hood (2011). This is

discussed further in Section 4.1.5.2. Figure 4.12 shows the instances where Wilson and Adeline use Indexical Action to realise the representation of Receptivity.



Figure 4.11 Indexical Action realising the representation of Importance



Figure 4.12 Indexical Action realising the representation of Receptivity

The representation of Relation is realised through pointing as an Indexical Action. The act of pointing at an object can also be Representing Action. However, the most frequent form of pointing identified in the classroom data analysed suggests that the deictic gesture of pointing is often dependent on accompanying language to disambiguate its meaning. There is also an additional layer of ideational meaning that the representation of Relation as a Representing Action realises through pointing. It is that the gesture, both physically, and vectorally by extension, mediates between the enactor to the object or goal it is referencing. This connectivity draws attention to the goal which the enactor points to. In the classroom analysis, the goals are usually the students, the whiteboard or the projection screen. Instances of Indexical Action realising relation through the use of pointing at the whiteboard, through the visualiser, to the screen and at the students are shown in Figure 4.13. Pointing is also discussed further in Section 4.1.5.3.



Figure 4.13 Indexical Action realising the representation of Relation

While these three realisations of Indexical Action recur regularly in the analysis of the classroom data, and can arguably be viewed as features of pedagogic discourse, there are also many other, less prominent but nevertheless present, realisations of Indexical Action in the data. This may include the teacher crossing her arms or scratching her head. As discussed earlier, while these are ostensibly Performative Gesture, some of them may require language to elucidate their meanings and can be described as Communicative Gesture, and more specifically, Indexical Action.

As such, in the context of the teacher expressing doubt through language as he scratches his head, it is possible to interpret that gesture as an Indexical Action expressing uncertainty. Similarly, as shown in Figure 4.14, both teachers tend to fold their arms when injecting personal anecdotes into their lessons. While the action of crossing arms may be construed as a Presenting Action to warm against cold, the action can also be an Indexical Action, suggesting defensiveness. The latter is more likely in reference to what is said in language (co-text) and in the Lesson Microgenre of Discourse on Rapport-Building (context). In addition, it must be noted that the same physical action can be indexical for different meanings. The same act of crossing arms can be an Indexical Action realising disapproval or authority instead of defensiveness. Again, the context and co-text are needed to disambiguate the interpretation.



Figure 4.14 Indexical Action realising Defensiveness and Disapproval



Figure 4.15 Indexical Action realising Assertiveness

It is also interesting to observe that Adeline regularly places her hands on her waist when she is issuing instruction in the Lesson Microgenre of Discourse on Instructions. Figure 4.15 shows instances of this in her lesson. This action, performed within the specific context and co-deployed with the meanings made in language, can reasonably be construed as an Indexical Action signifying assertiveness and authority. It reinforces the hierarchical relationship between teacher and students. Nevertheless, it is useful to recognise that the instances of Indexical Action which Wilson and Adeline make in Figures 4.14 and 4.15 can either be construed as

Communicative Gesture or Performative Gesture, depending on the context and co-text.

4.1.5.2 Interpersonal Meanings in Gesture

Martin (1995, 2000) and Martin & White (2005) develop the Appraisal Theory to more comprehensively describe the interpersonal meanings made in language. The systems of appraisal are located on the stratum of discourse semantics. These systems realise power (status) and solidarity (contact) on the level of register, following the work of Poynton (1985). The dimensions of Appraisal are reproduced in Figure 4.15. The productivity of Appraisal Theory is demonstrated in its application to a range of other semiotic resources apart from language. This includes Macken-Horarik (2004) on images, Stenglin (2008) on 3-Dimensional Space and Hood (2011) on gesture. In particular, Hood (2011) proposes that the three aspects of interpersonal meanings in appraisal: Attitude, Graduation and Engagement, are embodied in gesture as well. Hood (2011) argues that gesture can express feelings and values in Attitude, they grade meaning along various dimensions in Graduation and they expand or contract space for others during interaction in Engagement. Hood (2011) identifies instances from her study of a University lecturers' use of gestures as examples for her proposals.

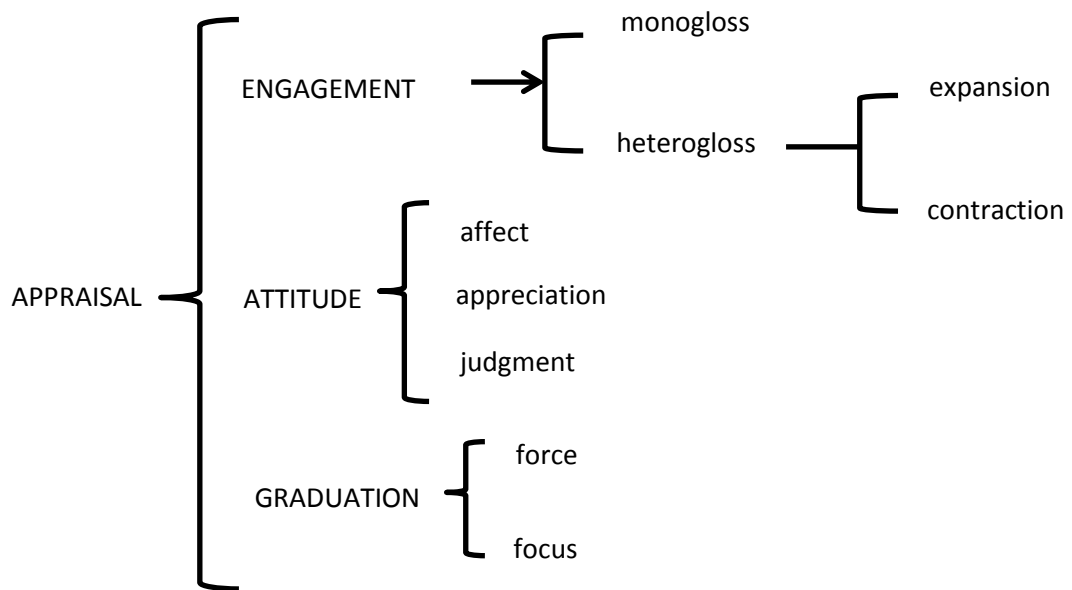


Figure 4.16 Dimensions of Appraisal

(reproduced from Martin & White, 2005: 38)

Ekman & Friesen (1978), Ekman & Rosenberg (2005), Hood (2011) and others have observed that facial expression is generally acknowledged as the primary means by which Attitude, in particular, the sub-categorisation of Affect, is embodied. As this study does not extend to studying facial expression, the focus is on how attitude is conveyed thorough gestures. Unlike facial expressions, where a sophisticated set of attitudes can be registered, the attitudes embodied in gestures may be far less complex. In this study, a polemic set of values that broadly classifying the attitudes in gesture as Positive and Negative are proposed. The distinction in polarity lies in the assumption that gestures generally signify positive attitude. Negative attitude is encoded when a contrary point is made, when negation is expressed or where adversarial meanings are represented. For example, Negative attitude is embodied in the gesture of the hand thrust forward with the palms

shaking to signify 'No'. Figure 4.17 depicts instances in the first frame of both rows where Positive attitude is encoded in the gesture. The last two frames in both rows display an instance of Negative attitude embodied in the gesture made by Adeline and Wilson respectively.



Figure 4.17 Positive and Negative Attitudes in Gesture

Attitude is coded for gestures under both the category of Representing Action and Indexical Action. Martinec (2001: 118) explores engagement in Presenting Action as “social relations between interactants which are realized by the distance and angles of bodies... and the social meaning of the special zones”. As mentioned earlier, in this study, meanings realised through proxemics are discussed in relation to the use of space through the positioning and the movement of the teacher in the classroom. Hence, in my analysis, Presenting Actions are not coded for interpersonal and textual meanings as they do not serve primarily a signifying function.

The aspect of Graduation in interpersonal meanings is described by Hood (2004, 2006). She is concerned, however, that “by grading an objective (ideational) meaning the speaker gives a subjective slant to the meaning, signalling for the meaning to be interpreted evaluatively” (Hood, 2011: 43). This can be extended to the meanings of intensity, size, quantity, scope (Graduation as Force) or of specificity or completion (Graduation as Focus). As discussed earlier, the issue of subjectivity is addressed in this study through 1) the detailed annotation of both the formal and functional descriptions of gesture in the analysis of the classroom data, 2) the description of gesture to include both Communicative Gesture and Performative Gesture as well as 3) in the intersubjective quadnocular perspective adopted.

Martinec (2001) discusses the other aspects where the interpersonal meanings of graduation are realised, namely size, specificity, speed and muscle tension. This study foregrounds the aspect of speed in constructing graded meanings. Speed, as a broader category, can also be taken as a proxy reference, to some extent, for intensity and muscle tension. An elemental three point scale indicating Fast, Medium and Slow is used as an approximate measure for the gesture. Gestures with slow graduation connote emphasis and deliberateness. Gestures with fast graduation convey urgency, energy and dynamism. This is manually coded according to the duration in which a particular gesture is made in the lesson, as recorded in the video and timed in the playback during annotation.

The third aspect of Appraisal Theory is Engagement. This is realised through the positioning of the hands to expand and contract negotiation space for the other

voices in the discourse. The systemic choices in Engagement are reproduced in Figure 4.18.

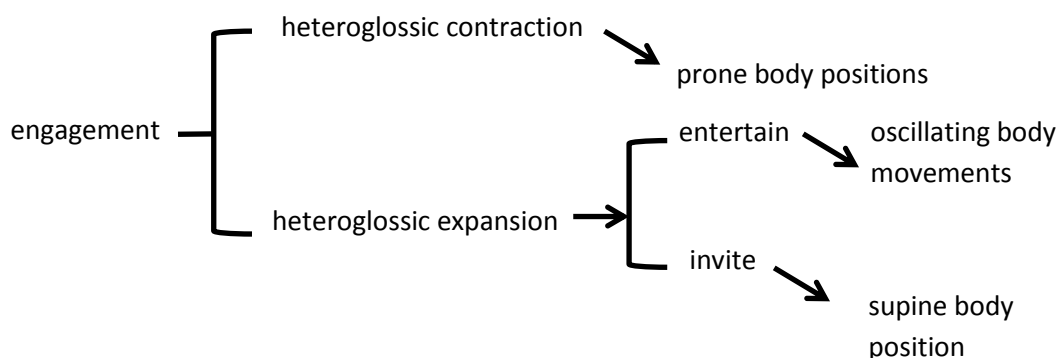


Figure 4.18 Dimensions of Engagement

(reproduced from Hood, 2011: 46)

Following the categorisation proposed by Hood (2011: 46), an open palm or palms up position “embodies an elicitation move on the part of the teacher, enacting an expansion of heteroglossic space, inviting student voices into the discourse”. This is frequently observed during class discussion, when the teacher asks questions and invites responses from the students. This is depicted in the first two frames of each row in Figure 4.19 where Adeline and Wilson use this gesture regularly to expand the negotiation space and convey a sense of receptivity and openness. The palms-down position contracts the space for negotiation. It deters contribution and involvement from the other party. It usually serves to assert the authority of the teacher and is often used during the Lesson Microgenre of Discourse on Instructions. The last frame of both rows in Figure 4.19 shows Adeline and Wilson using this gesture to contract negotiation space and convey a sense of firmness and resoluteness.



Figure 4.19 Expansion and Contraction of Negotiation Space



Figure 4.20 Representation of Possibility

Beyond the expansion and contraction of interactional space, the modality of possibility can also be expressed through an oscillating gesture, where the hand rotates or traces a circular movement. Oscillating gestures represent possibility and usually co-occur with the linguistic expression of modality in co-contextualising

relations. The interpersonal meanings of engagement made through gestures serve to coordinate and regulate the ebb and flow of the discussion. Figure 4.20 shows a continuous sequence of shots in an instance where Adeline and Wilson use the oscillating gesture. Figure 4.21 displays the systems for the interpersonal meanings in representing and indexical actions.

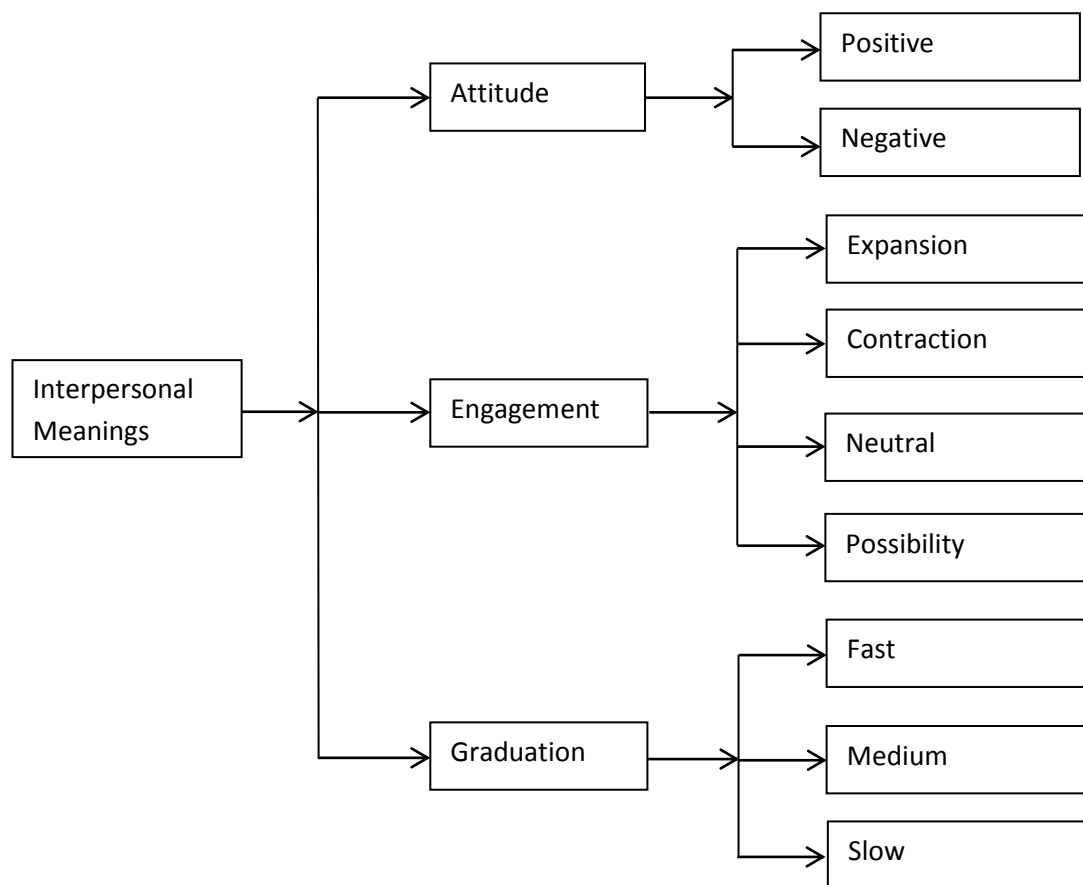


Figure 4.21 Interpersonal Meanings in Representing and Indexical Actions

4.1.5.3 Textual Meanings in Gesture

The textual metafunction serves as an organisational resource for the ideational and interpersonal metafunctions. Martinec (2004) argues that gestures embody the

rhythmic flow of information according to different wavelengths in Indexical Action. Each wavelength presents a peak where prominence is given to the meaning made. Martinec (2004) also proposes a hierarchy of wavelengths where the shorter wavelengths correspond to peaks in a longer wavelength. In the analysis of classroom data in this study, the dimension of rhythm is coded through approximating the rhythmic beat or repetitive motion of a particular gesture. This is especially so in Indexical Action where beats are used regularly to realise the representation of Importance in the ideational meanings made by language. The systems in the Textual meanings for Representing and Indexical Actions are displayed in Figure 4.22.

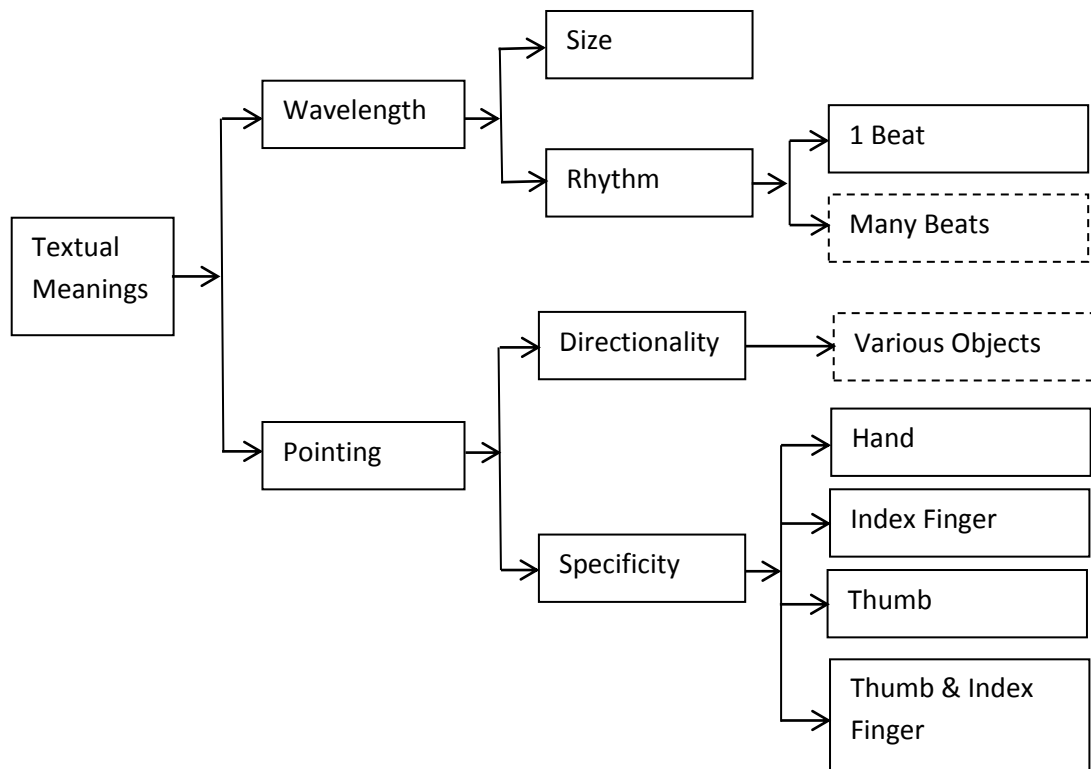


Figure 4.22 Textual Meanings in Representing and Indexical Actions

Following Hood (2011), another aspect of textual meaning of identification is realised through the action of pointing. Hood (2011) proposes the dimension of specificity in addition to the dimension of directionality in Martinec's (2004) conception to pointing. This is based on her observation of the University lecturer's use of gesture. Hood (2011: 38) argues that variation in bodily resources can be interpreted "as varying along a cline of specificity". As such, the "smallest body part that enables the highest degree of specificity is the little finger". Hood's (2011) proposition is applied in this study and specificity is represented in terms of pointing with the index finger, with the entire hand, a fist or with specific fingers.

The directionality of pointing in the classroom is usually at the interfaces displaying information. This includes the laptop's projection on the screen, the whiteboard and through the visualiser, where the notes and gesture are projected on the screen. Such directional goals can signify a physical mediation between the enactor, in this case, the teacher and the information presented. This demands and draws attention to the representations on the interface which can consist of written language, images, figures and symbols as well. Figure 4.23 depicts instances of Adeline and Wilson's pointing at interfaces where information is represented. The teacher may also point towards the students, sometimes collectively as a class and sometimes as individuals. In addition to having high specificity through the act of pointing with the index finger, the gesture also functions ideationally as an imperative and interpersonally to demand engagement. The intensity of these meanings is reduced when an entire hand, of lower specificity, is used to point

instead. Figure 4.24 shows instances of Wilson pointing at the students, using the index finger, the thumb and with the entire hand in the three frames respectively.



Figure 4.23 Pointing at Interfaces displaying Information



Figure 4.24 Pointing at Students

4.1.6 Summary of Approach to Gesture

This study develops the pioneering work done by Martinec (2000, 2004), Hood (2007, 2011) and others in gesture within the Systemic Functional theoretical

perspective. They have, in turn, built on the foundational studies in gesture by researchers in the field of non-verbal communication.

Informed by the pilot study of a pedagogic discourse and the preliminary analysis of the classroom data, as well as ascertained by the intensive annotation and analysis of the actual corpus in Chapter 5, the theoretical apparatus proposed by Martinec (2000, 2004) and Hood (2007, 2011) have been applied and adapted in various aspects and to varying degrees in the SF-MDA approach to pedagogic discourse.

In this study, the definition of gesture is expanded to encompass both Communicative Gesture (categorising Martinec's (2000) Representing Action and Indexical Action) and Performative Gesture (categorising Martinec's (2000) Presenting Action). In relation to language, Communicative Gesture is sub-classified as Language Independent Gesture (categorising some of Martinec's (2000) Representing Action), Language Correspondent Gesture (categorising some of Martinec's (2000) Representing Action) and Language Dependent Gesture (categorising Martinec's (2000) Indexical Action). The gestures made by the two teachers in this study are annotated based on their physical forms and their functional semantics. The classification of gesture used in this study is represented in Figure 4.1.

The meanings made through gesture are organised metafunctionally. The meanings and systems formulated in the three types of actions proposed by Martinec (2000) are applied and adapted for the investigation of ideational

meanings. For instance, the transitivity processes are used to describe the ideational meanings made by Presenting Action (see Figure 4.3). The categories of Participants, Processes and Circumstances as well as Hood's (2007) notions of Concrete Entities and Metaphorical Concepts are used to code the ideational meanings made by Representing Action (see Figure 4.6). In Indexical Action, the ideational meanings most commonly observed in pedagogic semiosis are coded as the representations of Importance, Receptivity and Relation in this study (see Figure 4.10).

In terms of interpersonal meanings, Martin & White's (2005) Appraisal Theory, extended by Hood's (2011) as systems of encoding Attitude, Graduation and Engagement in gesture, are applied in this study. Interpersonal meanings are annotated for Representing Action and Indexical Action (see Figure 4.21).

The annotating of textual meanings in this study follows principally the systems proposed by Matinec's (2004) and Hood's (2011). Matinec's (2004) description of the wavelength and rhythm in gesture is coded as Beats in this study. Hood's (2011) dimensions of directionality and specificity in the realisation of textual meanings are coded in the data analysis. Textual meanings are annotated for Representing Action and Indexical Action (see Figure 4.22).

The discussion in this chapter provides a top-down orientation to gesture, where research and theoretical conceptions on gesture are examined, extended and exemplified with a selection of instances from the corpus. The aim is to develop the theoretical apparatus for the intensive annotation and detailed analysis of the actual classroom data in Chapter 5.

4.2. Spatial Pedagogy

The SF-MDA approach adopted in this thesis goes beyond the study of gestures used by the teacher in the classroom, to investigate their use of space through positioning and movement. Martin (2010: 92) observes that Kress et al. (2005) “persuasively argue for the complex pedagogic discourses which are realised by these different modes”. He explains that “based on the layout of the classroom and the visual display, contradictions between the participative and authoritarian pedagogy come across” (Martin, 2010: 92). In other words, the use of space in the classroom also realises pedagogy. This discussion presents a top-down orientation on the different types of space in the classroom. It also explores how metafunctional meanings are constructed through the configuration of space in relation to the Lesson Microgenre, discussed in Chapter 3, as well as through the position of the teacher relative to the students.

Following recent research in spatial semiotics (see, for example, Stenglin 2009a, 2009b, 2009c, 2011), this study investigates the use of space through the positioning and movement of the teacher which is viewed as meaningful in the sense that a ‘spatial pedagogy’ is realised. That is, spaces in the classrooms are constantly negotiated and reconfigured 1) statically through the stationary position of the teacher in a specific location and 2) dynamically through the teacher’s movement and pacing. The teacher’s position in the classroom is significant as the material site where the semiotic resources of the teacher (for example, gesture, language and

others) are embodied and instantiated. As such, different spaces in the classroom acquire specific meanings due to the typical configuration of semiotic choices in the pedagogic discourse that occurs in that space, as well as the positioning and distance of the site relative to the students and the teaching resources, such as the whiteboard and screen.

In this study, the positioning and movement of the two teachers are mapped and a categorisation of the various spaces in the classroom is proposed according to the functional use of those spaces. Based on the analysis, meanings are ascribed to the different material sites in the classroom. The study reveals that the teacher's use of space through positioning and movement is a significant semiotic resource for effective pedagogic discourse.

Halliday's three metafunctions, described in Chapter 2, are realised through spatial semiotics (Stenglin, 2008, 2011; Martin & Stenglin, 2007) just as they are realised in gesture discussed earlier in this chapter. Kress et al. (2005), for instance, propose that ideational meanings in classroom spaces are realised through the interaction of three factors, namely, 1) the teacher's movement itself, 2) the meaning of the space in which the teacher moves, and 3) how and where the students may move. For example, they describe a teacher's slow and deliberate movement as 'invigilating' which they term 'a patrol'. 'Pedagogic space' in the classroom is also constantly reconfigured, "indicated by the placement of the teacher's desk in relation to the rows of tables; and produced by the transforming action of the teacher in his pacing" (Kress et al., 2005: 26).

With respect to textual meanings, Kendon (2010) explains that the physical site allows for people to organise themselves spatially according to the nature of their interaction. Kendon (2010: 14) observes that “environmental structuring partly constraints the kinds of formational structures of gatherings that can occur”. Kendon (2010: 14) surmises that the “interrelations between the structuring of the environment and the structuring of the interaction” is a “very complex and fascinating question”. Following Kendon’s (2010) lead, the organisation of the classroom environment in the teacher’s use of space and its relations to the nature of classroom interactions are explored in this study.

Lastly, Hall (1966), Ravelli & Stenglin (2008) and Matthiessen (2009) explain that material distance realises ‘semiotic distance’ which establishes interpersonal social relations. In our case, it is the relationship between the teacher and students in the classroom. In terms of social distance, Hall’s (1966) seminal work on proxemics led to the development of the ‘distance sets’ hypothesis. This is represented in Figure 3.10 of Chapter 3. Hall (1966) defines four general sets of space — namely, Public, Social-Consultative, Causal-Personal and Intimate — according to the typical distances in which they occur, as well as the extent of visibility and contact experienced by the other party. In the context of the classroom, most communication takes place within the Social-Consultative Space, which construes the appropriate formal and professional relationship between teacher and students.

Given that the Social-Consultative Space is a generalised space for most teacher-students interaction, it is useful to develop sub-divisions within this space to more adequately investigate the differences in ideational, interpersonal and textual

meanings in different parts of the Social-Consultative Space in the classroom. A rudimentary segmentation and preliminary theorisation of the different types of space in pedagogic discourse located within Hall's Social-Consultative Space is proposed and applied in this study. This extension of Hall's (1966) foundational work on proxemics is undertaken with the view to explore how spatial semiotics can contribute to a SF-MDA approach to pedagogy.

4.2.1 Types of Space in the Classroom

Four different types of space in the classroom which are situated within Hall's Social-Consultative Space are proposed. They are namely 1) Authoritative Space, 2) Personal Space, 3) Supervisory Space and 4) Interactional Space. The proposal is based on the view that the semantics of classroom space are regularised through conventional stages in the development of a lesson, described as Lesson Microgenres in Chapter 3 of this study.

Therefore, the same physical space in the classroom is reconfigured by the nature of activities and interactions into a new semiotic space with a different set of meanings. This happens when the Lesson Microgenre changes according to configurations of semiotic selections. In this regard, the spatial semiotics of the space changes according to the nature of the activity which is taking place. This point is discussed below in relation to the four types of space in the classroom which are situated within Hall's (1966) Social-Consultative Space.

The space in front of the teacher's desk and in the front centre of the classroom can be described as the Authoritative Space where the teacher positions himself to conduct formal teaching as well as to provide instructions to facilitate the lesson. The semantics of this space can be observed from the teacher's return to this position, for example, to continue with the lesson or to provide further instructions. The Authoritative Space is located at the outer limit of the Social-Consultative Space as it is usually furthest from the students in terms of proximity. Following from Matthiessen's (2009) discussion of Hall's (1966) distance sets, the material distance in the Authoritative Space constructs a formal tenor in the relationship between teacher and students. Figure 4.25 shows instances of Adeline and Wilson occupying the Authoritative Space during the lesson.

As explained earlier, physical spaces in the classroom may not always only serve a single function. They are constantly redefined by the nature of the lesson activities or the Lesson Microgenres. For instance, the space behind the teacher's desk can be described as the Personal Space where the teacher packs her items and prepares for the next stage of the lesson. This use of the Personal Space by Adeline and Wilson is depicted in Figure 4.26. However, the same space can be transformed into an Authoritative Space when she starts to teach from behind the teacher's desk. This reconfiguration of the space is observed when the teacher points and teaches with the visualiser located on the teacher's desk. Hence, the space behind the desk can be transformed from a Personal Space into an Authoritative Space, depending on the nature of the lesson activity as constructed by the configuration of semiotic

selections. Adeline's transformation of the Personal Space into an Authoritative Space is represented in Figure 4.27.



Figure 4.25 Classroom Front Centre (Authoritative Space)



Figure 4.26 Around the Teacher's Desk (Personal Space)



Figure 4.27 Around the Teacher's Desk (Authoritative Space)



Figure 4.28 Wilson's Use of Supervisory Space

There are also occasions where the teacher moves between the rows of the students' desk without offering consultation to the student(s) but primarily for the purpose of supervision. The teacher may also pace alongside the rows of students' desks as well as up and down the side of the classroom transforming these sites into the Supervisory Space. This is observed in Wilson's lesson and instances are represented in Figure 4.28. This usually happens during the Lesson Microgenre of Student Work when a task is set to the students to perform individually or in groups. This has been observed in English classrooms in the United Kingdom by Kress et al. (2005), who explain that the teacher 'patrols' in these classroom space so as to ensure compliance of the students to the task set.

The Surveillance Space, located within the Supervisory Space, is where extreme control and power are exerted implicitly through a sense of 'invisible' monitoring. For example, the teacher positions himself/herself at the back of the classroom, often but not always, silently, watching the backs of the students as they go about their tasks. This forms a 'Panopticon' (Foucault, 1977/1995) where control and power are exerted over the students by means of invisible surveillance. Foucault (1977/1995: 195) explains, "[t]he major effect of the Panopticon: to induce in the inmate a state of conscious and permanent visibility that assures the automatic functioning of power". The positioning of the teacher at the back of the classroom follows this principle where power is exercised through surveillance from a vantage point, constructing a sense of 'permanent visibility'. In this manner, meanings of power and authority are constructed and asserted through the positioning of the teacher in relation to the students.

The Interactional Space is located along the cline of Social-Consultative Space but perhaps inclined towards the Causal-Personal Space (see Figure 3.10 of Chapter 3). The Interactional Space is realised by the teacher standing alongside the students' desk or between the rows of students' desks. This usually occurs during student activities where students are working on a set task individually or in groups. The closer proximity between the teacher and the student(s) facilitates interaction and reduces interpersonal distance. The interaction usually takes the form of personal consultation where the teacher offers guidance on the task set or clarification on an earlier instruction. In some instances, there might be occasional banter between the teacher and students as well. While the Surveillance Space and Interactional Space have been observed in other lessons, they are, however, not actively used by the teachers in the two lessons investigated for this study.

4.2.2 Summary of Approach to the Use of Space

This study recognises that the teacher's use of space in the classroom through static positioning and dynamic movement is a resource in the realisation of pedagogy and the construction of the classroom experience. The meanings made in the use of space are organised according to the ideational, interpersonal and textual metafunctions. While most of the classroom interaction is located within Hall's (1966) description of the social-consultative space, a sub-division of the types of space in the classroom is proposed in this study. They are the Authoritative Space, Personal Space, Supervisory Space and Interactional Space. While the meanings in

these spaces have been regularised over time due to conventional usage, they can still be redefined by the nature of Lesson Microgenre and reconfigured in terms of the teacher's proximity to the students and the available traditional and technological teaching media.

In a carefully-scripted and well-directed lesson which is produced on a movie set, there is a tendency for the range of semiotic resources to be coordinated effectively and seamlessly. The teacher is usually performed by a skilled actor, the acting is supervised by a director, and there is often meticulous post-production editing. Therefore it is not surprising to observe highly coordinated use of semiotic resources resulting in strong co-contextualising meanings. For example, Lim's (2010) investigation of the integration of semiotic resources of language, gesture and the use of space by the teacher, Mr Keating, in the Oscar-winning film, *Dead Poets' Society*, reveals that during the formulation of the central argument in the lesson, Mr Keating would take steps forward in asserting a point, and would move backwards when conceding to a counter-argument. This 'dance' is performed a few times before he makes an unusual and dramatic act of squatting in the middle of the classroom, with the students crowding over him, as he delivers the coup-de-grace, the key point of his lesson. The positioning of Mr Keating at the different stages in his formulation of the argument is adroitly coordinated with the meanings made in language and through his gestures. In comparison, the orchestration of the semiotic resources in authentic real-life lessons investigated in this study is far from seamless and less well-coordinated, though, at any point, no less meaningful.

This chapter presents the top-down orientation in describing and exemplifying the theoretical systems of gesture and the meanings made in the types of classroom space. The mapping of the selections in gesture and spatial pedagogy realised by the two teachers to construct the classroom experience is discussed in Chapter 5.

CHAPTER 5

APPROACH AND ANALYSIS

This chapter offers a bottom-up orientation to the multimodal discourse analysis performed in this study. It applies the theoretical apparatus and conceptions discussed and developed in Chapter 3 and 4 on authentic classroom data.

The approach in the data collection, annotation, analysis and visualisations that is undertaken in this study is described. The productivity of many of these theories is examined as they are extended to investigate pedagogic semiosis.

The intensive annotation and detailed analysis of the lesson by Adeline and Wilson are performed through the *Microsoft Office Excel 2010* (EXCEL) platform and a 12 seconds exemplar of each lesson is shown in Appendix V. This chapter presents the statistical findings of the analysis and discusses the various points of interest that have surfaced through the analysis. The discussion is sequenced according to the parameters described. The semiotic selections are discussed in terms of the Lesson Microgenres, Gesture, Use of Space and Language in the respective sections.

5.1 Approach in Study

5.1.1 Collection of Data

The educational landscape in Singapore, the ideologies espoused in the Ministry of Education's policy and curriculum documents as well as the description of the subject General Paper are discussed in Chapter 3. In this section, the methodology of data collection, annotation, analysis and visualisation is outlined.

The subject General Paper is taught at the Pre-University level across the 22 junior colleges and one centralised institution in Singapore. One of the junior colleges in Singapore, hereafter, termed Singapore Junior College (SJC), was invited to participate in this study. SJC is a mid-tier junior college in Singapore. It takes in students with the middle-range scores that qualify for pre-university education. The Singapore-Cambridge General Certificate of Education (Advanced Level) results that SJC produces has historically been in the approximate median of the overall national performance as well.

An invitation letter was sent to obtain permission from the Principal of SJC for the teachers from the English Department to participate in this study. The principal allocated a classroom and an adjoining room for the installation of our audio-visual equipment. The adjoining room was used as a control room where the researcher was able to monitor the lesson proceedings and made notes via the eight cameras interface as seen in Figure 2.1.



Figure 5.1 Rifatron's eight Cameras Interface

Eight Closed-Circuit Television (CCTV) and two microphones were installed on the different corners of the ceiling in the room. The eight CCTVs were set up to capture every part of the classroom simultaneously so that all activities during the lesson are recorded. In order to reduce the Observer Effect (see, for example, Samph, 1976 and Whitley Jr & Kite, 2006/2010) or Hawthorne Effect (see, for example, Mackey & Gass, 2005 and Patten, 2007) and to have the data reflect the natural and usual behaviour in the classroom, CCTVs, instead of having obtrusive video cameras, were chosen as the technological tools to record the lesson. This is because the CCTVs were set up before the lesson and they were fixed in position at the inconspicuous corners of the ceiling. CCTVs also do not require a human

operator which eliminates the need for the presence of the third party researcher. This allows the collection of data to be done in an unobtrusive and as natural a setting as possible. The interface for viewing and observing the footage from the eight perspectives presented by the CCTVs simultaneously as the lesson progresses is supported by the Rifatron System as displayed in Figure 5.1.

A research meeting was conducted with the Head of Department for English as well as with the teachers involved. The teachers were told that, apart from relocating their lessons to use the specific classroom set-up with CCTVs for this project, they were to conduct the lesson as per normal, following the Department's Scheme of Work and their own Lesson Plan. They were requested not to make special preparations for the lesson or to do anything out of the ordinary as this project aspires to collect data that are representative of the regular lessons they conduct with the students. There was no specification on the need to use technological teaching resources, if the teacher has not been using them as part of their usual teaching practices. The aim of the project, as told to the participants, was to observe the multimodal nature of teaching and learning in the General Paper Classroom. It was emphasised that while there will be discussions on the different pedagogic styles and strategies adopted by each teacher, the purpose is not to evaluate or assess their teaching ability. The teachers were also assured that they will remain visually anonymous and that pseudonyms will be assigned for the Junior College and the teachers participating in this study.

In addition to the video-recording of the lessons, curriculum documents produced by the Department, such as the Scheme of Work and the lesson materials

used by the teachers, were also collected. A discussion with the Head of Department and the Year Two Level Head on the Scheme of Work and the assessment rubric was carried out to have an updated understanding of the English Department's philosophies and strategies in preparing the students for the General Paper Examinations. This is discussed in Chapter 4. In addition, this researcher also has the advantage of being an insider to the system, being privy to the policies, profiles of students, college and departmental culture as I taught General Paper in the English Department of SJC for almost four years. I also functioned as the Year Two Level Head for General Paper for the last three years prior to embarking on this study.

A total of five teachers participated in this project and eight lessons of 90 minutes each were recorded. In consideration to the constraints of time and space in this study, after viewing, studying and transcribing the linguistic texts for the eight lessons, I have decided to select two lessons by two different teachers for detailed multimodal annotation and analysis.

The two teachers identified are given the pseudonyms, Wilson and Adeline. The two lessons are chosen as there are several similarities between them, which make them comparable in terms of data analysis. Firstly, both lessons were for Year Two (Final Year) classes which comprise students (aged 17) of the same mixed ability profile. Secondly, the timing of the lessons was identical as both lessons were at the same curriculum genre of a Review Lesson, the final lesson before the students sit for their preliminary examinations. Thirdly, both lessons were on the same topic where the focus is the production of a good answer to the Application Question in the General Paper. And finally, the students in each class had spent approximately

20 months with the same teacher at the time of the study; hence there is a sense of continuity and familiarity with the teacher.

While there are compelling similarities between the two lessons which serve as controls, what makes the two lessons interesting for study are the significant differences in the profiles of the two teachers, which represent the variables in this study. Wilson and Adeline differ in gender and also in teaching experience. Wilson, male, in his twenties, is a novice teacher with less than two years of experience in teaching General Paper. Adeline, female, in her thirties, is an experienced teacher and has taught General Paper for more than ten years. She also holds leadership appointment in the English Department and is intimately involved in the planning of the curriculum and the Scheme of Work for the teachers. Despite the similarities in the lesson stages, espoused objectives and materials, the multimodal analysis in the following sections reveals very different use of semiotic resources by the two teachers. Through the orchestration of semiotic resources, unique classroom experiences are constructed in the multimodal pedagogic discourse of each lesson.

While the differences in the teacher's profile are marked, generalisations cannot be extended to the gender class or level of experience which Wilson and Adeline inadvertently represent. Neither can the observations of the pedagogical styles and strategies be broadly extended as consistent features across all their lessons. This study is limited in scope as it solely analyses one lesson from each teacher. Instead of extending the findings to attributes of the teacher, this study focuses on examining and comparing the different set of meanings constructed in the teacher's use of space through the positioning and movement in the classroom

as well as how these meanings are contextualised with the co-deployment of the other semiotic resources realising the teacher's pedagogy. This is undertaken with the view to developing a theoretical and analytical approach which may be applied to a larger corpus of lessons.

5.1.2 Annotation of Data

After the collection of data, the video and audio recording are fused and rendered into the wmv. format for treatment and play. The huge files are divided into three sections, with eight camera perspectives each, and are accessible through the standard media players such as the Windows Media Player, Real Player, Quick Time Media Player and others.

The speech by the teacher and students is then manually transcribed on *EXCEL*. While there were initial considerations to use manual transcription programs, such as *Transcriber*⁴, the need to later export the transcription into spreadsheet for further annotation along the other parameters and the ease of statistical analysis with *Pivot Charts* which *EXCEL* offers, influenced the decision to record the linguistic transcription on the spreadsheet.

Each new clause takes up one new row on the spreadsheet and each sheet contains a full lesson from the point in which the teacher enters the classroom to the

⁴ <http://trans.sourceforge.net/en/presentation.php>

point when the teacher dismisses the students. The decision to transcribe the lesson in this way recognises that the lesson is considered to begin the moment the teacher walks in and ends when the students are dismissed. This is regardless whether the start and end of the lesson is formally signalled by the school bell. For example, Wilson's lesson is the first lesson of the day and he enters the classroom, which is already filled with the students who have just returned from the school assembly, way before the bell rings to signal the official start of lesson. In contrast, Adeline walks into the classroom several minutes after the bell has rung, a common practice for most teachers in SJC. Both teachers also do not dismiss the class immediately after the bell has rung but continue with the lesson closure up to several minutes after the bell. Students who seem distracted after the bell has rung were requested to pay attention to the teacher and to disregard the bell. For instance, Wilson says, "Wait a second. Don't be in a rush to run" and Adeline urges, "Stay with me".

Having completed the manual transcription of the verbal language used in the lesson, the lesson is reviewed and the video time in which each clause begins is manually entered into a column next to the clause. This is a laborious process but it is nevertheless important to assign each clause to the video-time in each lesson. With this information, the linguistic text is now time-stamped and the occurrence and duration of each clause is now recoverable. Time-stamping also facilitates eventual search and retrieval of video sequences which correspond with the linguistic text, given that both are on different interfaces.

Following this, the rigorous and time-intensive stage of annotating the lesson along the different parameters commences. The various parameters investigated

and their theoretical underpinnings are discussed more fully in Chapter 3 and 4. Nonetheless, a brief introduction of these parameters is presented here.

5.1.2.1 Categories of Annotations

The parameters are divided broadly into five categories across 28 parameters as represented in Table 5.1. The first category is Time. The recognition of time as an integral resource is discussed in Chapter 2. The linguistic transcription of the lessons is time-stamped in this category.

The second category comprises the stages in the Lesson Genre and the Lesson Microgenres as well as the Skills and Content Topics. The Field, Tenor and Mode of the Lesson Microgenres, (in the parameters of Phenomenal Domain, Socio-Semiotic Process, Status, Contact, Affect, Distance, Semiotic Resource, Medium, Modality), are coded according to the contextual configuration of each Lesson Microgenre as instantiated in the lesson. Details of these parameters are discussed in Chapter 3.

Category	Parameters
1. Time	<ol style="list-style-type: none"> 1. Time Stamp 2. Linguistic Transcriptions
2. Lesson Genre & Lesson Microgenre	<ol style="list-style-type: none"> 3. Social Semiotic Process (Field) 4. Phenomenal Domain (Field) 5. Status (Tenor) 6. Contact (Tenor) 7. Affect (Tenor) 8. Distance (Tenor) 9. Semiotic Resource (Mode) 10. Medium (Mode) 11. Modality (Mode)
3. Gesture	<ol style="list-style-type: none"> 12. Directionality of Gesture (Formal) 13. Description of Hand (Formal) 14. Hands Level (Formal) 15. Use of Hand (Formal) 16. Contact with Object (Formal) 17. Types of Action (Presenting, Representing, Indexical) 18. Processes in Presenting Action 19. Representing Entity 20. Indexical Representation 21. Attitude (Representing and Indexical Action) 22. Graduation (Representing and Indexical Action) 23. Engagement (Representing and Indexical Action) 24. Specificity (Representing and Indexical Action) 25. Beat (Representing and Indexical Action)
4. Space	<ol style="list-style-type: none"> 26. Positioning & Movement
5. Language	<ol style="list-style-type: none"> 27. Transitivity 28. Mood & Modality

Table 5.1 Annotation Categories and Parameters

The third category is the coding of gesture. The gestures made by the teacher are coded according to the formal dimension and the functional semantics dimension. The formal dimension comprises description of the movement of the hand, the direction of the gesture, the palm direction, the level of the gesture, the

use of hand and the object with which the hands are in direct contact. The functional semantics dimension includes the Types of Action, the Representations in Indexical Actions, the Entities in Representing Actions and the Processes in Presenting Actions. Interpersonal meanings coded in the aspects of Attitude, Engagement and Graduation are annotated as well. Textual meanings coded in the aspects of Specificity, Directionality and Beat are also annotated. The theoretical orientation and foundation of these parameters are discussed in Chapter 4.

The fourth category is the use of space through the positioning and movement of the teacher in the classroom. The use of space the different classroom space during the lesson is annotated. The positioning and movement made by the teacher are also mapped. The theoretical formulations in the meanings made through the use of space in the classroom are discussed in Chapter 4.

The fifth category relates to language. A separate platform offered by the *Systemics*⁵, a software developed by Kevin Judd & Kay O'Halloran for the analysis of the linguistic text using Systemic Functional Grammar (See O'Halloran, 2003). From the analysis in *Systemics*, choices made in Transitivity and Mood are manually reproduced on the *EXCEL* spreadsheet for statistical analysis using the *Pivot Charts* enabled by *EXCEL* and, more importantly, for comparisons across the other parameters.

⁵ <http://courses.nus.edu.sg/course/ellkoh/Overview.html>

The coding of the data along the parameters requires expanding the number of rows beyond the total number of clauses as there might be more than one semiotic selection for each parameter made within the duration of one clause. Having coded all the semiotic selections of the lesson according to all the parameters, a macros program in *EXCEL* is written to expand the data set into a consistent representation of one second for each row. This translates the total data for the two lessons now consist of 15,628 rows, each representing one second, across the different parameters. The data for the two lessons consist a total of 11,658 rows, each representing one second, across the 28 parameters. Wilson's lesson is 6,035 seconds (\approx 100 minutes) and Adeline's lesson is 5,633 seconds (\approx 93 minutes) in duration. An exemplar of the annotation process is shown in Figure 5.2.

5.1.3 Analysis and Visualisation of Data

The statistical analysis of the data in the spreadsheet is accomplished through the use of *EXCEL* with the results displayed graphically on *Pivot Charts*. The frequency of certain semiotic choices and the resultant trends and patterns can be observed from the graphs, thereby allowing comparisons to be made. This reveals the dominance of certain semiotic selections by the teacher in the lesson and shows patterns and tendency when contrasted with another teacher's lesson.

Some of the choices in the parameters, such as the Lesson Microgenres as well as Positioning and Movement, are ranked according to the frequency of their appearance in one lesson and is compared with their presence in the other lesson.

This is useful in revealing the distinctive pedagogical style of each teacher and the contrasting strategies they employ in teaching the same topic at the same curriculum point in time. The specific observations and findings are built on the empirical evidence from the analysis of the two lessons and are discussed in the following sections.

The logogenesis of the lesson through the different stages of the Lesson Genre is visually represented through a graph on the *EXCEL* interface. The development of the lesson as it unfolds dynamically in time is displayed in Table 5.3. The distinction between the two lessons is accentuated through the graphical visualisation of the logogenesis.

Beyond fundamental statistical analysis, *Cytoscape*⁶ software is used to visualise the data in terms of networked graphs consisting of nodes and directed edges (see Figure 5.4A-B and Figure 5.18A-B). Developed by Shannon et al. (2003), *Cytoscape* is an open source bioinformatics software platform for visualising molecular interaction networks and integrating these interactions with gene expression profiles and other state data. However, its application is not confined within the scientific disciplines. Network graphs have also been used in the social sciences in fields ranging from education, sociology to political science. For example, Bender-deMoll & McFarland (2006) explore the affordances of dynamic network visualisations as a methodological tool and propose a framework for visualising social networks using data from a high school economics classroom. Likewise, Butts & Cross (2009) use network graphs to visualise global patterns of stability and

⁶ <http://www.cytoscape.org/>

change within blogs during the United States Presidential election campaign, and Dekker (2005) applies network graphs to analyse conceptual distance between people as an indication of the nature of communication within an organisation. In the present study, network graphs are used to display the unfolding of the lesson in its activity stages and the spatial patterns of positioning and movement in the classroom.

Cytoscape is used to visualise the Lesson Microgenres in each lesson according to 1) Categories of Lesson Microgenre, 2) Lesson Development, 3) Frequency of Occurrence and 4) Interconnectivity. *Cytoscape* is also used to visualise the use of Space in the classroom according to 1) Static Positioning or Dynamic Movement, 2) Correspondence to actual location in the classroom, 3) Frequency of Occurrence and 4) Directionality of movement from one space to another. They are discussed further and exemplified in Section 5.2.3 and Section 5.4.

Cytoscape is also used to visualise the model of a Curriculum Hypergenre proposed and developed in Chapter 3 to explain the inter-relationships between the different topics in the subject General Paper. These topics are represented as the different Skills and Content Topics extrapolated from SJC English Department's Scheme of Work. The inter-dependency between the different Skills & Content Topics is visually represented to emphasise that the Skills & Content Topics in the subject are not independent but are in inter-dependent relationships with each other. Hence, the inter-connectivity of the Skills and Content Topics is due to the nature of accretive learning (see Christie, 2002) in General Paper.

As discussed in Chapter 2, the coding and analysis of the language used in the classroom by the teachers are done through the system choices in Systemic Functional Grammar. The meanings made through language are coded according to the three metafunctions, namely ideational, interpersonal and textual. The metafunctional approach to meanings allow for comparisons made across language and gesture within the same metafunction.

Finally, a recent and relatively simple analysis which, at a glance, surfaces the most frequently repeated words in a text and depicts their salience through text size, position, and sometimes, colour, is Tag Cloud or Word Cloud Analysis. In addition to displaying the frequently used words, through the selection of clustering placement, words that collocate with each other or tend to be used together in the text are placed close together as well. Word Cloud Analysis is a form of visual representation of frequently used words in a given text and is most regularly used for the content of websites, such as the photo-sharing site, Flickr. More recently, Word Cloud Analysis has been used by British News agency, BBC, to create a word cloud of American President Barack Obama's inauguration address in January 2009⁷. The growing popularity of Word Cloud Analysis is, in part, attributed to the understanding that the most frequently repeated words features through the Word Cloud Analysis are informative proxy indicators for the main themes and foci of the stated discourse.

In this project, an open source Word Cloud generator program called *Tagxedo*, available at tagxedo.com is used. Developed by Hardy Leung, *Tagxedo's*

⁷ http://news.bbc.co.uk/2/hi/americas/obama_inauguration/7840646.stm

main function is to turn a set of linguistic text “into a visually stunning tag cloud- words individually sized appropriately to highlight the frequencies of occurrence within the body of text”⁸. *Tagxedo* also removes common words such as ‘is’, ‘are’, ‘do’ that are known as ‘stop words’. It uses a technique called ‘stemming’ that combine related words into a single word for the purpose of determining the frequency. Hence, singular and plural forms of the word are paired, such as ‘lesson’ and ‘lessons’, and the program is able to take into account irregular verbs such as ‘sting’, ‘stang’, and ‘stung’, ‘fly’ with ‘flies’ and ‘formula’ and ‘formulae’ as well. Feinberg (2010), developer of *Wordle*, another word cloud analysis program and predecessor to *Tagxedo*, explains the origins and the dynamics of Word Cloud Analysis. Feinberg (2010: 58) asserts that “notwithstanding *Wordle*’s special emotional and communicative properties, the analytic uses of information visualization are certainly available to the expert user”. He concludes with the truism that “a beautiful visualization gives pleasure as it reveals something essential” (Feinberg, 2010: 58). This study runs the linguistic text of both teachers through *Tagxedo* and the main themes and foci of their lessons can be inferred through the resultant graphical images. Comparisons between the two texts are made and the observations are discussed in Chapter 5.

⁸ <http://www.tagxedo.com/>

5.2 Logogenesis of the Lessons

As discussed in Section 5.1.1, both Wilson and Adeline's lesson are selected for analysis and comparisons because of the similarities they share contextually. Following Christie's (1993, 1997, 2002) Curriculum Genre Theory outlined in Chapter 3, the Curriculum Hypergenre in this study is the General Paper Subject. The Curriculum Macrogenre is the Skills and Content Topic of Application Question Structure. Situated as the final lesson before the Preliminary Examinations, the Lesson Genre for both lessons is a Review Lesson. Given these similarities, it is interesting to observe how each teacher adopts different pedagogical strategies to construct the lesson experience.

5.2.1 Categories of Lesson Microgenre

The categories of Lesson Initiation, Lesson Progress, Lesson Closure and Lesson Diversion are proposed to represent the logogenesis of the lesson. The Lesson Microgenres are listed in their categories in Figure 3.8 of Chapter 3.

As represented in Table 5.2, both Wilson and Adeline devote the most time on Lesson Progress, with Wilson spending about 80 minutes (79.60%) and Adeline spending about 78 minutes (82.75%). Wilson also spends more time at about 5 minutes (5.29%) on Lesson Initiation relative to Adeline's under 2 minutes (1.58%).

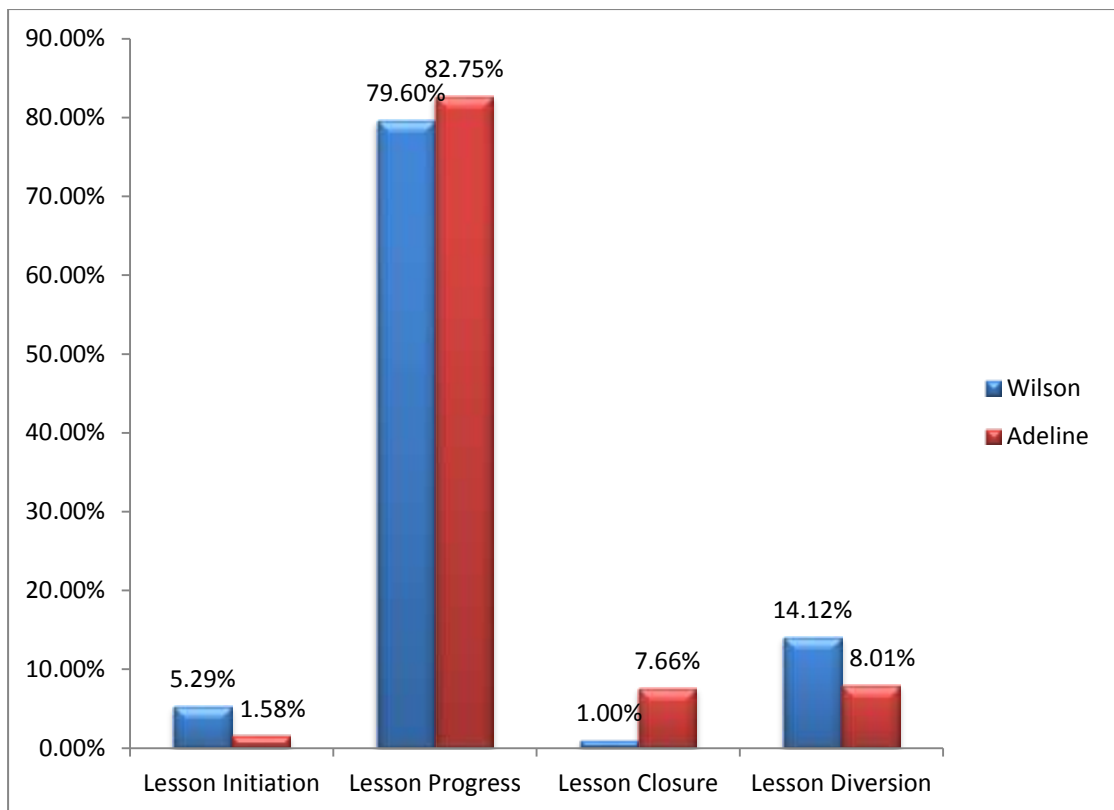


Table 5.2 Categories of Lesson Microgenre in the Lessons

A more detailed interpretation is provided in relation to the constituent Lesson Microgenres represented in each category. For instance, the longer time spent in Wilson’s Lesson Initiation is not on the Lesson Microgenres of Discourse on Learning Objectives and Discourse on Instructions, which function to introduce and situate the lesson. Instead, as shown in Table 5.4, a significant portion of the Lesson Initiation is spent on Discourse on Administration and Discourse on Explanation of Events. The significant time spent on administrative matters and general classroom business may be because Wilson’s lesson was the first lesson of the day.

In terms of Lesson Closure, Adeline spends a substantially longer time at 7 minutes (7.66%), relative to Wilson’s 1 minute (1.00%). In comparison, Wilson’s conclusion of the lesson appears truncated and rather abrupt. The longer time spent

on Lesson Closure by Adeline is due to time spent on Discourse on Summary of Learning as shown in Table 5.4.

The logogenesis of the lesson displayed in Table 5.3 is charted graphically by assigning a numerical value to the four categories of Lesson Microgenre over the lesson time. An arbitrary value of +1 is given for every second of Lesson Initiation and Lesson Closure, a value of +2 is given for every second of Lesson Progress and a value of -20 is given for every second of Lesson Diversion. The magnified negative value given to Lesson Diversion accentuates the visualisation of the negation that Lesson Diversion causes to the lesson. The Y-axis approximates the teaching and learning progression in the lesson and the X-axis displays lesson time in seconds. The line graph of the two lessons in Table 5.3 offers a comparison between the two lessons in relation to their progression and diversion.

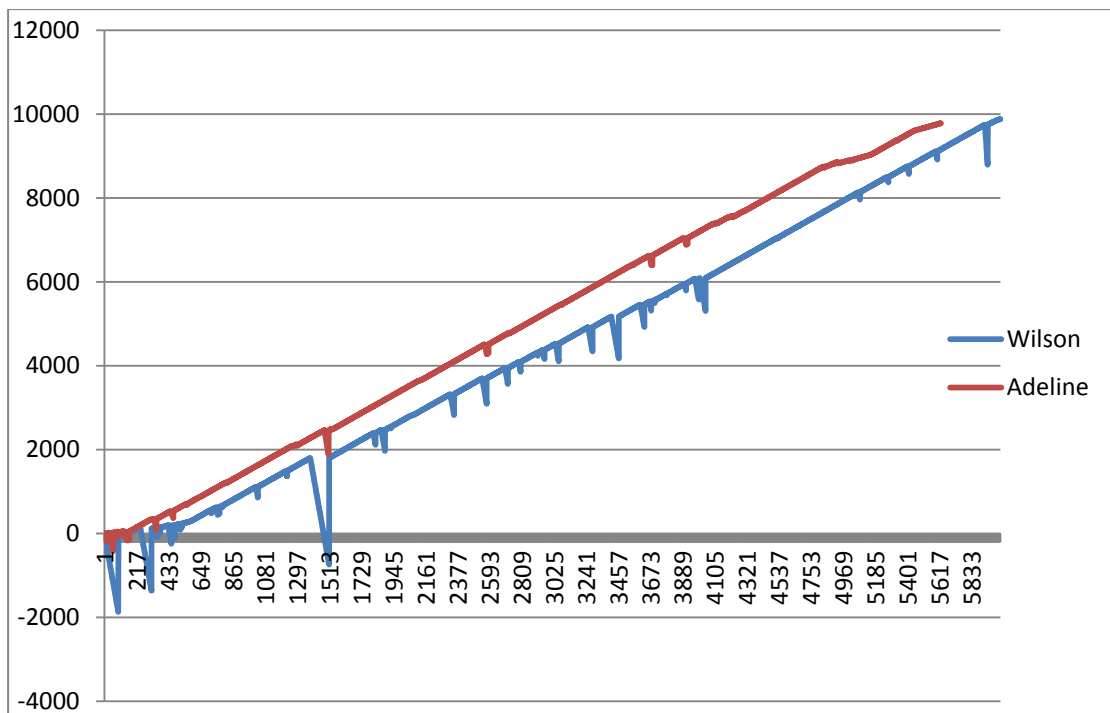


Table 5.3 Logogenesis of the Lessons

From Table 5.3, it is apparent that Wilson's lesson consists multiple incidences of Lesson Diversion, represented graphically by the dips. The regular occurrences of Lesson Diversion in Wilson's lesson, some of them lasting for quite a while, detract the lesson's progress. They also deter the lesson from reaching the peak that Adeline's lesson achieves. This is despite Adeline conducting her lesson over a shorter time of about 90 minutes (5628 seconds) as compared to about 100 (6035 seconds) minutes in Wilson's lesson, as mentioned in Section 5.1.2.

The sharpest dip for Wilson occurs between 1386th-1512th seconds or about 23 minutes into the lesson. This Lesson Diversion lasts for about 2 minutes. This is after Wilson issues the instructions for the students to work from the passage in their Past Year Examinations Compilation Pack. He realises that a number of students did not bring the pack and were not on task. For 59 seconds, he launches into a Discourse of Discipline, and berates the students to "use common sense" and share the compilation packs with one another. To the student who asks him for an extra set of notes, he retorts, "Do I have extra text? That is a very good question. And the answer is no". He then organises the students to share the passage with one another. After which, he engages in 32 seconds of Discourse on Rapport-Building, probably an attempt to compensate for the strong tone adopted earlier. He thanks the students who shared their notes, saying, "Although your friends did not thank you, I shall thank you". He then breaks into a sing-song rhyme with a serious message. His rhyming couplet goes, "Now end of the year; almost prelims is here. If you don't fear; then oh dear, oh dear". However, immediately after this, Wilson

spends another 36 seconds on Discourse on Discipline as he spots a student who is not on task and reprimands him. He warns, “Everything else is more important is it? Don’t feel too confident, my dear friend; if you pass, you can do better. If you can just pass, you can do worse”. After that, the lesson progresses on as he moves into Discourse on Personal Consultation to answer questions from individual students.

The sharpest dip for Adeline occurs between 1481st-1509th and 1527th-1539th seconds or about 24 minutes into the lesson. The 28 seconds of Lesson Diversion occurs not because of Discourse on Discipline but of Discourse on Rapport-Building. She shares an anecdote of her son’s struggle to learn the apostrophe. She explains that because her son’s name, Lucius, ends with an ‘S’, he writes “L, U, C, I, U, S, apostrophe S”. She usually corrects him and puts “L, U, C, I, U, S, apostrophe”. However, her son “has not quite adjusted to the idea” and writes “my dog or my cat... without the S”. Adeline then promptly relates this to the students in a Discourse on Language, lasting 20 seconds, by asking them if they have learnt it. She succinctly summarises the grammatical rule, “When the word ends with S, add an apostrophe without the S; when the word ends without S, add an apostrophe S”. With that, she concludes the Discourse on Language by directing this to the weaker students in the class saying, “Those of you who have problems, bear in mind”. Adeline then reverts to her anecdote in a Discourse on Rapport-Building, lasting 12 seconds. She muses, “I wonder at what age he will come to learn about apostrophe”. The students recognises the light-hearted tone in the Discourse on Rapport-Building and one of them responds, “Maybe today”, to the laughter of the entire class. Adeline laughs with them, acknowledges the response and concludes, “I taught him

that. He has not internalised it yet. Anyway, he is struggling”. She then moves quickly back to the Lesson Progress, telling the students, “Never mind, come back here. Now I want you to do this”. Following that, she launches a Discourse on Instructions for the next activity.

As observed in the two examples, while all Lesson Diversion detracts from the focus of the lesson, they are not all disciplinary in nature. Discourse on Discipline reinforces the authority of the teacher in exercising control and discipline in the classroom. On the other hand, Discourse on Rapport-Building is used by the teacher to reduce interpersonal distance and mitigate the hierarchical relationship.

In total, Adeline spends about 6 minutes (6.16%) on Discourse on Rapport-Building and only under 1 minute (0.89%) on Discourse on Discipline. In contrast, Wilson spends more than 6 minutes (6.00%) on Discourse on Discipline and under 6 minutes (5.79%) on Discourse on Rapport-Building. The amount of time devoted to each categories of the Lesson Microgenre in both Wilson’s and Adeline’s lesson signals their relative foci in the lesson. An analysis of the constituent Lesson Microgenres in each of these categories also comprehensively informs the individual pedagogical styles and strategies which Adeline and Wilson adopt in their lessons.

5.2.2 Lesson Microgenres

The 25 Lesson Microgenres in the General Paper classroom are introduced in Chapter 3 and listed in Figure 3.8. The Lesson Microgenres are discussed in relation to Adeline and Wilson’s lesson in this section and represented in Table 5.4.

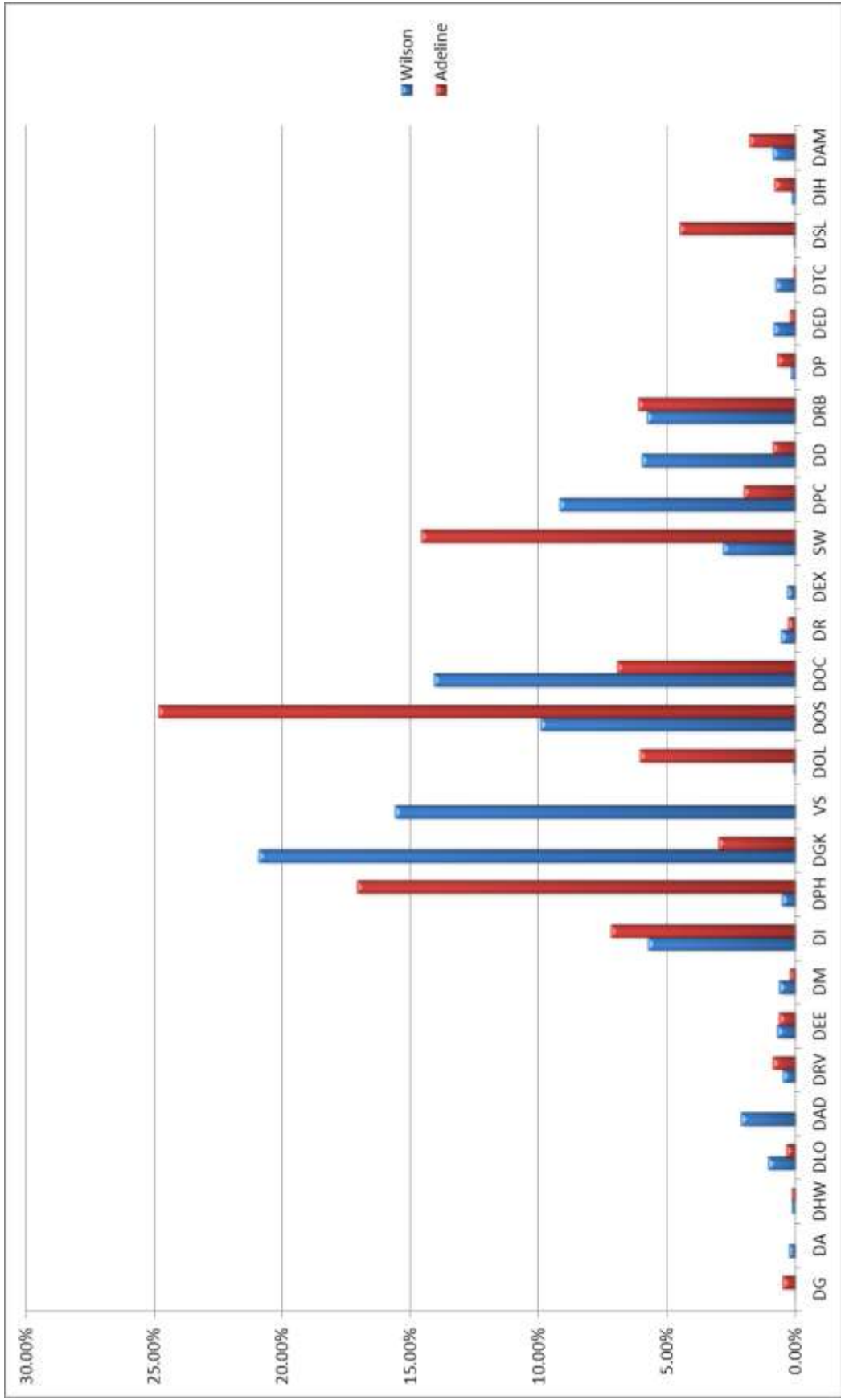


Table 5.4 Lesson Microgenres

5.2.2.1 Lesson Initiation

Discourse on Greetings refers to formalities such as “OK, good day to you” by Wilson and adjacency pairs such as “OK, Morning everyone” by Adeline to elicit the response of “Good Morning” from the students. Discourse on Greetings is located both in Lesson Initiation and Lesson Closure. Beyond phatic communion realising mainly interpersonal meanings, Discourse on Greetings can be used as a marker of structure to bring a sense of formality into the lesson. This is because Discourse on Greetings is often used professionally as a signal for the official beginning and ending of the lesson. This is evident in Adeline’s lesson where she spends 29 seconds (0.52%) on Discourse on Greetings. This includes her greetings and her waiting for the students’ response at the beginning and the end of her lesson. In contrast, Wilson’s devotes only 1 second (0.02%) on Discourse on Greetings. He does it, rather dismissively, as the final clause in his lesson.

Discourse on Attendance refers to comments such as, “Now, let’s wait for some of you to turn up” by Wilson. This occurs when the teacher checks if specific students are present in class. This is pertinent in the lesson’s context because it is the last lesson before the Preliminary Examinations and some students have stopped attending classes in anticipation of the study break. The focus on Discourse on Attendance suggests the teacher’s emphasis on attendance. It is indicative of the overt control exercised by the teacher. Wilson spends 15 seconds (0.25%) on Discourse on Attendance. There is no Discourse on Attendance in Adeline’s lesson.

Discourse on Homework Check refers to discussion relating to work set in the previous lesson. For instance, in Wilson’s questions, “I asked you to read the text.

Did you read the text?” and in Adeline’s questions, “You were supposed to have gone back to do your research right? You have not done it huh?” Discourse on Homework Check also reflects the extent of control and monitoring by the teachers. Wilson spends 7 seconds (0.13%) and Adeline about 9 seconds (0.16%) on Discourse on Homework Check.

Discourse on Lesson Objectives orientates the students to the Skills & Content Topic of the lesson. Wilson spends about 63 seconds (1.06%) and Adeline about 21 seconds (0.36%) on Discourse on Lesson Objectives. Wilson spends more time on Discourse on Lesson Objectives because he introduces a new tool, in the form of a template to aid in the answering of the Application Question. Interestingly, introducing new knowledge in the Lesson Genre of a Review Lesson is unusual as the focus is usually on revising previously learnt knowledge and skills.

Discourse on Lesson Objectives is especially pertinent in the General Paper classroom as teachers may not adhere strictly to the Scheme of Work and may choose to focus on different Skills & Content Topics based on the needs of the class. As discussed in Chapter 3, this is also due to the accretive learning in General Paper, where the different Skills & Content Topics are taught recursively and phased in at selected stages of the lesson and curriculum. For instance, they may move from the Skills & Content Topic of Essay Structure to the Skills & Content Topic of Literary Language in the next lesson. Hence, Wilson explains in his Discourse on Lesson Objectives, “This time I am targeting AQ (Application Question) because I think AQ is the place where we can score more marks”. Likewise, Adeline states explicitly in her Discourse on Lesson Objectives, “The focus of today’s lesson is on AQ”.

In a lesson, there is usually one primary Skills & Content Topic but can also have other secondary Skills & Content Topics that are taught. For instance, the Lesson Microgenre of Discourse on Language contributes to the Skills & Content Topic of Vocabulary Knowledge and the Lesson Microgenre of Discourse on General Knowledge contributes the Skills & Content Topic of Content Knowledge. While the primary focus of the lesson is the Skills & Content Topic of Application Question Structure, the other Skills & Content Topics are also present in some forms. As observed in the two lessons, the teachers usually do not signal these Skills & Content Topics through the Discourse on Lesson Objectives. It might be useful to explore in further research if clear sign-posting of the Skills & Content Topics through the use of Discourse on Lesson Objectives can draw the students' attention and organise their learning more effectively.

Discourse on Administration refers to administrative matters unrelated to teaching and learning. About 2 minutes (2.11%) is spent in Wilson's lesson on Discourse on Administration. This is because Wilson's lesson is the first lesson of the day. During that period, all schools were issued an advisory for temperature monitoring of students due to the Swine Flu epidemic. As such, Wilson spent time on temperature-taking. No Discourse on Administration is noted for Adeline as her class is not the first lesson of the day.

In Discourse on Revision, the teacher makes references to what has been taught in the previous lesson to frame the focus for the day's lesson. For instance, Wilson explains, "During the last few weeks... We look back on common test papers". Likewise, Adeline reminds the students, "Remember last week I gave you

Set 1... I did walk through the sample with you, did I?" Wilson spends 30 seconds (0.5%) and Adeline spends slightly more time at 49 seconds (0.87%) on Discourse on Revision. Both teachers mention the lesson materials as the point of reference to what has been previously taught. In light of the Curriculum Hypergenre, it might be useful to explore foregrounding the Skills & Content Topics, instead of the materials, in the Discourse on Revision. This makes explicit the linkages between the topics and contextualises the lesson for students. It also helps them recognise the interconnectivity and interdependency between seemingly disparate lessons.

Discourse on Explanation of Event is not a typical Lesson Microgenre for General Paper. Discourse on Explanation of Event relates to the research project or a special event of similar nature. In the lessons investigated, the Discourse on Explanation of Event provides information to the students about this study. Wilson spends 43 seconds (0.71%) and Adeline spends 36 seconds (0.64%) on this. Wilson instructs the students to be as natural as possible. He explains, "First thing, this is for research purpose. So we don't have to act and make sure that this is a perfect class". Adeline reminds the students that they have the option to leave the class and see her for a make-up session if they do not wish to participate in the study. She emphasises, "I am serious. If you are uncomfortable you could just step out".

Discourse on Motivation is when the teacher inspires and encourages the students in their studies. Wilson spends more than 4 minutes (0.65%) and Adeline spends about 2 minutes (0.23%) on Discourse on Motivation. Discourse on Motivation can occur in the category of Lesson Initiation. This is observed when Wilson, after explaining in the Discourse on Explanation of Event that he is helping a

former colleague who is doing his doctorate, shifts into the Discourse on Motivation and encourages the students, “I am sure in future you also will be doing research and you will require someone else help. I hope you all will be doing research. That means you will either do masters paper or doctorate [sic]”. Discourse on Motivation can also occur in the category of Lesson Diversion, when it interrupts Lesson Progress, and is used to encourage the students in their learning of the Skills & Content Topic. For instance, Adeline exhorts, “The concepts are not unfamiliar right. Don’t let the language hinder your understanding. Deal with the concepts”.

5.2.2.2 Lesson Progress

Discourse on Instructions presents overt directions for the students in preparation for a specific lesson activity. Wilson devotes almost 6 minutes (5.74%) and Adeline spends almost 7 minutes (7.20%) on Discourse on Instructions. Longer time spent on Discourse on Instructions suggests more sign-postings and instructions provided to structure the lesson activities. Examples of Discourse on Instructions are when Adeline issues the instruction, “You got your 08 compilation. I want you to turn to the VJC page”. In doing that, she signals that the passage is the main text for her lesson. Wilson, when introducing the template to organise their Application Question response, articulates a more procedural instruction and interjects with the rationale for his directives. He explains, “First, what we will do is that we will take out a piece of paper, shall we? And we will draw this template on that piece of paper. I could have printed it but I want you to write it down. Draw it down so that you have some ideas what you are doing”. Coupling instructions with explanations,

instead of using a direct command, tempers the authority that Wilson asserts as a teacher. The explanation allows for the students to understand the pedagogic intent behind his instruction.

Discourse on Philosophy and Discourse on General Knowledge are related to the Skills & Content Topic of Content Knowledge. However, Discourse on Philosophy also contributes significantly to the Skills & Content Topic of Higher Order Thinking. Discourse on Philosophy is discussion on ideas and concepts. They are usually open-ended questions that provoke thought and challenge understanding rather than seek a correct response. For instance, Adeline asks, “What does being successful mean?” Through that, she elucidates from her students the varied and competing definitions of success. Wilson shies from using Discourse on Philosophy in his lesson. Nevertheless, an instance is in his response to a student’s criticism of the school’s effort to monitor Swine Flu’s epidemic. He explains, “Whenever crisis or situations like these happen, we try to do our best. That’s what we can do. We can’t do more than our best. Can we?” However, his use of a rhetorical question neither invites nor permits further discussion on the issue.

Discourse on General Knowledge is discussions and close-ended questions on general knowledge and current affairs. Usually, an ideal answer is already in the mind of the teacher. Examples of Discourse on General Knowledge are in Wilson’s question, “What is the positive aspect of hydroponic technology?” and in Adeline’s question, “Can anybody tell me what is Olympus?” While useful to deliver content knowledge in the students, an over-use of Discourse on General Knowledge can possibly alienate those who do not have the ‘right’ answer. These can be students

from less privileged socio-economic background that may not have the extent of exposure and experience that their more privileged peers may possess (see, for example, Christie, 2002 and O'Halloran, 1996, 2004a). On the other hand, Discourse on Philosophy promotes engagement and builds higher order thinking skills. Hence, a good complementary use of Discourse on General Knowledge with Discourse on Philosophy can possibly empower weaker student with the necessary knowledge and ways of critical thinking to close the gap. Adeline spends about 16 minutes (17.09%) as compared to only 33 seconds (0.55%) by Wilson on Discourse on Philosophy. On the other hand, Wilson spends about 21 minutes (20.93%) as compared to under 3 minutes (3.00%) by Adeline on Discourse on General Knowledge.

Video-Screening is differentiated from the other Lesson Microgenres in that the discourse is via a video presentation displayed on the screen. The use of video in the classroom is not a recent phenomenon although it has been popularised in the last decade because of the relative ease of access and use. The primary reason for Video-Screening is to contribute to the Skills & Content Topic of Content Knowledge. The Video-Screening often introduces new knowledge and present information on particular topics. The secondary reason, teachers cite for using media clips in the classroom, is to interest and engage the 'digital natives' (Tapscott, 2008) "on the grounds of their experience" (Kress, 2003: 175), as discussed in Chapter 1.

While students usually pay attention to a video presentation and thus are engaged interpersonally, the extent which they understand the ideational content and draw relevance to the scope of the lesson remains to be investigated. Ideally, for Video-Screening to deliver the Skills & Content Topic of Content Knowledge

effectively, the content knowledge espoused in the video presentation should be made explicitly relevant to the context of the lesson by the teacher. This is usually done through a follow-up discussion on the video which relates the information to the Skills & Content Topic and highlights key issues from the presentation.

In the two lessons observed, only Wilson uses videos in his lesson. Video-Screening takes up almost 16 minutes (15.62%) and is ranked second highest amongst all the Lesson Microgenre in his class. Wilson shows three videos consecutively. He introduces the first video almost as a form of entertainment for the students. He says, “Maybe we do this, do not [sic] serious stuff, since it has been almost one hour... I have something for you to watch”. The unintended reference to Video-Screening as “not serious stuff” is puzzling, given the long time spent on Video-Screening in his lesson. The purpose of the Video-Screening is explained later. He states, “I think that will help you with the solutions and ideas...during exams situations you have to tap your content knowledge”. For Wilson, Video-Screening contributes to the Skills & Content Topic of Content Knowledge.

Wilson also refers to the video in his subsequent discussion on two occasions. The first is when he asks, “Did watching the few video clips help us to understand that?” and the second is when he mentions, “incentive meaning that as we saw in the short video”. However, the remarks are cursory and there is no serious attempt to discuss the information presented in the video, despite the significant time investment. His subsequent trivialising reference to the videos also undermines the pedagogical value of the Video-Screening. This is made when a student asks for his

permission to visit the toilet. Wilson exclaims, “Actually you should have gone when we are watching the video”.

Discourse on Language is the explicit teaching of grammar and the meaning of words. Discourse on Language contributes to the Skills & Content Topics of Vocabulary Knowledge and Grammar Competency. Examples of Discourse on Language are when Wilson says, “Now, if it is French we don’t say the T” as well as when Adeline asks, “What’s anxiety?” and explains “An anxious person is a worried person”. Adeline spends almost 6 minutes (6.06%) on Discourse on Language, which contrasts with Wilson’s 5 seconds (0.08%).

Discourse on Skills is the explicit teaching of skills. This contributes to the primary Skills & Content Topic of Application Question Structure in this lesson. An instance is when Wilson clarifies, “Now, remember for AQ (Application Question), we don’t have to write a thesis on the passage. Just two or three or four good points. That’s it”. Likewise, Adeline reminds, “Remember that. That is rule number one. The other thing I want to highlight is when you refer to the main ideas selected; always make it a point to make line references”. Adeline’s focus on Discourse on Skills is indicated by the almost 24 minutes (24.84%) spent as compared to Wilson’s 10 minutes (9.91%).

Discourse on Content is discussion specific to the content of the passage. This contributes to the Skills & Content Topics of Identification of Ideas from Text and Evaluation of Ideas from Text. Wilson exemplifies this when he says, “So we are to explore the idea... about hunger or displacement. So did we find them in the text?”

Similarly, Adeline notes, “Point one. If anyone today can attract young people’s attention: Celebrity”. Discourse on Content differs from Discourse on General Knowledge because in Discourse on Content, the focus is on the passage in the text and the aim is teaching students to identify and evaluate ideas from the passage. Wilson’s focus on Discourse on Content is indicated by the 14 minutes (14.10%) as compared to Adeline’s under 7 minutes (6.93%) spent on this.

Both Adeline and Wilson do expound on the Skills & Content Topic of Application Question Structure through the significant time spent in Discourse on Skills. This suggests relevance and focus despite the range of secondary Skills & Content Topics that are also included in the lesson. However, the comparatively shorter time spent by Wilson is attributed to the considerable attention he gives to the Skills & Content Topic of Content Knowledge, through the Lesson Microgenre of Discourse on General Knowledge, Video-Screening and Discourse on Content. Altogether, these Lesson Microgenres take up almost 51 minutes (50.65%) or more than half the lesson time. Arguably, more focus can be placed on Discourse on Skills as this is the primary Skills & Content Topic of the lesson. Both Wilson and Adeline spend time on Discourse on Content, with Wilson spending double the time of Adeline. On the other hand, Adeline brings in the Skills & Content Topics of Vocabulary Knowledge and Grammar Competency, as opposed to an almost absence of these topics in Wilson’s lesson.

Discourse on Reading is when an extended part of the passage is read aloud by the teacher or students. Both Wilson and Adeline spend very little time on Discourse on Reading. Wilson spends under 34 seconds (0.56%) and Adeline spends

under 17 seconds (0.30%) on Discourse on Reading. Discourse on Reading may feature more in the English classes at the Primary and Secondary Level as choral reading. Having students read passages aloud is a pedagogical strategy employed to help them develop fluency and prepare them for the Oral component of the Examinations. Since General Paper is examined only in the written mode, it is unsurprising that Discourse on Reading is given lower emphasis in both lessons.

Interestingly, despite the lesson being the final class before the Preliminary Examinations, Discourse on Examinations is used only about 20 seconds (0.33%) by Wilson and none at all for Adeline. Discourse on Examinations is a direct reference to the examinations, such as in Wilson's admonition, "During your A –Levels test, you won't have 15 minutes to think". Even here, the Discourse on Examinations is somewhat enmeshed in Discourse on Discipline as he reminds the students to stay focus on the task and work on it quickly. The lack of reference to the examinations might be due to the Preliminary Examinations being perceived not to be as important as the ultimate Singapore-Cambridge General Certificate of Education (Advanced Level) Examinations. Both teachers did not appear particularly anxious or offered much examination-specific advice in this lesson, as they might be, in the lesson prior to the Singapore-Cambridge General Certificate of Education (Advanced Level) Examinations.

Student Work occurs when the teacher sets a task for the students to perform either individually or in groups. Tasks include answering the comprehension questions or working on exercises based on their preceding discussion. Adeline spends almost 15 minutes (14.61%) whereas Wilson spends less time at under 3

minutes (2.82%) in Student Work. The time in Student Work is coded when there is no Discourse on Personal Consultation. As such, the total time spent in Student Work must include also the time spent in Discourse on Personal Consultation. Discourse on Personal Consultation is when a student asks a question to the teacher during Student Work. The teacher answers the student as the rest of the class continues with their work. For instance, in Wilson's class, a student expressed his uncertainty with what is expected of him and Wilson replies, "You don't know what to write. So what are you supposed to assess? What did the writer say?" Adeline spends under 2 minutes (2.01%) and Wilson spends more than 9 minutes (9.21%) in Discourse on Personal Consultation. As such, the total time where students engage in a practice activity in both lessons is about 17 minutes (16.62%) for Adeline and less at about 12 minutes (12.03%) for Wilson.

5.2.2.3 Lesson Diversion

Discourse on Discipline reinforces the teacher's authority as certain rules and norms in the class are enforced. As mentioned in Section 5.2.1, Wilson uses significantly more Discourse on Discipline, almost seven times that of Adeline. Discourse on Discipline can occur when the teacher chides the class or reprimands a student. However, this form of Discourse on Discipline is seldom observed in the General Paper lesson as the students are adolescents and are more mature. As such, the teacher tends to be more mindful of exercising explicit power and asserting their status differentiation overtly. The management of the interpersonal dynamics

through the combination of semiotic choices is described in this study as structured informality. This is discussed further in Chapter 6.

Some of the strategies employed by Wilson and Adeline during Discourse on Discipline include the use of humour, not singling specific students for admonition publicly and mitigating the intensity and severity of the regulation through multimodal selections. For example, Wilson uses sarcasm and teases, “Lucas. Haven’t you seen a camera before? Please pay attention”. Likewise, when Adeline wishes to rebuke a few students who have not done their homework, she addresses the class collectively and couches the misdemeanour in general terms. She obfuscates, “And if you haven’t done it, something is very wrong OK. You have been given a problem. You have to go and find the solution”. In the two lessons investigated, Discourse on Discipline, despite being higher in Wilson’s lesson, is relatively infrequent when compared to classes at the Secondary School level. It is also usually brief when it does occur. There is always a swift restoration to a sense of normalcy. It is also interesting to note that Discourse on Discipline is regularly followed by Discourse on Rapport-Building. While it is a stark contrast to the high power in Discourse on Discipline, Discourse on Rapport-Building quickly restores the status quo in the relationships, reduces the tension and alleviates any awkwardness so that the lesson can continue.

As mentioned in Section 5.2.1, Discourse on Rapport-Building builds solidarity and mitigates the hierarchical relationship between teacher and students. It can occur in Lesson Initiation as well. Typically, teachers will relate certain anecdotes about their personal lives. The field of discourse shifts from classroom business and

subject matters to personal business. As mentioned, Wilson and Adeline spend about the same amount of time on Discourse on Rapport-Building. An instance is when Wilson volunteers the information, “I like African music; it’s good” after the Video-Screening set to African music. Adeline uses Discourse on Rapport-Building primarily to share stories and jokes with her students. For instance, when a student asks her how old she was. She replied, “I am old enough to start getting fat and start getting wrinkles”. Evidently from their banter, Adeline enjoys a strong rapport and is popular with her students. While the Discourse on Rapport-Building is categorised under Lesson Diversion, a moderate use of Discourse on Rapport-Building is useful in establishing a strong rapport with the students and in promoting engagement with the lesson. Discourse on Motivation, discussed in Section 5.2.2.1, and Discourse on Rapport-Building contribute to the building of rapport and solidarity between the teacher and students, making the exercise of power and assertion of authority less visible.

Discourse on Permission is the granting of permission to students’ requests. Often, it is a request to visit the toilet. As Discourse on Permission foregrounds the status differentiation between the teacher and students, strategies are used to maintain rapport and moderate the exercise of authority. These strategies include the use of politeness markers such as ‘please’ and humour, often as lighthearted sarcasm. For instance, when asked for permission to visit the toilet, Wilson retorts, “Go toilet? The most important question. Yes please”. Wilson spends about 10 seconds (0.17%) and Adeline spends almost 40 seconds (0.71%) on Discourse on Permission.

Discourse on Time Check serves a regulative function of reminding the students the time left for a particular activity before moving on to the next stage of the lesson. It is also sometimes a self-reminder for the teacher to proceed to the next stage of the lesson, usually towards the Lesson Closure. The role of time in the classroom is discussed in Chapter 2. Discourse on Time Check is used to regulate the activity in the lesson. For example, Wilson urges the students during Student Work, “Now we have five more minutes left. Even if it is wrong, you think first”. Similarly, Adeline announces before the Student Work, “I give you a quick three minutes”. Wilson spends about 47 seconds (0.78%) and Adeline spends only 5 seconds (0.09%) on Discourse on Time Check. Hence, Wilson makes more explicit references to time to order the classroom activities and through it exhibits greater external control. On the other hand, while Adeline makes less overt references to time, she structures her lesson in an organised manner, as discussed later and displayed in Figure 5.4B. This suggests strong implicit control and a good sense of the development of the lesson, without the need to foreground time.

Discourse on External Distraction refers to external distractions that might occur in the course of a lesson. They are unplanned and may come in the form of other people knocking on the door of the classroom, interrupting the lesson. This also includes incidents such as Adeline’s mobile phone ringing in the midst of her Discourse on Skills and her knocking into the table microphone accidentally.

Adeline reacts to the Discourse on External Distraction with a calm and confidence commensurate to her status as an experienced teacher. When her mobile phone rings suddenly during lesson, she deals with the awkwardness with

self-depreciating humour. She says drily, “Teacher picks up the handphone. Turn off the sound. Waste three seconds of the students’ time. And it goes away”. The students laugh and the episode is promptly over as Adeline continues with the lesson. Similarly, when Adeline accidentally knocks into the table microphone, she quickly acknowledges her clumsiness with “Opps! That’s the mic” and replaces the microphone. She concludes, “That’s it” and continues with the lesson.

Wilson responds differently to distractions. When a loud feedback was produced by the microphone, Wilson asks a series of questions to the students, “What happened? Got echo? Maybe it is too loud is it?” When a student suggests that it may be due to the recording, he dismisses the answer and asserts his authority with a rhetorical question, “Now that was recording is not logical. How would recording produce echo?” Ironically, the fact is that the echo was really due to the recording systems.

Wilson spends about 52 seconds (0.86%) on Discourse on External Distraction as compared to Adeline’s under 12 seconds (0.21%). The contrast between Adeline’s and Wilson’s approaches to deal with external distraction is interesting and invites questions such as whether the difference is caused by their relative experience level. However, a more extensive study is needed to investigate this conjecture.

5.2.2.4 Lesson Closure

Discourse on the Summary of Learning Points is a summation of the key learning points of the lesson. Pedagogically, it helps the students to recap the main ideas of

the lesson. Discourse on Summary of Lesson can be highly organised. For instance, when key learning points of the lessons are summarised, such as in Adeline's lesson. It can also be less structured, such as in Wilson's summative comments on the lesson. Wilson briefly concludes, "And actually what we discussed today is enough right? We looked at it from various angles but you have to pick only three out of it". The "various angles" is not explicated to the students again. On the other hand, Adeline uses questioning to get students to recall the key points that have been discussed. This engages the students as the onus is on them to collectively reflect on the ideas from the discussion and identify the main points from there. She reformulates the feedback from the students in the appropriate terminology by writing them down on the whiteboard. She humorously draws attention to her resemiotization by announcing, to the laughter of the class, "OK, I am not quite writing what you say".

Wilson spends only about 4 seconds (0.07%) on Discourse on Summary of Lesson whereas Adeline spends a much longer time at 4 minutes (4.53%). This signals the importance of Discourse on Summary of Lesson in her lesson. Wilson's brief time spent on Discourse on Summary of Lesson indicates that his summary of the lesson is probably inadequate. The lack of a proper conclusion for the lesson has implications on effective teaching and learning that requires further investigation beyond the scope of this study.

Discourse on Issuing of Homework is the instructions on homework and follow-up actions required from the class. While this is present in both lessons, they differ in terms of specificity and overt commitment from the teacher to provide

feedback on the work. Perhaps in providing students greater autonomy and independence, Wilson appears perfunctory in the issuing of homework and does not express any commitment to provide feedback on their work. This may be because that there are no more formal lessons until after the Preliminary Examinations. Rather than issuing a typical instruction, Wilson suggests, “When you go home today, I think, why don’t you try making that table out of other AQ (Application Question) question and see whether that works for you”. Given that there is no commitment on the part of the teacher to check on the homework, it is uncertain how many students will actually do the homework. His attitude is reflected in spending only about 9 seconds (0.15%) on Discourse on Issuing of Homework.

In contrast, Adeline issues very explicit instructions on what she expects the students to do as their homework. She spends almost 46 seconds (0.82%) on Discourse on Issuing of Homework. She lists her expectations specifically and relates them back to what has been covered in the lesson. She explains, “Based on our last three minute discussion, try and write one portion of the AQ (Application Question). Get a strategic quote from the passage, talk about your response to the writer’s views, provide your examples, explain how your examples help you answer the question. Will it worsen or will it not worsen? Evaluate it. Give me reasons for your evaluation. Six steps for these points which we just discussed”. Adeline also articulates her commitment to provide feedback on the students’ work. She declares, “As long as if you do write it, I will look at it”. Nonetheless, her firm approach is moderated with the conditional clause, “as long as if you do write it”. This offers a leeway, given that this is the last lesson, for students who do not wish

to do the homework. In this, Adeline moderates the exercise of power by managing the interpersonal dynamics in an otherwise potentially highly authoritative event.

Discourse on Arrangement of Next Meeting is the administrative arrangement for subsequent classes. As mentioned, the two lessons investigated are the final lesson before the Preliminary Examinations commences in the following week. The week after the lesson has been demarcated as the Study Break for the students where there are no formal lessons. Students may choose to come to school and arrange for personal consultation with the teachers. Hence, the Discourse on Arrangement of Next Meeting in the two lessons involves the teachers expressing commitments to be around for the students during the Study Break. For instance, Wilson explains, “Practically the whole of the week, teachers are free and if you need help you are supposed to look for us. So this is the last lesson before our prelims, but you can still look for me”. Wilson informs the students that the responsibility is on them to make arrangements to meet him. Wilson also reminds them to let him “know in advance”. He cites an example of how he had to turn down a student who “messed me, I think, at 8 o’clock and asked if I have time”. He concludes, “But I have other plans already”. Similarly, Adeline, after explaining that she will be away on certain dates, assures the students that she can meet them on specific days. She states, “Twelfth and thirteenth I am away on course. So Tuesday and Friday, I am available. OK, I am here. I will make myself to be here for as long as you need me to be. So do SMS⁹ me if you need to meet”. Both teachers spend approximately the same amount of time on Discourse on Arrangement of Next

⁹ SMS: short message service, sent from mobile phones

Meeting with Wilson spending about 1 minute (1.13%) and Adeline at slightly more than 1 minute (1.79%).

Finally, both lessons, due to their location in curriculum time, are Review Lessons. However, Wilson's lesson is an atypical Review Lesson in light that he introduces new curricular knowledge in the form of a template for answering the Application Question, which he revealed that he "devised last night". This is arguably a violation of the generic stages in the Review Lesson as typically a Review Lesson serves as revision and reinforcement to the skills and knowledge taught previously in the other lessons.

In introducing new curricular knowledge in a Review Lesson, Wilson upsets the order through the omission to revise what has been previously covered. In addition, given that this is the last lesson, in order for the new knowledge to be learnt, Wilson has to rush through the quasi curriculum stages of Introduction, Negotiation and Revision all within a single lesson. This is observed from his Lesson Microgenres and in the Discourse on Homework Check where he asks the students to revise & practise the template at home as a form of independent revision to what he has covered. Though the new knowledge might have been truly helpful, the productivity of doing all this in the span of one lesson is uncertain, especially, since this is done in place of the expected Lesson Genre of a Review Lesson where students are to revisit the knowledge learnt in preparation for the Preliminary Examinations. This is contrastively exemplified in Adeline's lesson.

5.2.3 Comparison of the Lesson Microgenres in Wilson and Adeline's Lesson

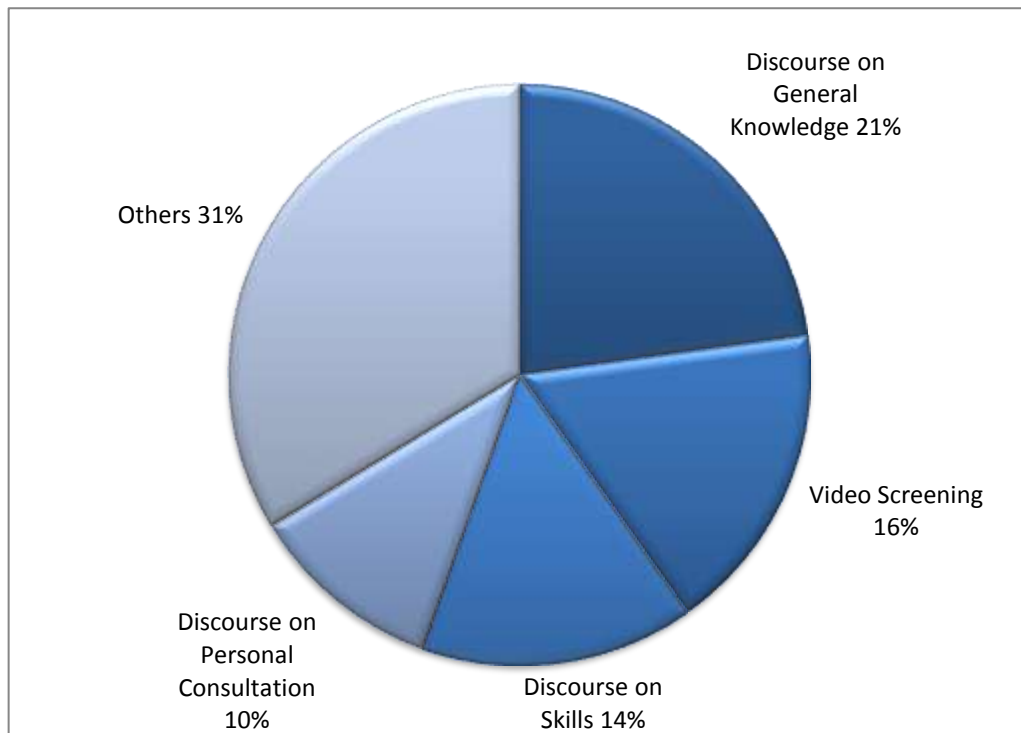


Figure 5.3A Top 5 Lesson Microgenre in Wilson's Lesson

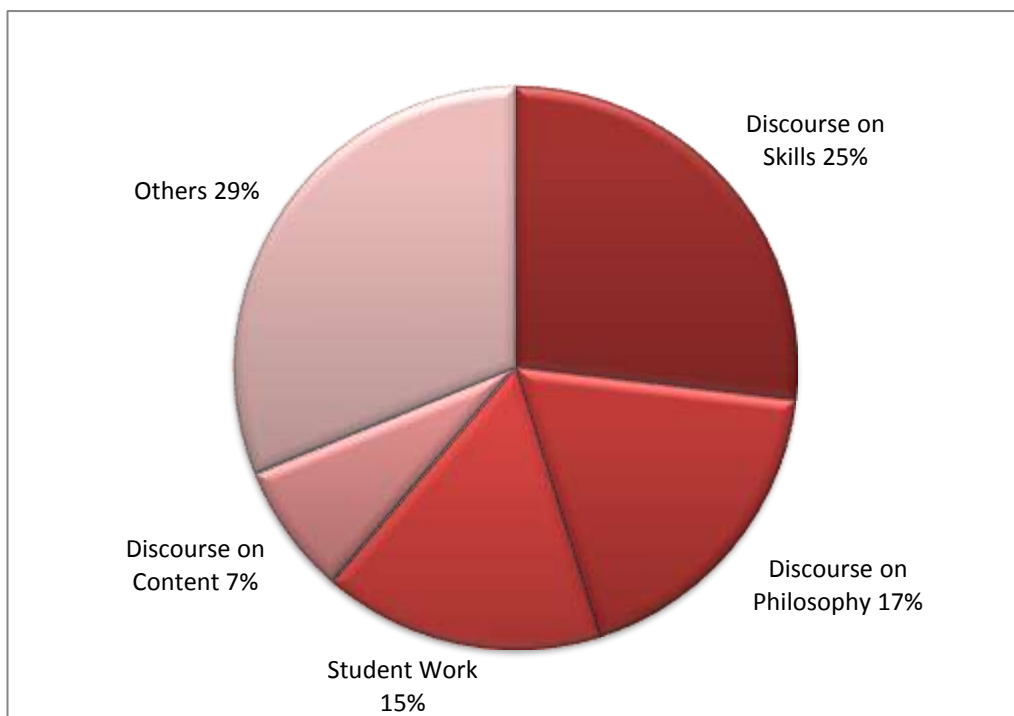


Figure 5.3B Top 5 Lesson Microgenre in Adeline's Lesson

Figure 5.3A-B shows the top 5 Lesson Microgenre in each lesson. The dominance of these Lesson Microgenres is reflective of the pedagogical styles and foci of the teachers in their lessons.

In Wilson's lesson, Discourse on General Knowledge takes up more than a fifth of the total lesson time. This is followed by Video-Screening and Discourse on Content. The dominance of Discourse on General Knowledge, Video-Screening and Discourse on Content indicates Wilson's focus on the Skills & Content Topic of Content Knowledge. Despite the espoused focus of the lesson being on the primary Skills & Content Topic of Application Structure, Discourse on Skills comes after the first three Lesson Microgenres, at about a tenth of the total lesson time.

The amount of time spent in Discourse on Personal Consultation also indicates a focus on practice and application of skills, specifically in dialoguing with individual students during Student Work. The significantly more time spent on Discourse on Personal Consultation than in Adeline's lesson may be due to Wilson's introduction of new knowledge in the lesson and as a result, students had many questions on how to apply the template proposed during Student Work.

In Adeline's lesson, Discourse on Skills takes up a quarter of the total lesson time. This indicates a focus on the primary Skills & Content Topic of the lesson on Application Question Structure. She also pays significant attention to the development of higher order thinking skills through Discourse on Philosophy, which is the second highest Lesson Microgenre. Discourse on Philosophy is valued in all subjects, especially in General Paper, as there is an emphasis on critical thinking and,

as discussed in Chapter 3, the production of critical thinkers is one of the Desired Outcomes of Education.

Considerable time is also spent on Student Work. This suggests an emphasis on practice and application of skills. Discourse on Instructions is featured significantly as well. Through Discourse on Instructions, a clear structure and organisation of the different activities in the lessons is evident in Adeline's lesson. Adeline's lesson focus seen through the Lesson Microgenres appears more aligned to the Skills & Content Topic focus of the lesson and the Desired Outcomes of Education espoused by the Ministry of Education, as introduced in Chapter 3. For instance, Inquiry Skills is fostered through Discourse on Philosophy and active experiential learning through Student Work.

As mentioned in Section 5.1.3, the Lesson Microgenre graph in Figure 5.4, generated through the *Cytoscape* program, features four aspects of the Lesson Microgenre.

Cytoscape is used to visualise the Lesson Microgenres in each lesson according to:

- 1) Categories of Lesson Microgenre: Different categories of Lesson Microgenre are represented by colour.

Yellow: Lesson Initiation; Green: Lesson Progress; Blue: Lesson Closure;

Orange: Lesson Diversion- Discourse on Rapport-Building and Discourse on

Motivation; Red: Lesson Diversion: Discourse on Discipline & Discourse on

Permission; Grey: Student Work; and Olive: Video-Screening.

- 2) Lesson Development: Lesson Microgenres as they unfold in sequence are represented through sequence in positioning. The first Lesson Microgenre is represented in the first row and subsequent rows from left to right. The next occurrence of the same Lesson Microgenre is represented as an arrow leading back to its first occurrence.
 - 3) Frequency of Occurrence: The larger the size of the node, the more frequent is the Lesson Microgenre selected.
 - 4) Interconnectivity: The arrows represent the interconnectivity of the Lesson Microgenres to one another.
- Grey: 1 occurrence; Black: 2 to 10 occurrences; Blue: 11-19 occurrences; and Red: 20 or more occurrences.

In terms of the logogenesis in the lesson, the layout of the Lesson Microgenres is in accordance to their first appearance. The colour of the Lesson Microgenres, according to their Category of Lesson Microgenre, offers insights into the nature of the two lessons. For instance, as displayed in Figure 5.4A, the long preamble in Wilson's lesson is represented in the top three rows with a total of fifteen Lesson Microgenres before the Lesson Microgenres in Lesson Progress (in green) appear. Discourse on Skills, which contributes to the primary Skills & Content Topic of Application Question Structure, is the 19th Lesson Microgenre to appear. The late entry into the Lesson Progress stage is consistent with the observation in Table 5.3 where Wilson's lesson has many diversions from the lesson progress. In addition, the unusual situating of Discourse on Arrangement for the Next Meeting, a

Lesson Microgenre typically in the category of Lesson Closure, in the early part of the lesson is observed.

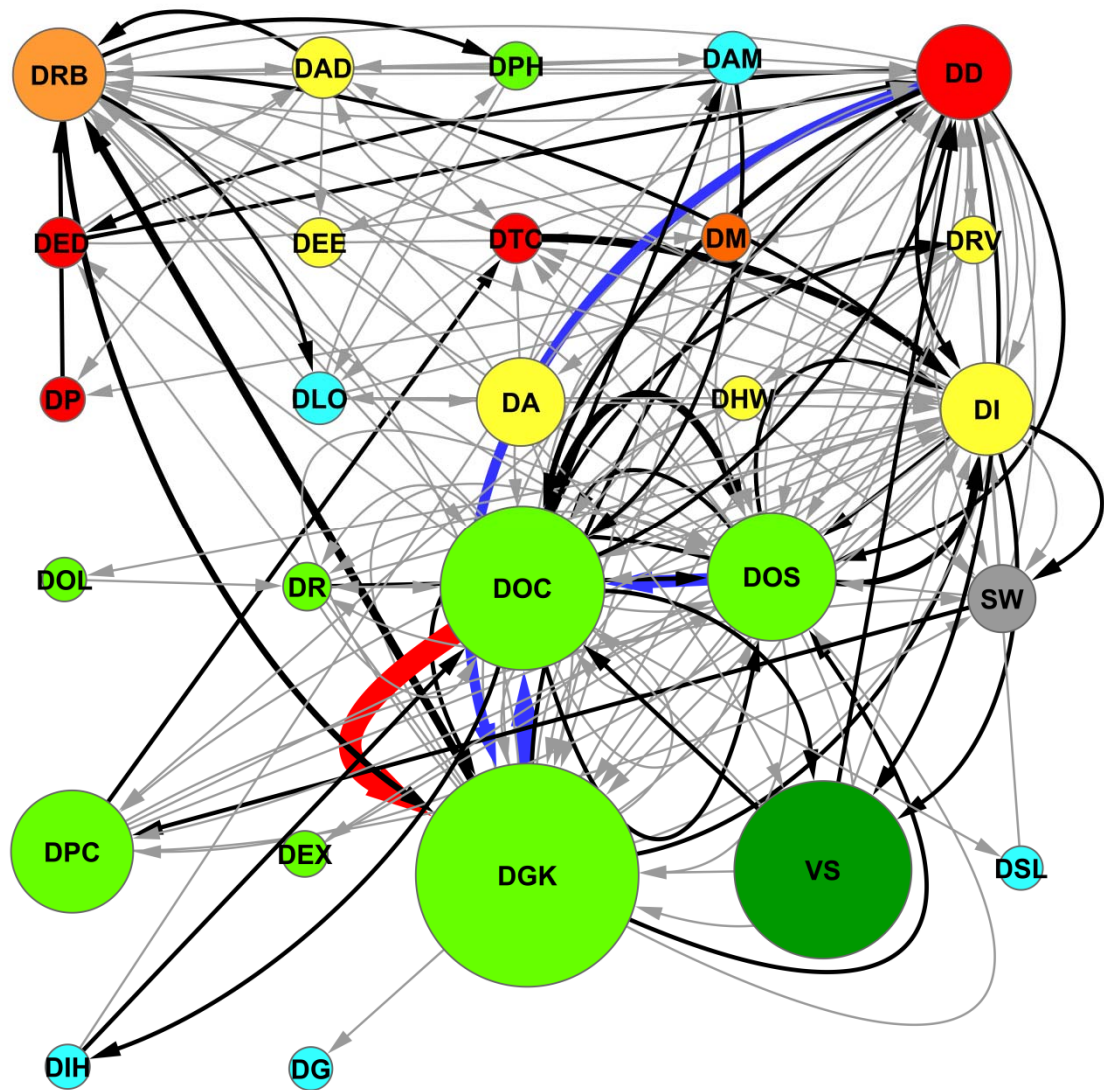


Figure 5.4A Wilson's Lesson Microgenre

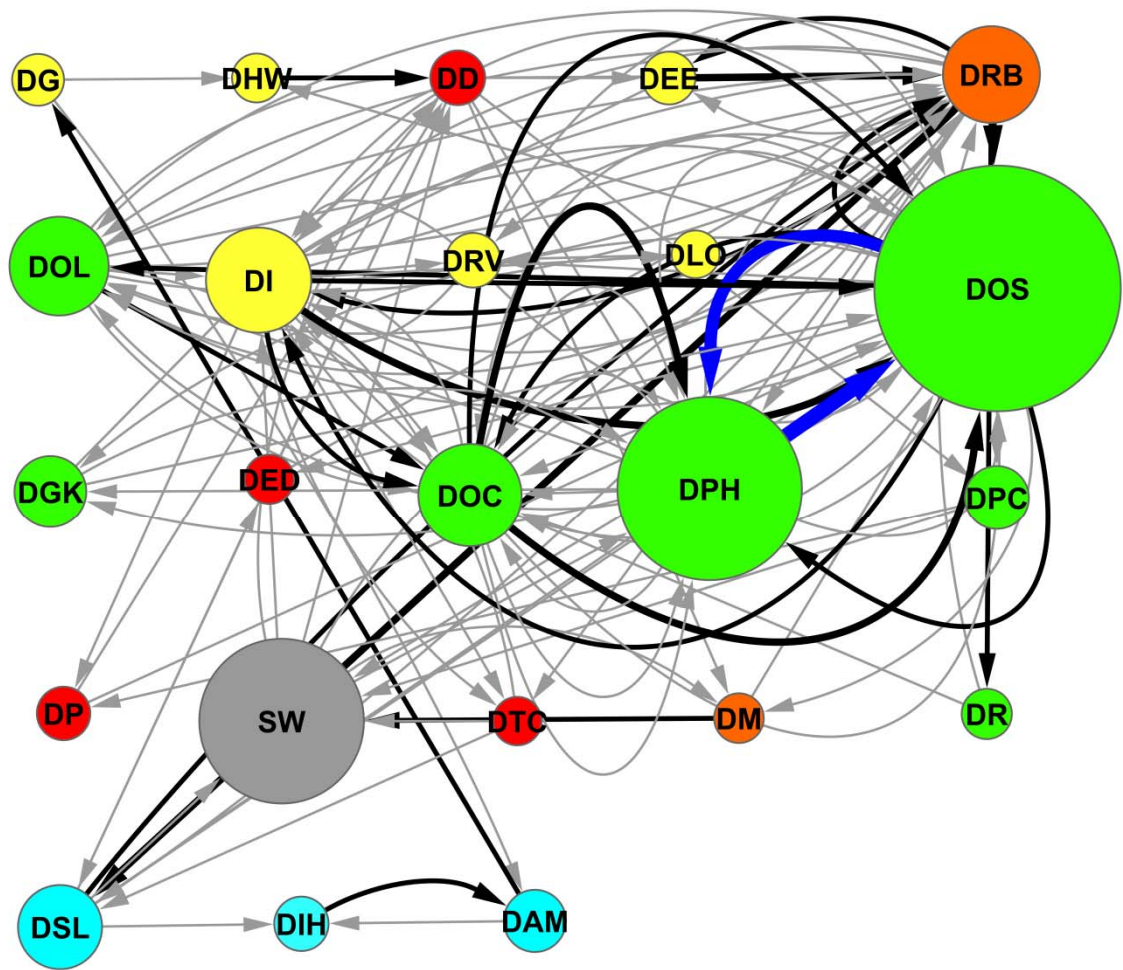


Figure 5.4B Adeline's Lesson Microgenre

Legend:

LI	Lesson Initiation	LP	Lesson Progress
DG	Discourse on Greetings	DI	Discourse on Instructions
DA	Discourse on Attendance	DPH	Discourse on Philosophy
DPH	Discourse on Philosophy	DGK	Discourse on General Knowledge
DGK	Discourse on General Knowledge	DR	Discourse on Reading
DEE	Discourse on Explanation of Events	DOL	Discourse on Language
DHW	Discourse on Homework Check	DOS	Discourse on Skills
DI	Discourse on Instructions	DOC	Discourse on Contents
DLO	Discourse on Lesson Objectives	DRV	Discourse on Revision
DM	Discourse on Motivation	DEX	Discourse on Exams
DRV	Discourse on Revision of Previous Lesson	VS	Video Screening
DAD	Discourse on Administration	DPC	Discourse on Personal Coaching
		SW	Student Work

LDV	Lesson Diversion	LC	Lesson Closure
DRB	Discourse on Rapport-Building	DSL	Discourse on Summary of Lesson
DD	Discourse on Discipline	DIH	Discourse on Issuing on Homework Discourse on Arrangements for
DM	Discourse on Motivation	DAM	Next Meeting
DP	Discourse on Permission	DG	Discourse on Greetings
DTC	Discourse on Time Check		
DED	Discourse on External Distraction		
DAD	Discourse on Administration		

In contrast, Adeline’s lesson is more orderly and the lesson development adheres to a structured progression from Lesson Initiation, to Lesson Progress and to Lesson Closure, punctuated by moments of Lesson Diversion. Unlike Wilson, Adeline moves promptly into Lesson Progress after five Lesson Microgenres and Discourse on Skills appears as the 10th Lesson Microgenre. The coherent sense of structure present in the sequence indicates a cohesive framework in which the orchestration of the entire lesson is conducted.

The frequency of occurrence of the Lesson Microgenres is in tandem with the information in Figure 5.3A-B. The size of the nodes in Figure 5.4A-B shows that Discourse on General Knowledge, Video-Screening and Discourse on Content dominate in Wilson’s lesson and Discourse on Skills, Discourse on Philosophy and Student Work are prominent in Adeline’s lesson. Their relative proportions to the other Lesson Microgenres are displayed in Figure 5.4A-B as well. The size of the Lesson Microgenres representing Lesson Diversion is also comparatively smaller in Adeline’s lesson than in Wilson’s.

An advantage of visualising the Lesson Microgenres in Figure 5.4A-B is the display of the interconnectivity and the frequency of connectivity between the

Lesson Microgenres. For instance, examining the arrows to and from Discourse on Skills, there appears to be a strong connectivity, as indicated by the blue and red arrows, between Discourse on Skills, Discourse on General Knowledge and Discourse on Content in Wilson's lesson. This suggests a frequent shift from a discussion on skills to general knowledge and passage content as well as vice versa. Adeline's graph, however, shows a strong connection between Discourse on Skills and Discourse on Philosophy, as indicated by the blue arrows. This indicates a regular transition between a discussion on skills to critical reasoning and vice versa.

The presence of many blue and red arrows in Wilson's graph indicates a lot of transitions across Lesson Microgenres. This suggests that Wilson's lesson is generally more unstructured and disorderly. In contrast, Adeline's graph has only a pair of blue arrows, indicating a strong affinity between Discourse on Skills and Discourse on Philosophy. This also suggests that her lesson unfolds generally in a more organised and structured manner, with less, perhaps unnecessary, transitions from one Lesson Microgenre to another.

The rich array of information depicted in Figure 5.4A-B has probably more insights to offer into the various Lesson Microgenres and the logogenesis of the lesson. For instance, it is possible to examine any of the Lesson Microgenre and investigate its connections to the other Lesson Microgenres. However, constraints of time and space, focuses our discussion mainly on Discourse on Skills, due to its contribution to the primary Skills & Content Topic in the lessons investigated.

5.3 Gesture Analysis

The gestures used by Adeline and Wilson in their lesson are discussed firstly in their formal descriptions and secondly in their functional semantics meanings. The corpus is coded according to the system networks of functional meanings in gesture introduced in Chapter 4. The results of the analysis are presented in this section.

5.3.1 Formal Selections in Gesture

In terms of the direction of gesture, both teachers, unsurprisingly, gesture towards the front most of the time with Wilson at 86.22% and Adeline at 92.16%. This is represented in Table 5.5. However, it is interesting to note that Wilson has a tendency to gesture towards the left at 7.65%, in contrast to none by Adeline. A possible reason for this is, as discussed in Section 5.4.1, Wilson has a proclivity to position himself off-centre at the classroom front right. As such, he may gesture more to the left where the students are sitting in order to engage them visually.

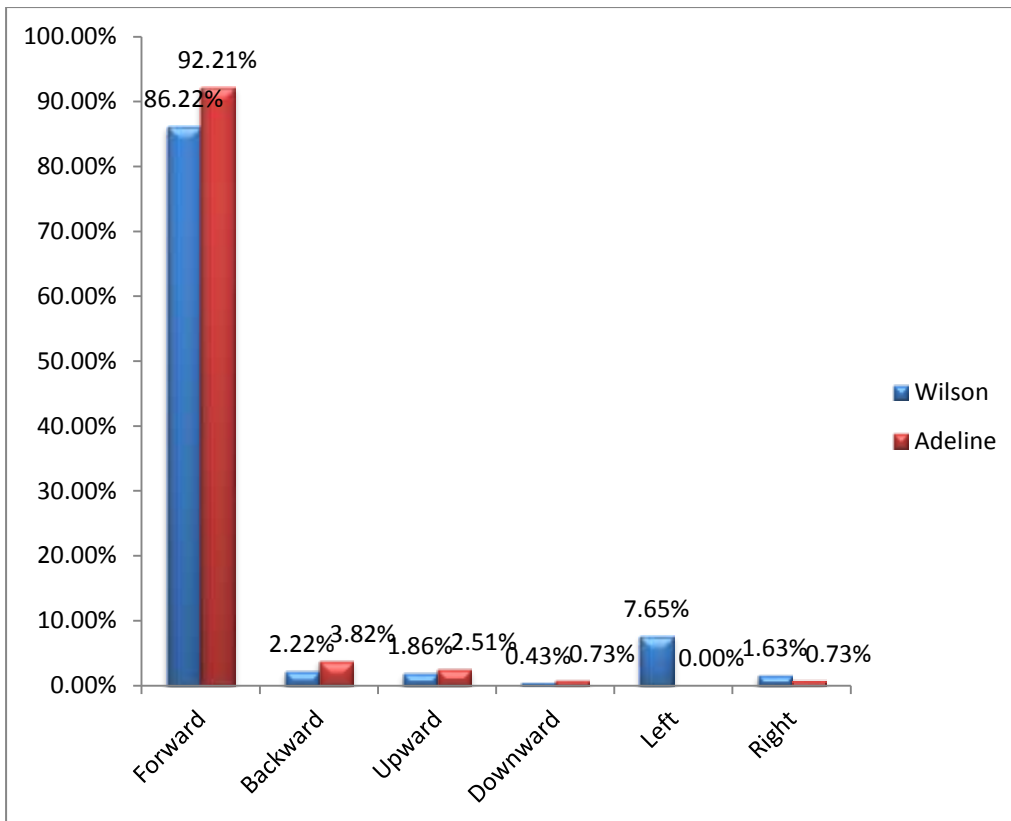


Table 5.5 Directionality of Gesture

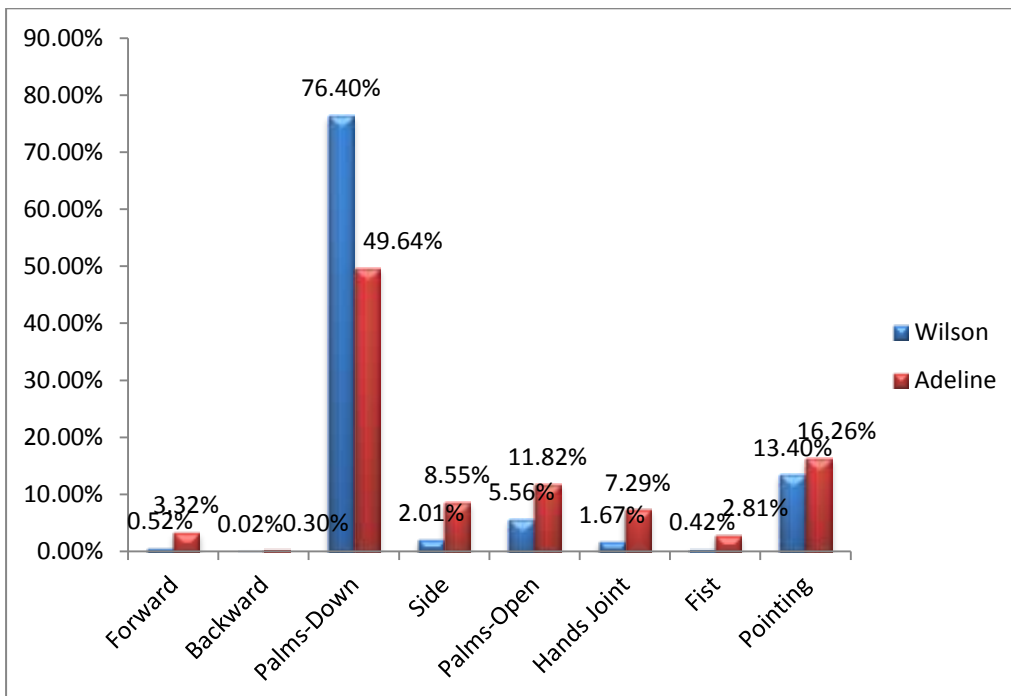


Table 5.6 Description of Hands



Figure 5.5 Adeline Pointing



Figure 5.6 Wilson Pointing

Table 5.6 tabulates the formal description of the hands. Wilson and Adeline use the pointing gesture at 13.40% and 16.26% of the time. Instances are shown in Figure 5.5 and Figure 5.6. The deictic gesture is typical of pedagogic discourse.

Adeline has both hands joined 7.29% of the time and by her sides at 8.55% of the time. This is shown in the first frame of Figure 5.7. While contextual information is necessary to interpret the specific meanings of this posture, Adeline's placement of hands is typical of a professional stance adopted by a teacher. In contrast, Wilson has his hands joined only at 1.67% of the time and by his sides at 2.01% of the time. This is shown in the first frame of Figure 5.8. Both also spend the majority of the

time with their palms down. However, Wilson adopts this posture 76.40% of the time as compared to Adeline's significantly lower 49.64%. While the palms-down position implies that no animated gesture is made, the position coupled with a posture of leaning forward towards the students conveys a sense of power and authority. This combination is frequently observed from Wilson. Instances are depicted in Figure 5.9.



Figure 5.7 Adeline in Hands Joint, Palms-Down and Palms-Open Gesture



Figure 5.8 Wilson in Hands Joint, Palms-Down and Palms-Open Gesture



Figure 5.9 Wilson Leaning Forward

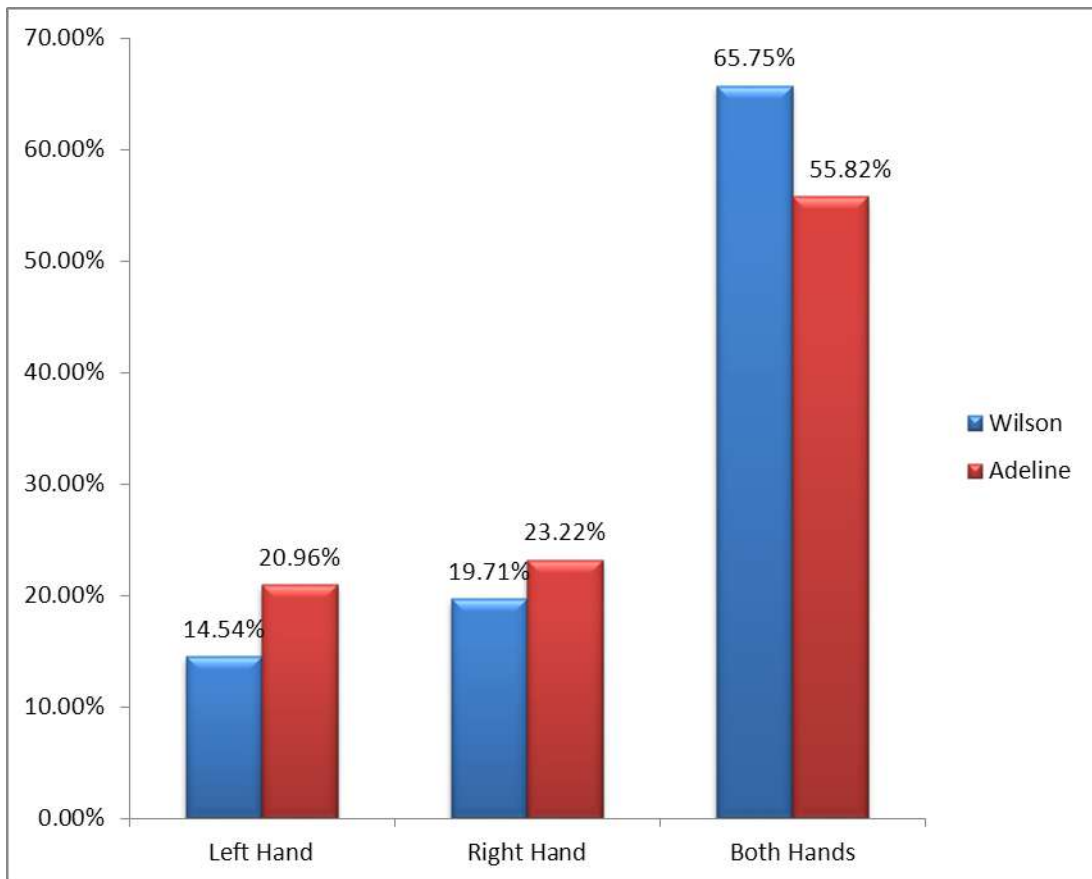


Table 5.7 Use of Hands

As discussed in Chapter 4, Hood (2011) argues that the palms-down gesture represents a contraction of engagement space. This has a distancing effect and serves to reinforce the differential power relations between the teacher and students. In contrast, Hood (2011) argues that open palms represent an expansion of engagement space. It is inviting and conveys a sense of openness by reducing the social distance between teacher and students. While Adeline appears more formal in her gestural selections of hands joined and hands by the side, she balances the sense of professionalism with multiple uses of palms-open gesture which occur 11.05% of the time. This is shown in the last frame in Figure 5.7. However, Wilson appears to

adopt a more overtly authoritative stance in his palms-down gestural selections and his lean-forward position. He uses the palms-open gesture only 5.51% of the time. This is depicted in the last frame of Figure 5.8.

Other formal descriptions include the use of hands as shown in Table 5.7. Both Wilson and Adeline tend to use both hands together most of the time with Wilson slightly more at 65.75% and Adeline at 55.82%. Both teachers are right-handed and they use the right hand alone more at 19.71% for Wilson and 23.22% for Adeline. Overall, Adeline tends to gesture with one hand more often than Wilson. This is because, as discussed later, Adeline holds notes in one of her hands for a significant period of time. To some extent, gesturing with both hands usually produces larger and more dramatic gestures and gesturing with one hand usually produces a smaller and more reserved gestures. This is consistent to what has been observed in Wilson and Adeline's pedagogical style. Wilson appears more dynamic through his inordinate use of gestures and movement. In contrast, Adeline appears more decorous through her more restrained use of gestures and movement.

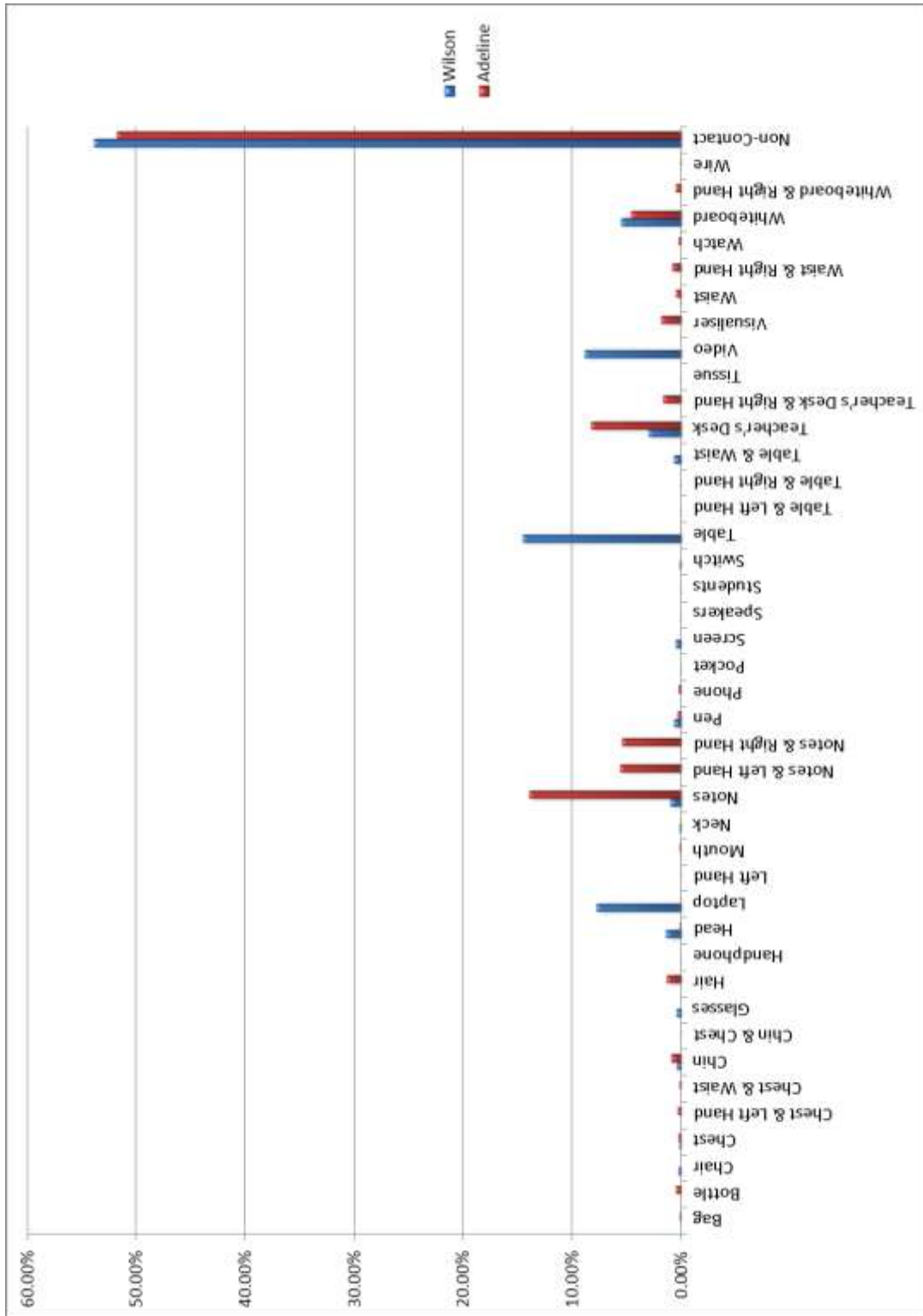


Table 5.8 Contact

The immediate object which the hands are in contact with is annotated in the study and the results are represented in Table 5.8. Overall, Wilson spends 45.79% in contact with objects and Adeline spends about the same time at 48.20%. Wilson spends 14.53% of the time leaning forward with his hands on the students' table as depicted in Figure 5.9. This contrasts starkly with Adeline's 0.07%. As mentioned earlier, this posture conveys a sense of power and authority that is distinctive of Wilson's gestural selections.

Adeline places her hands on the teacher's desk more regularly at 8.25% as compared to Wilson's 3.02%. This is because she spends a significant time teaching behind the teacher's desk. The implications of this spatial selection are discussed in Section 5.4.

Both use the whiteboard as the main interface during specific periods of the lesson. This is indicated by Wilson's hands being in contact with the whiteboard 5.54% of the time and Adeline's hands being in contact at 4.62% of the total lesson time, as shown in Figure 5.10. The pedagogical functions of the whiteboard in the General Paper classroom are discussed in Chapter 3.

Adeline also spends a significantly high amount of time, 24.94% holding notes as depicted in Figure 5.11. This suggests the central role of notes in her lesson. In comparison, Wilson only spends 1.01% of the time in contact with notes. However, Wilson spends more time using media technologies in the classroom. He is operating the video 8.86% and the laptop 7.75% of the time. Instances are depicted in Figure 5.12 and Figure 5.13. This contrasts to a negligible 0.02% of the time operating the

laptop. Instead, Adeline's hands are in direct contact with the visualiser 1.83% of the time, although she uses it more often than that. From the teachers' handling of objects and teaching resources, it is observed that Wilson prefers media technological teaching resources such as the laptop and videos whereas Adeline prefers traditional teaching resources such as notes.

Nonetheless, the effectiveness in the use of these resources to deliver the lesson cannot be implied from the formal description alone. As discussed earlier, Wilson's use of technological teaching resources, such as the video, might not have achieved its desired intended outcome. This observation, however, cannot be inferred from the significant portion of time Wilson spends in contact with the video here.



Figure 5.10 Contact with whiteboard



Figure 5.11 Contact with Notes



Figure 5.12 Contact with Laptop



Figure 5.13 Contact with Visualiser

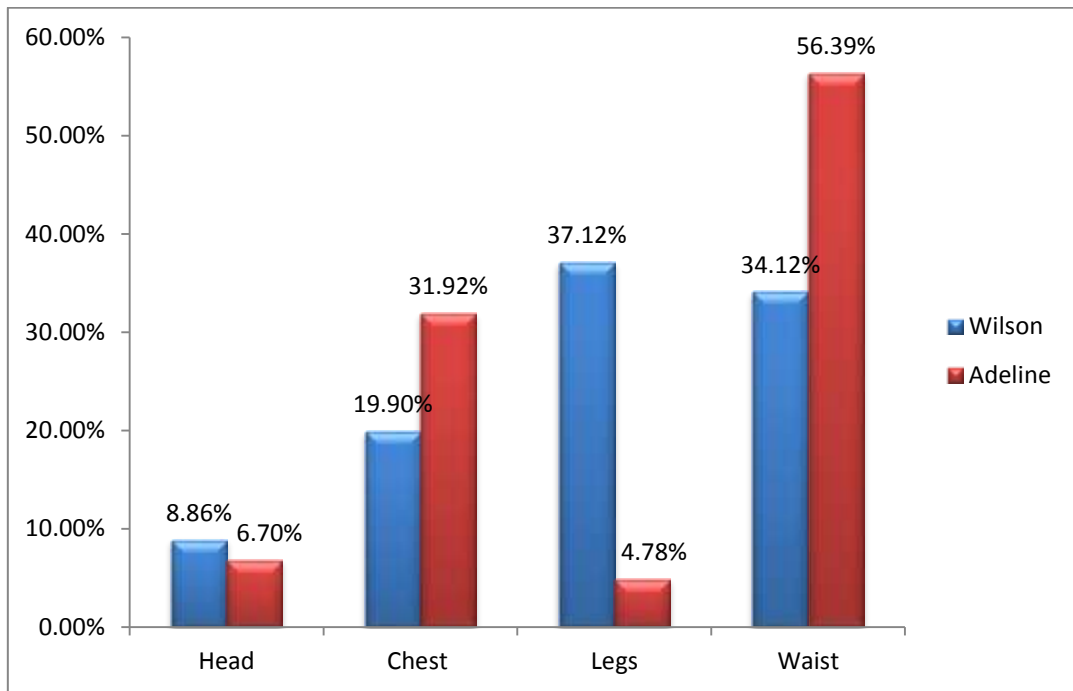


Table 5.9 Hands Level

The levels of the hands are coded and the results displayed in Table 5.9. Adeline spends 56.39% of the time with her hands at the waist level and Wilson at 34.12%.

The hands held at the waist level instead of being lowered down to the sides of the legs suggest a readiness to engage and convey a sense of professionalism. Instances are represented in Figure 5.14. However, Wilson spends a significant amount of time at 37.12%, with his hands lowered to the sides of the legs. This is substantially more often than Adeline's 4.78%. Examples are represented in Figure 5.15. Depending on the combination of other semiotic selections, the hands lowered to the sides of the legs can be construed as being militant and commanding to being casual and relaxed.

Adeline spends 31.92% of the time with her hands at her chest level, as compared with Wilson's 19.90%. Wilson and Adeline also spend 8.86% and 6.70% of the lesson time with their hands raised at their head level as seen in Figure 5.16. The interpretation of these selections is specific to the gestures they realise and are discussed further in Section 5.3.2.

From the preceding discussion on the formal realisations of gesture in the lessons, it is recognised that observations on form alone can narrow the range of possible meanings made. However, they present an insufficient basis to identify specific meanings made. The functional semantics of the gesture realised through the choices located in the system networks discussed in Section 5.3.2 and in light of

the combination of multimodal semiotic selections discussed in Chapter 6 are necessary to elucidate the meanings made.



Figure 5.14 Hands at Waist Level



Figure 5.15 Hands at Legs Level



Figure 5.16 Hands at Chest Level

5.3.2 Functional Meanings in Gesture

5.3.2.1 Ideational Meanings

5.3.2.1.1 Presenting Action

As discussed in Chapter 4, Martinec describes three types of actions, Presenting, Representing and Indexical. Wilson uses a significantly high amount of Presenting Actions at 70.91% whereas Adeline uses only 33.13% as shown in Table 5.10. According to Martinec (2000), Presenting Actions do not have signifying functions. They usually perform a task such as writing on the board, picking up a pen or scratching an itch.

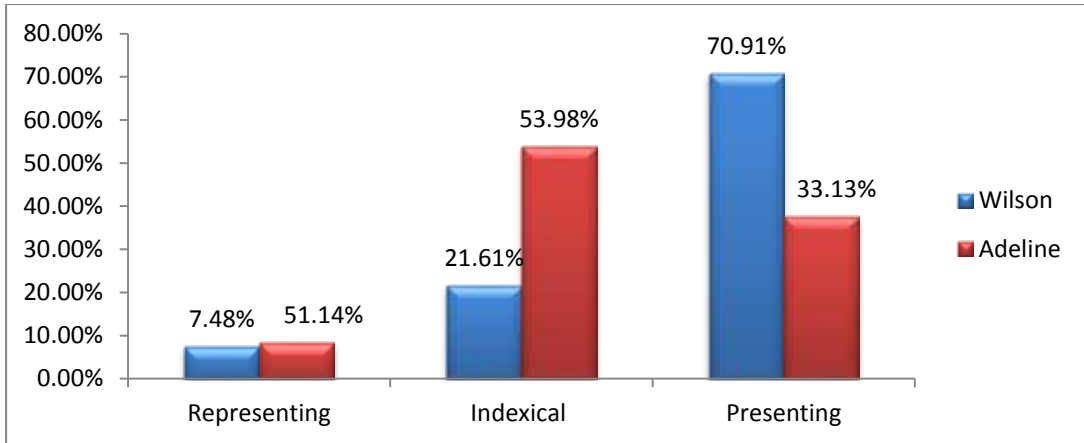


Table 5.10 Types of Actions

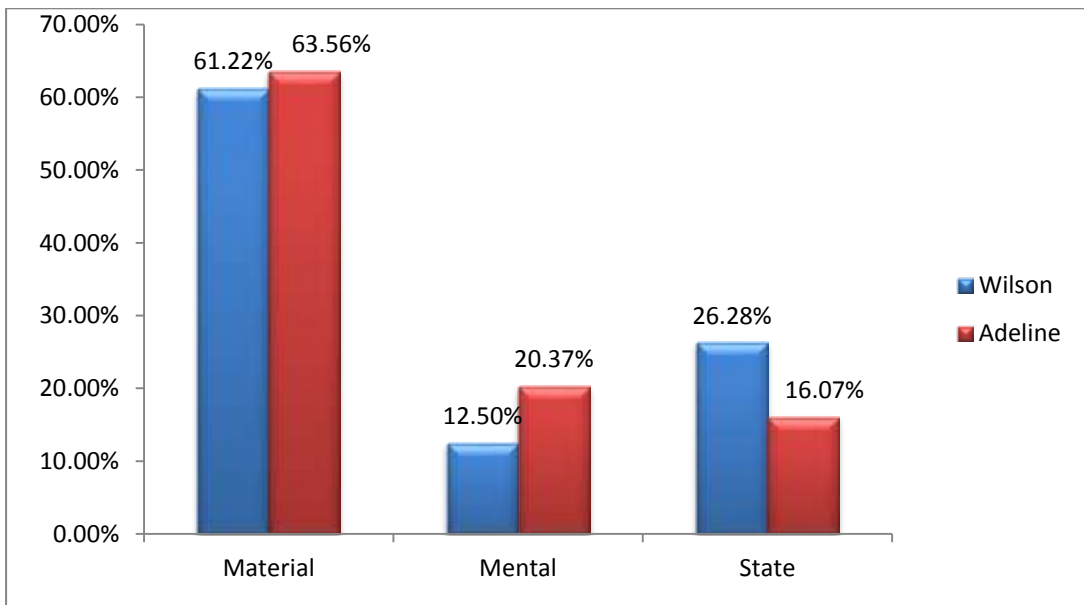


Table 5.11 Processes in Presenting Action

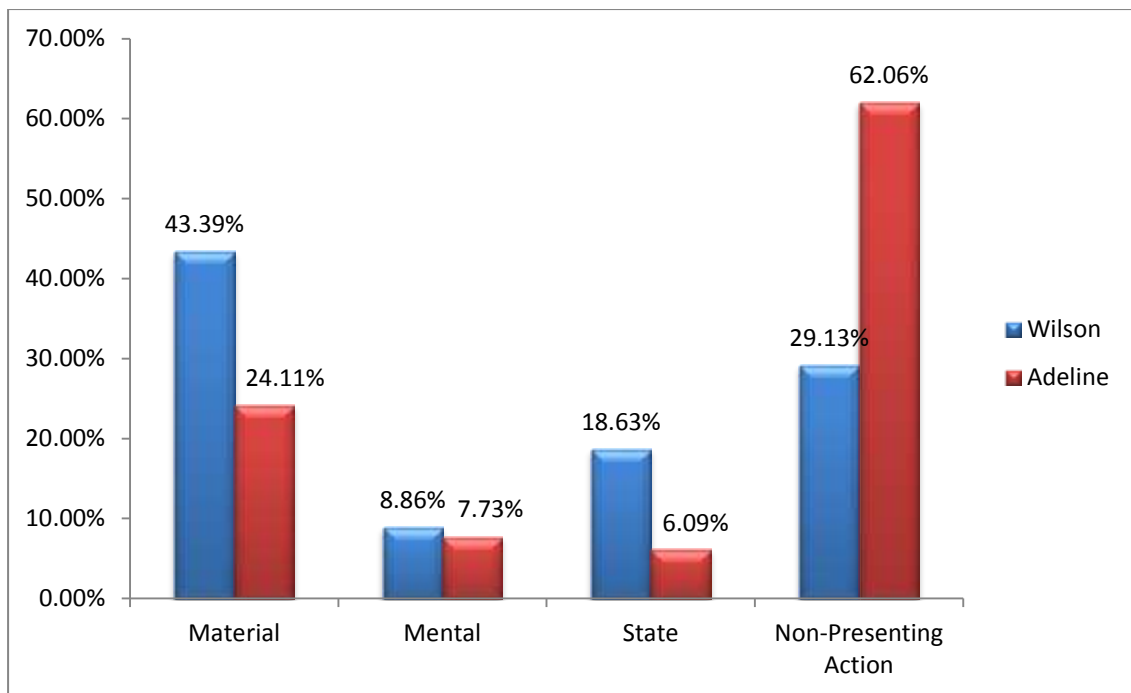


Table 5.12 Processes in Presenting Action across Lesson

The ideational meanings in Presenting Actions are realised mainly through the Material Process, State Process and Mental Process in pedagogic discourse. Both Wilson and Adeline share approximately the same amount of Material Processes in Presenting Actions with Wilson at 61.22% and Adeline at 63.56% as represented in Table 5.11. In terms of overall lesson time displayed in Table 5.12, Wilson uses Presenting Action: Material Process at 43.39%, as compared to Adeline's 24.11%.

Material Processes that are extraneous to the focus of the lesson may draw attention away from the main communicative event. Regular occurrences of these processes may also be disruptive to the learning. Figure 4.2 of Chapter 4 shows instances of Presenting Action by Wilson and Adeline.

Wilson spends 26.28% of his Presenting Actions in the State process where according to Martinec (2000: 249), “there is no obvious expenditure of energy”. This usually occurs when he is standing in front of the students and is not making any gesture. In comparison, Adeline spends only 16.07% in this position. In terms of overall lesson time, Wilson spends a significant 18.63% of the time in State Process. This contrasts with Adeline’s low 6.09%. Instances of State Processes are depicted in Figure 4.4 of Chapter 4.

Wilson’s concentration as he watches the video and Adeline’s silent reading of the notes are coded as Mental Processes. Figure 4.5 shows instances of Mental Processes. In relation to the total lesson time, both seem to spend about the same amount of time in Mental Process with Wilson at 8.86% and Adeline at 7.73%. However, in terms of the total Presenting Actions in each lesson, Wilson spends 12.5% in the Mental Process and Adeline uses it more often at 20.37%. As such, it is observed that in terms of the representation of processes within Presenting Actions, Wilson uses more State Process than Mental Process and Adeline uses more Mental Process than State Process. Hence, Adeline is observed to be involved in the visible proxy reference to cognition, perception and affection, components of the Mental Process, more often than Wilson.

5.3.2.1.2 Representing Action

As displayed in Table 5.10, Adeline uses Representing Actions 51.14% of the time, whereas Wilson uses them slightly less at 48.86%. Representing Actions can be both

Language Independent Gesture and Language Correspondent Gesture, as discussed in Chapter 4 and depicted in Figure 4.7 and Figure 4.8.

Instances of Representing Action that are Language Correspondent Gesture include Wilson tracing in the air with his index finger to represent the dynamic process of 'drawing'. This corresponds to him saying "draw it down". Another instance is when he points upwards with his index finger to signify the participant 'first' when he says "first point". They are shown in Figure 5.17.



"Drawing"



"First Point"



"Not"



"Reaching Out"

Figure 5.17 Language Correspondent Gestures

Adeline also instantiates Language Correspondent Gesture when she shakes her left palm to represent the process of "not" as she warns, "Do not refer to the author of the passages as if they are your friends". Another instance is when she

thrusts her arm forward to signify the dynamic process of “reaching out” literally to accompany her verbiage of “OK, so reaching out is interacting with them”. The examples are shown in Figure 5.17.

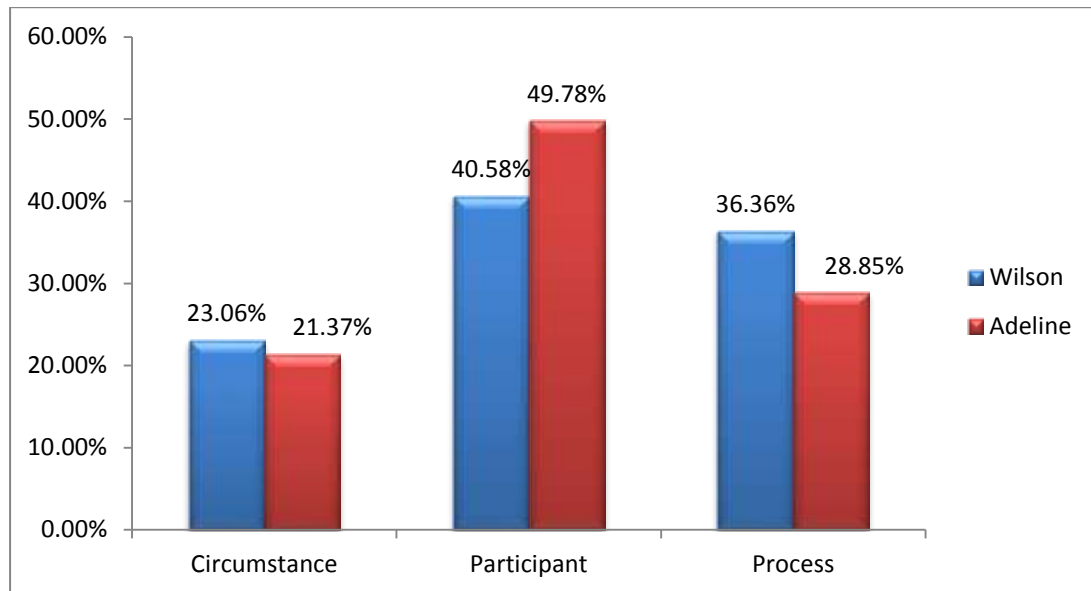


Table 5.13 Representing Entities

As discussed in Chapter 4, the ideational meanings in Representing Actions can be described in terms of Participants, Processes and Circumstances as displayed in Table 5.13.

Both Wilson and Adeline have the highest amount of Participants at 40.58% for Wilson and 49.78% for Adeline. This is followed by 36.36% of processes in Wilson’s Representing Actions and 28.85% in Adeline’s. Circumstances take up 23.06% of Wilson’s Representing Actions and only 21.37% of Adeline’s. From the statistics, it is inferred that through their gestural selections, Adeline tends toward the representation of entities and concepts through Participants whereas Wilson

tends towards the representation of action through Processes in their Representing Action.

5.3.2.1.2 Indexical Action

Of the three types of actions, Adeline uses Indexical Actions the most at 69.98% as reported in Table 5.9. This compares with Wilson's significantly lower 30.02%. As discussed in Chapter 4, Indexical Actions co-occur with speech and are Language Dependent Gestures. The three most common realisations of Indexical Actions observed in the two lessons are the representation of Importance instantiated through repeated Beats, the representation of Receptivity instantiated through Open Palms and the representation of Relation instantiated through Pointing.

As shown in Table 5.13, Wilson has a much higher percentage of the representation of Relation at 61.17% in his Indexical Actions and Adeline has only 28.05%. However, in terms of the total lesson time, Adeline uses more representation of Relation overall at 16.23% as compared to Wilson's 13.40%. The representation of Relation is instantiated when, for example, Adeline points at the screen to direct the student's gaze. Examples of the representations of Relation are shown in Figure 4.13 of Chapter 4.

The percentage of the representation of Importance and the representation of Receptivity in Indexical Actions are also very much higher for Adeline than for Wilson. The representation of Importance is instantiated when, for example, Adeline stresses the key points which the students need to remember as they write their

response to the Application Question, she moves her hand in a rhythmic beat to accentuate what she says. Instances are shown in Figure 4.11 of Chapter 4. The representation of Receptivity is instantiated when for example, Adeline gestures with open palms to invite responses from the students. Examples are depicted in Figure 4.12. Adeline spends 22.98%, as compared to Wilson's 2.14% on the representation of Importance. Adeline also spends 19.05% instead of Wilson's lower 17.24% on the representation of Receptivity. In terms of overall lesson time, the representations of Importance and Receptivity are substantially higher for Adeline. She spends 12.47% of the time on the representation of Importance and 10.34% on the representation of Receptivity. This contrasts with Wilson's significantly lower usage at 0.46% and 3.75% respectively.

Another form of Indexical Action is realised through the action of both hands clasped together. This gesture is coded as Pensive. This is shown in the first frame of Figure 5.7 and Figure 5.8. It is often observed when the teacher appears to be deep in thoughts, considering a response that the student has made or to a question that is raised. Adeline spends 10.77% of her total Indexical Actions making this gesture and Wilson spends 5.34% in this gesture. In terms of overall lesson time, Adeline spends 5.85% on Pensive, which is significantly higher than Wilson's 1.16%.

There are also a few occasions when Adeline folds her arms when she shares personal anecdotes. This is a protective gesture that is coded in this study as defensiveness. This is instantiated when, for example, she folds her arms when she talks about the incident where a former student contacted her and asked her out for a date. This is displayed in Figure 4.14 of Chapter 4.

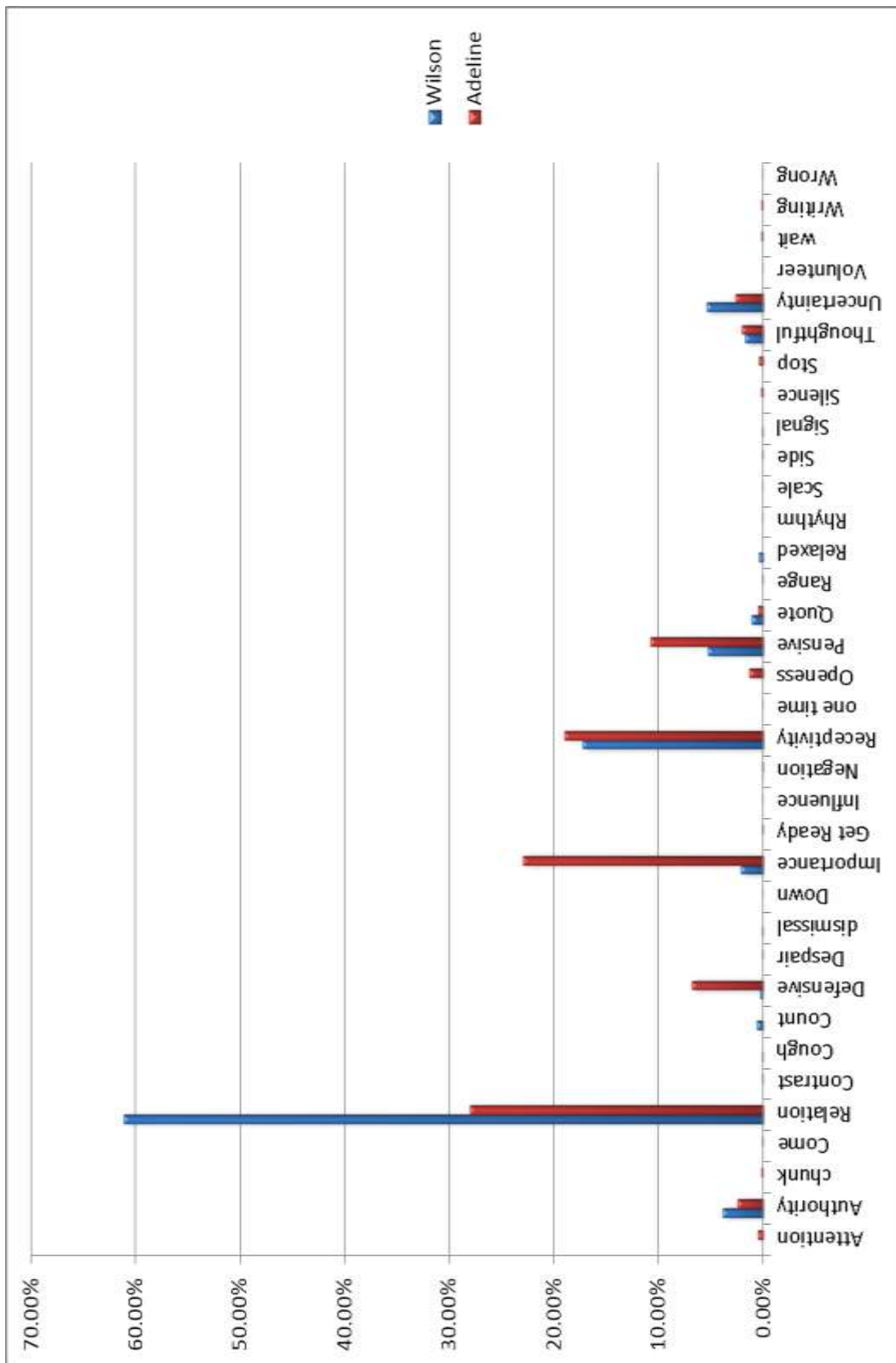


Table 5.14 Indexical Representation

While building rapport with students through the anecdotes, Adeline's folded arms are likened to a barrier which delineates the boundary between her and the students. This allows her to construct solidarity with the students through language and yet maintain a professional distance as a teacher.

Other types Indexical Actions are listed in Table 5.13. They are not discussed as they are not significantly represented, with statistically less than 5% present in the lessons observed. They are also tentative formulations based primarily on the observations in the two lessons. As such, they require further research and more extensive empirical support.

5.3.2.2 Interpersonal Meanings

As discussed in Chapter 4, the interpersonal meanings made in gestures are coded along the aspects of Attitude, Graduation and Engagement. This follows the work on Appraisal Theory developed by Martin & White (2005) for language and extended by Hood (2011) for gesture.

In terms of Attitude represented through gestures, both Adeline and Wilson, expectedly, embody an overwhelming of Positive Attitude in their gestural selections as shown in Table 5.15. The coding of Attitude is in accordance to the nature of the gesture made. For instance, the shaking of the hands or the folding of the arms to signify negation or adversarial meanings is coded as Negative Attitude. Examples of gestures realising Positive and Negative Attitudes are shown in Figure 4.17 of Chapter 4. Adeline leads at 88.91%, with Wilson slightly lower at 80.27% of Positive

Attitude. A greater degree of Positive Attitude corresponds with a sense of openness and affability between the teacher and students. This leads to a more participative rather than authoritative learning environment.

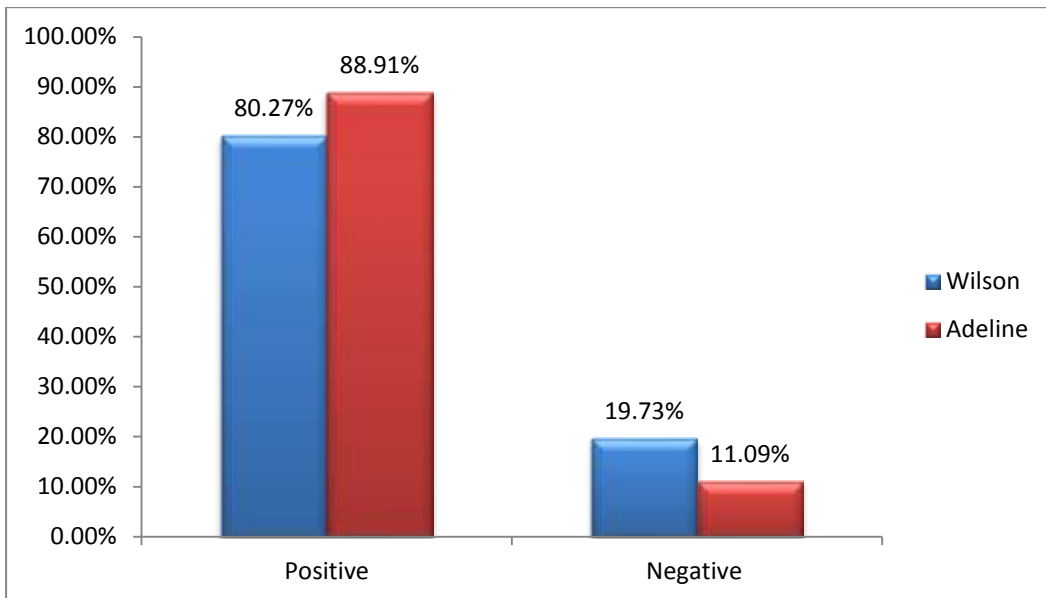


Table 5.15 Attitude

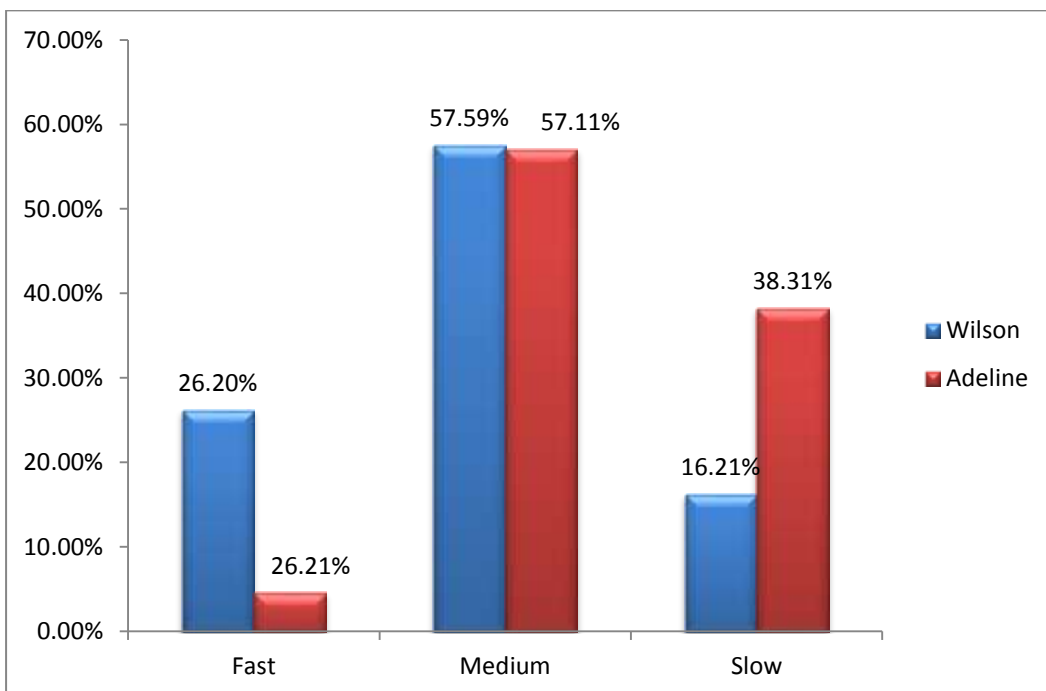


Table 5.16 Graduation

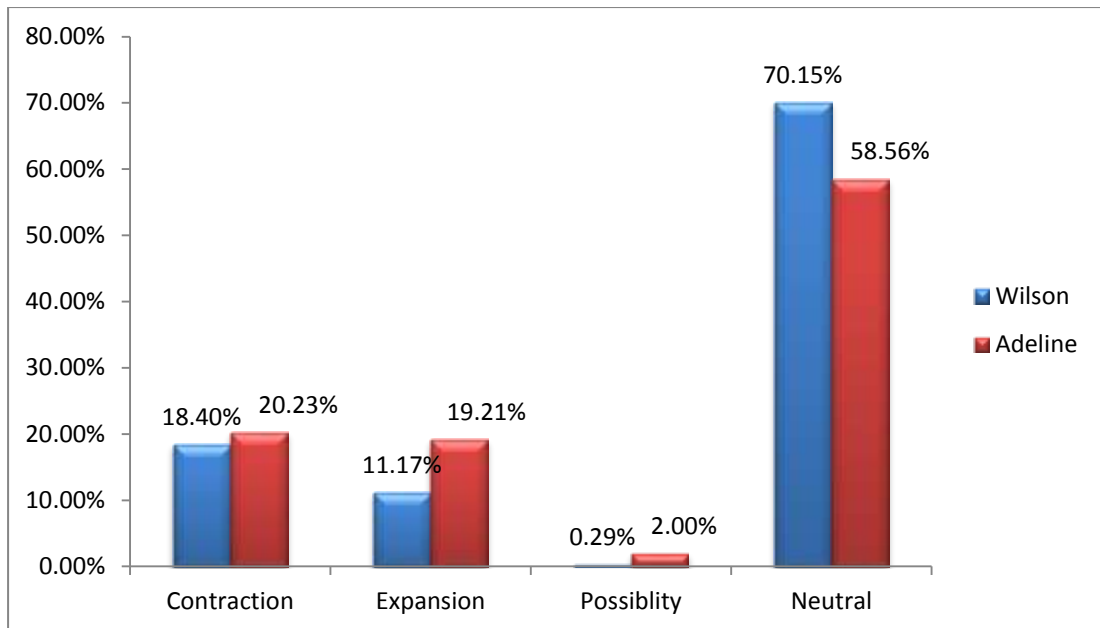


Table 5.17 Engagement

As discussed in Chapter 4, Graduation in interpersonal meanings can be realised through intensity, size, quantity, scope as enumerated by Hood (2011) as well as specificity, speed and muscle tension as listed by Martinec (2001). However, given the complexities in measuring attributes such as muscle tension and size, as well as the intensive investigation of the other semiotic resources in this study, the measurement of Graduation focuses primarily on the realisation of speed (Graduation as Force) and specificity (Graduation as Focus). In addition, following Hood (2011), the dimension of specificity is discussed under textual meanings. As such, speed is used as a measure of graduation for interpersonal meanings.

From the results in Table 5.16, Wilson has a higher amount of Fast gestures at 26.20% as compared to Adeline's significantly lower 4.58%. Adeline's gestures tend to be more measured and deliberate. She uses a higher amount of Slow gestures at 38.31% as compared to Wilson's 16.21%.

The statistics is consistent to previous observations suggesting that Adeline tends to be decorous in her pedagogical style and prefers a more judicious use of gestures. Her gestures are also executed in a slower and more considered manner. In contrast, Wilson's dynamic pedagogical style tends towards a more lavish use of gestures which are usually performed rapidly.

Following Hood's (2011) proposition of the expansion and contraction of negotiation space through the positioning of hands, as discussed in Chapter 4, gestures realising interpersonal Engagement in both lessons are annotated. Some of the realisations are exemplified in Figure 4.19 of Chapter 4. Both Wilson and Adeline realise the contraction of negotiation space through the palms-down position. Wilson uses it at 18.40% and Adeline slightly more at 20.23% as shown in Table 5.17.

Adeline realises greater expansion of negotiation space through the open palms position at 19.21% as compared to Wilson's significantly lower 11.17%. As described by Hood (2011), the open-palms position invites the students' voices into the discourse. Oscillating hand movements realises possibility. It is also used more frequently in Adeline's lesson at 2.00% as compared to Wilson's low of 0.29%. Examples are represented in Figure 4.20 of Chapter 4.

Overall, the expansion of negotiation space and the expression of possibility through Adeline's gestural selections reduce the hierarchical distance between teacher and students. It also constructs an egalitarian environment in the classroom where students are invited and encouraged to contribute and participate. Such an

environment is arguably requisite in fostering active and engaged learning in the classroom.

5.3.2.3 Textual Meanings

Following the discussion in Chapter 4, textual meanings are organisational resources for ideational meanings and interpersonal meanings made.

Martinec (2004) explains that the rhythmic flow of information realises the textual meanings in gestures. This is instantiated in the repetitive motion to emphasise the ideational and interpersonal meanings. In this study, the number of Beats in each gesture is annotated.

Adeline uses rhythmic beats more often than Wilson. In fact, as displayed in Table 5.18, 81.41% of Wilson's Representing and Indexical Actions have only one beat, whereas 53.30% of Adeline's Representing and Indexical Actions have only one beat. In other words, Wilson's gestures have more than one beat only at 18.6% of the time. In contrast, Adeline's gesture has more than one beat at 46.7% of the time. Hence, Adeline uses rhythmic beats in her gestures almost half the time she gestures. The most number of beats occurred when she is emphatic in communicating important points. For instance, she uses eight beats (the highest number of beat recorded in her lesson) when she emphasises, "Straightaway, I show the examiners that I understand what reaching out to young people mean". She does this with her right hand stretched forward and her index finger directed at the class in a rhythmic beat to accompany her verbiage. This is a significant moment as she

articulates the reason why she strongly recommends a particular approach in her model answer to the Application Question.

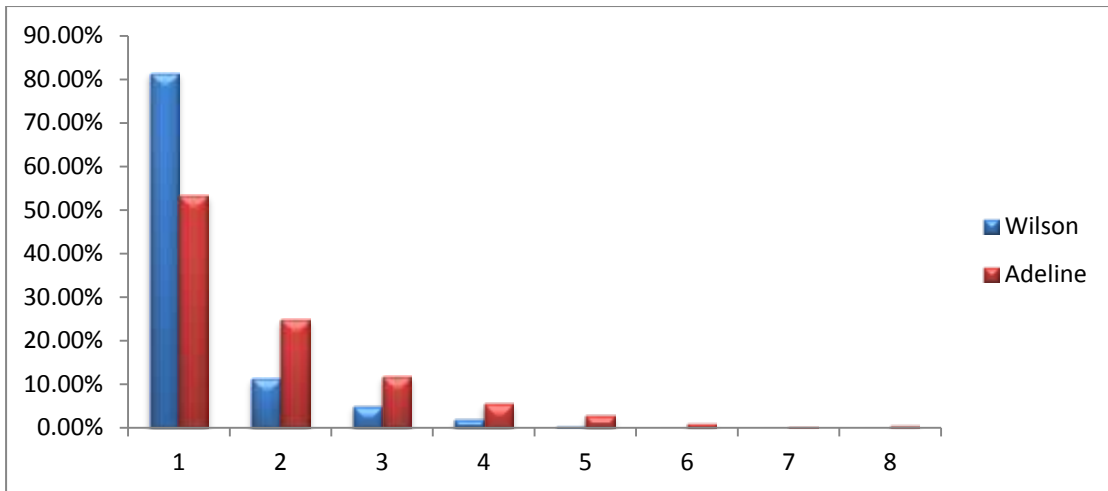


Table 5.18 Beats

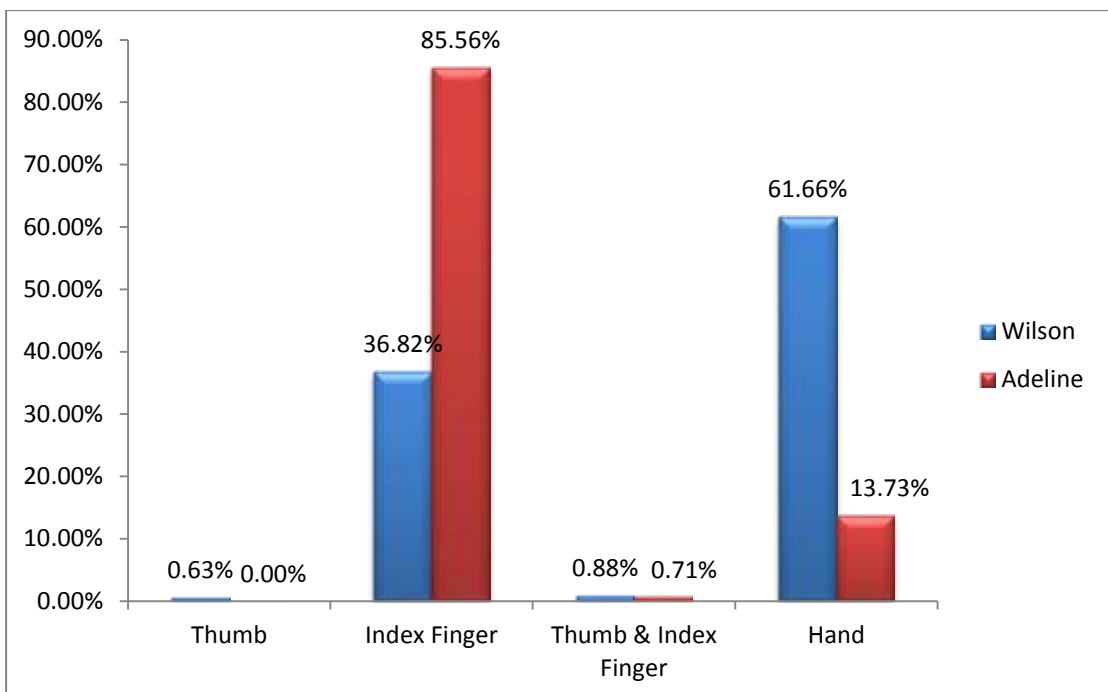


Table 5.19 Specificity of Pointing

In addition to wavelength, Hood (2011) argues that the textual meaning of identification instantiated through pointing can be observed in the attributes of directionality and specificity.

In terms of specificity, as represented in Table 5.19, Adeline points more regularly with her Index finger at 85.56% of the time. This contrasts with Wilson’s at only 36.82%. Wilson prefers to point with his hand and uses this 61.66% of the time, as compared to Adeline’s only 13.73%. The difference in their preferences is indicative of their pedagogical styles. Adeline seems to tend towards greater precision and focus in drawing the students’ attention to the object of her pointing. As discussed earlier in Chapter 4, the high specificity in pointing with the index finger functions as an imperative which demands attention from the students. Wilson, however, seems to prefer pointing generally with his hand to where the students’ gaze is to be directed.

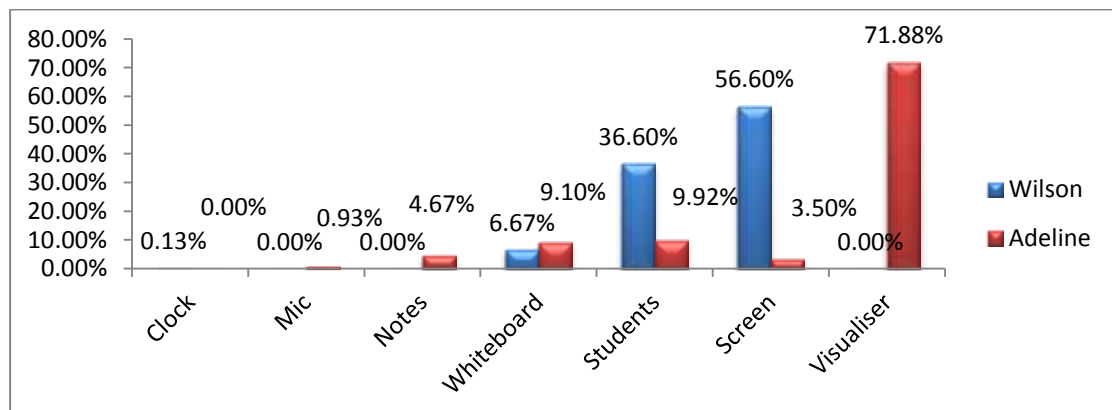


Table 5.20 Directionality of Pointing

In terms of directionality, the object of the teacher's deictic gesture is indicative of its centrality and importance in the pedagogic discourse. The results are presented in Table 5.20.

Expectedly, both teachers point to the whiteboard, where the teacher uses as one of the media for written language. Wilson points to the whiteboard 6.67% of the time and Adeline points the whiteboard slightly more at 9.10%.

While both Wilson and Adeline use the screen as the main medium for visualising their text, Wilson points directly at it and he does that 56.18% of the time whereas Adeline only points directly at it 3.50% of the time. For 71.88% of the time, Adeline points to her text on the visualiser as she teaches behind the teacher's desk. Her pointing with the index finger and her text are then magnified and projected on the screen. Instances are displayed in Figure 4.22 of Chapter 4.

Wilson tends to point directly at the students to demand their attention. He does that at a significant 36.33% relative to Adeline's low 9.92%. Pointing at a student directly embodies high power and is analogous to a command in language, demanding the student's attention. However, as mentioned earlier, the intensity of Wilson's pointing is mitigated by his choice to use the entire hand rather than the index finger most of the time. This is depicted in Figure 4.24 of Chapter 4.

5.4 Space & Movement Analysis

The theoretical propositions in the mapping of the use of space through the positioning and movement of the teacher are introduced in Chapter 4. The conceptions are applied to the lessons investigated. The 'spatial pedagogy' exemplified by the two teachers is discussed in this section.

As both lessons take place in the same classroom, the spatial layout is identical. The two graphs generated by *Cytoscape*, however, reveal telling differences in the use of space through the positioning and movement of the teachers, and by extension their pedagogy.

Cytoscape allows for the visualisation of the two teachers' use of space in the classroom in Figures 5.18A-B through the mapping of positioning and movement according to the following dimensions:

- 1) Static positioning or dynamic movement: Static positions are represented as orange circles and dynamic movement and pacing are represented as purple rectangles.
- 2) Correspondence to the actual location in the classroom: The nodes are positioned in accordance to the layout of the classroom.
- 3) Frequency of occurrence: The larger size of the node, the more frequent the space is selected.
- 4) Directionality of movement from one space to another: The arrows represent the directionality of the movement, and the size and colour of the arrows represent the frequency of the same directional movement according to the following key: Grey: 1 occurrence; Black: 2 to 5 occurrences; Green: 6-10

occurrences; Yellow: 11 to 15 occurrences; Blue: 16-20 occurrences; and Red: 21 or more occurrences.

Legend:

	Space		Movement
BTD	Behind Teacher's Desk	MFW	Move Forward
HBTD	Half Behind Teacher's Desk	MBW	Move Backward
TDSL	Teacher's Desk Side Left	MSWL	Move Sideway Left
TDSR	Teacher's Desk Side Right	MSWR	Move Sideway Right
CFL	Classroom Front Left	PL	Pace Left
CFR	Classroom Front Right	PR	Pace Right
CFC	Classroom Front Centre	PF	Pace Front
WBL	Whiteboard Left		
WBC	Whiteboard Centre		
WBR	Whiteboard Right		

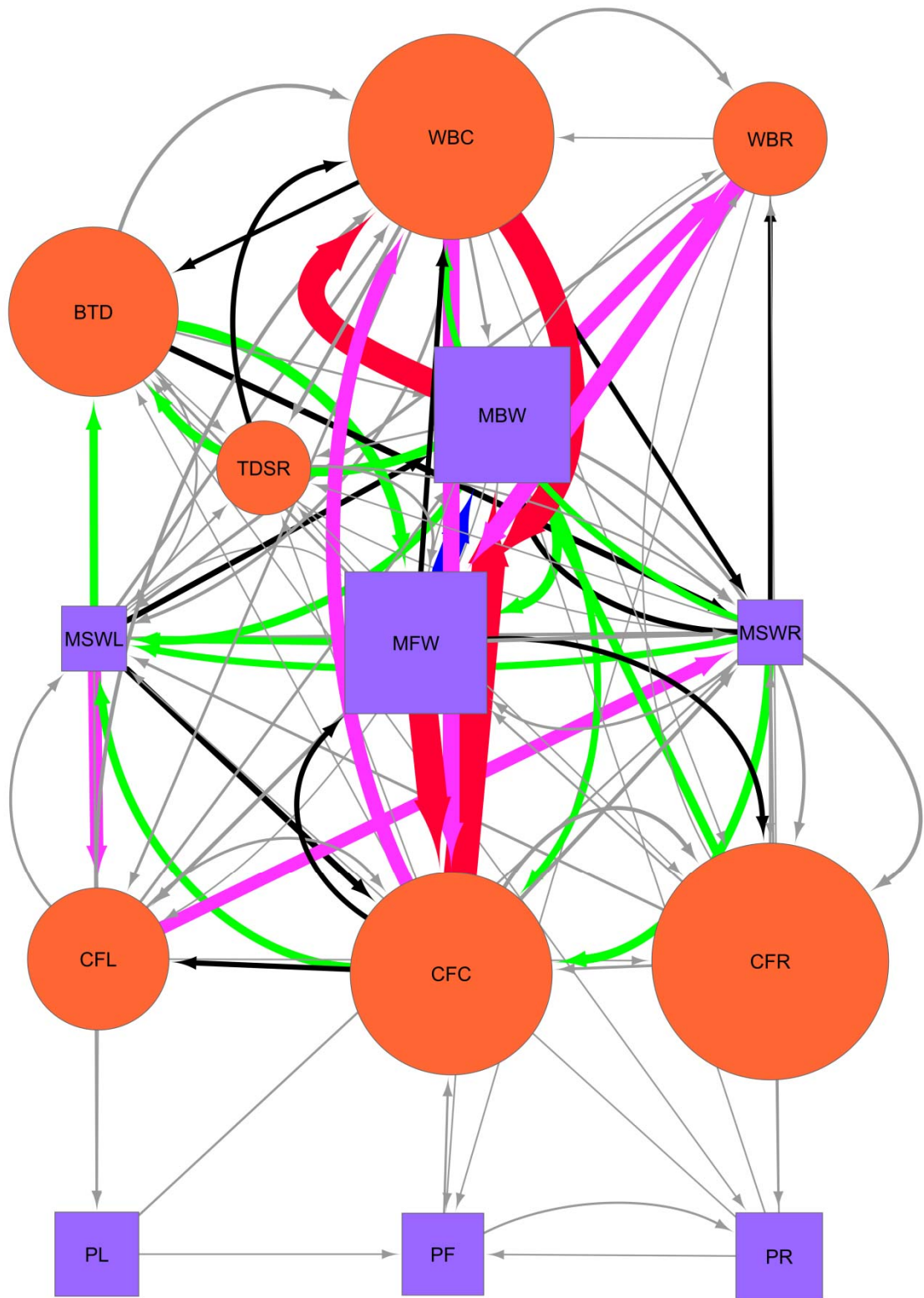


Figure 5.18A Wilson's Positioning & Movement Graph

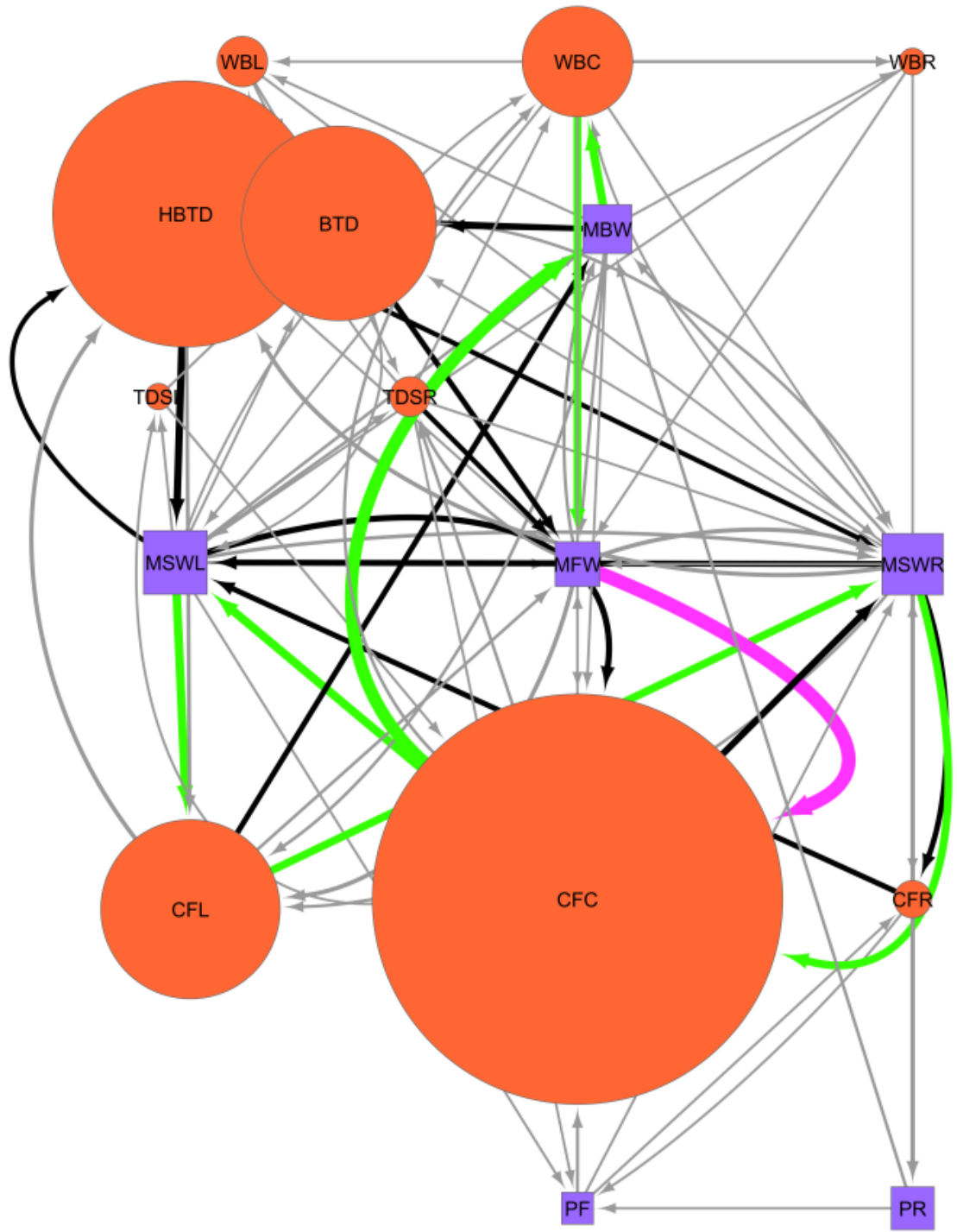


Figure 5.18B Adeline's Positioning & Movement Graph

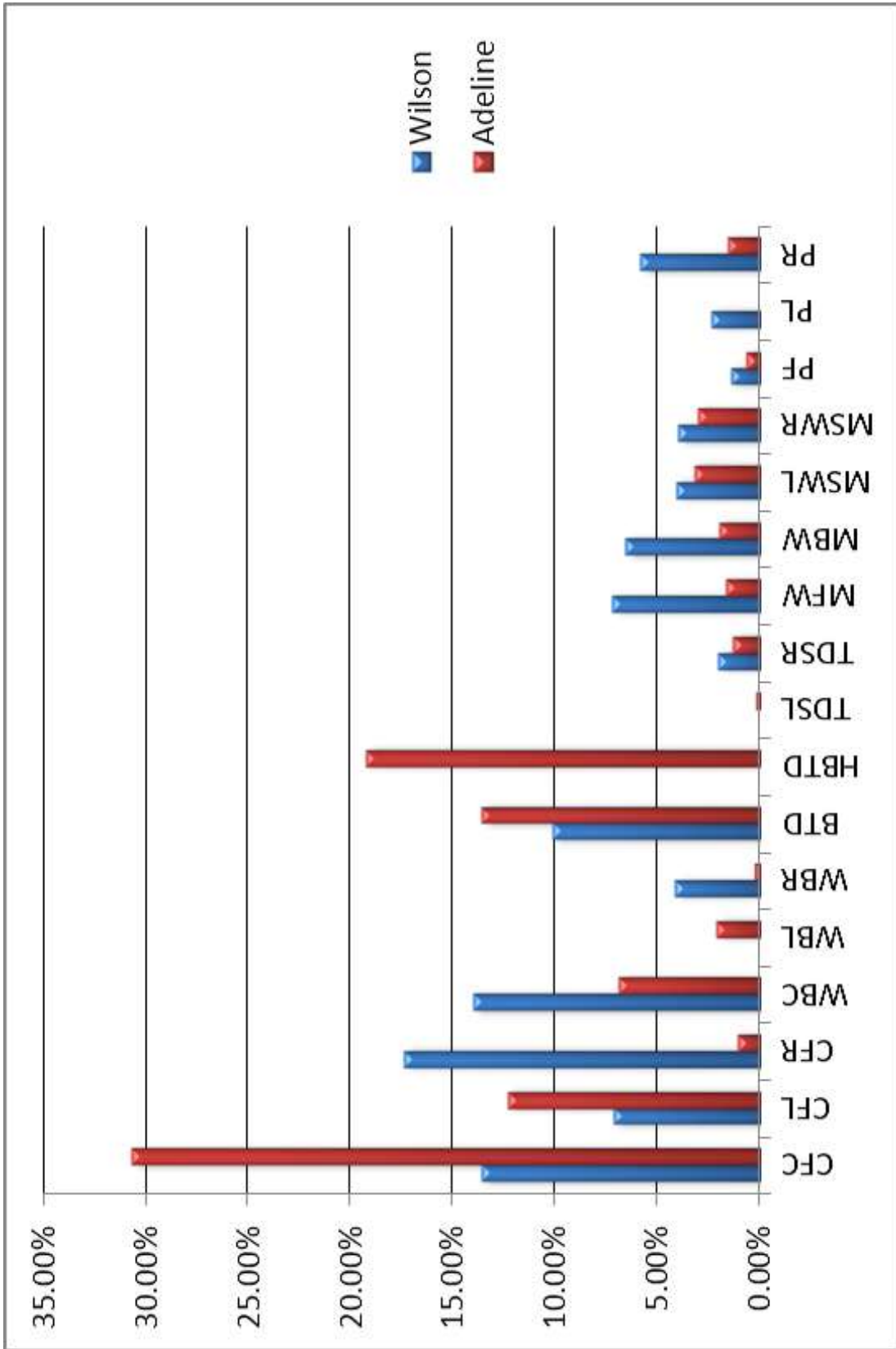


Table 5.21 Statistical Analysis of the Use of Space

5.4.1 Analysis of Space

In the two lessons investigated, Adeline spends most of the time in the Authoritative Spaces in the classroom, whereas Wilson spends significant time in all the various spaces in the classroom, as shown in Table 5.21. As discussed in Chapter 4, the front of the classroom is the classical Authoritative Space where the teacher instructs and carries out his or her teaching. Classroom Front Centre (CFC in Figure 5.18 & Table 5.21), the space right in front of the students, is associated with formality, given the power relations which are established through spatial distance. Adeline spends a substantial portion of the lesson time at 30.71% in Classroom Front Centre. Comparatively, Wilson spends less time at 13.62% in that same position. Instead, as displayed from Figure 5.18A, Wilson prefers to position himself in the different spaces of the classroom. The maximised use of the different classroom spaces by Wilson is consistent with the observation of his high frequency of movement, discussed in Section 5.4.2.

While Adeline also has a slight tendency to position herself on the Classroom Front Left (CFL in Figure 5.18 & Table 5.21), she spends substantially most of her time in the Classroom Front Centre, construing a professional relationship with the students in the Authoritative Space. This is visualised in Figure 5.18B. Figure 4.25 in Chapter 4 also depicts instances in the use of Classroom Front Centre.

Perhaps to mitigate the power conveyed through occupying Classroom Front Centre, teachers might stand off-centre to the left or right. While still in the Authoritative Space, they play down the authority by positioning themselves off-

centre. Wilson spends a substantial 17.39% of the time in Classroom Front Right (CFR in Figure 5.18 & Table 5.21) and 7.15% of the time in Classroom Front Left. The significant time spent in Classroom Front Right is also due, in part, to Wilson's position in that space during the sessions of video screening. Adeline spends less time at 9.71% in Classroom Front Left and only 1.11% in Classroom Front Right.

As described in Chapter 4, the space behind the teacher's desk is typically construed as the Personal Space. This is where the teacher organises materials and prepares for the next part of the lesson. This is represented in Figure 4.26. However, as discussed in Chapter 4, spaces are reconfigurable according to the functions they serve. To varying degrees, the use of traditional and technological teaching resources also defines, and to some extent, constrains the position and movement of the teacher. This observation is consistent with Jewitt's (2011) study of the use of Interactive whiteboards in the classroom, where the tendency is for the teachers to limit their movement and stand around them.

Both teachers inhabit the space around the teacher's desk regularly, for practical reasons, namely to use the visualiser and operate the laptop. Wilson spends a reasonable amount of time Behind the Teachers Desk (BTD in Figure 5.18 and Table 5.21) at 10.15%. The main reason he enters that space is to operate the laptop, but he almost never teaches from that position. Adeline, on the other hand, spends a significant part of the lesson teaching in Behind Teacher's Desk at 13.57% and Half-Behind the Teacher's Desk (HBTD in Figure 5.18 & Table 5.21) at 19.26%. Adeline's use of the visualiser to display her notes confines her to this space and reconfigures the Personal Space into an Authoritative Space. She tends to stand behind the

teacher's desk and lecture from that position, using the desk like a podium as shown in Figure 5.19. She spends a significant amount of time there, including Teacher's Desk Side Left (TDSL in Figure 5.18 & Table 5.21) and Right (TDSR in Figure 5.18 & Table 5.21) at 34.38%. By converting Behind Teacher's Desk into an Authoritative Space, Adeline's spatial selections again indicate a more formal relationship and convey a sense of professional distance with her students.



Figure 5.19 Adeline Behind the Teacher's Desk

As displayed in Figure 5.18A-B, Adeline and Wilson spend the most time in the Authoritative Spaces. This is a regular phenomenon in most classrooms where the didactic nature of instruction is foregrounded. However, it must be noted that the power and authority of the teacher is mitigated somewhat through positioning away from the front centre of the classroom. Wilson achieves this by standing slightly off-centre as well as maximising the use of other spaces in the classroom. Adeline achieves this, to some extent, by standing Behind Teacher's Desk and Half-Behind Teacher's Desk which is located within the left front area of the classroom. Arguably though, teaching Behind the Teacher's Desk with the desk as a quasi podium, as Adeline does, constructs a sense of formality and professional distance between teacher and students as well.

5.4.2 Analysis of Movement

The movement of the teachers in the lesson is also coded. Adeline is observed to move forward and backward at times from Classroom Front Centre to Whiteboard Centre (WBC in Figure 5.18 & Table 5.21) during her lesson. This is shown in Figure 5.18B. The usual reason for this movement is to move backward to use the whiteboard and to move forward to emphasise a teaching point to the student. In contrast, Wilson tends to make even more of such movements, adopting this pedagogic strategy significantly more often than Adeline. In comparison to Wilson's style, Adeline displays less movement from space to space. She prefers to deliver her lesson mostly from a static position.

The differences in movement are evident from the graph of Adeline's movements which is much simpler than Wilson's graph in Figure 5.18A. That is, there are fewer arrows and an absence of blue and red arrows in Adeline's graph which suggests a low frequency of movement. On the other hand, the complexity and density of arrows and the presence of blue and red arrows in Wilson's graph reflects his tendency to move around in the classroom. That is, Wilson spends 31.48% of the time in movement whereas Adeline spends only 12.12% of the time moving around in the classroom.

During student activities, the teacher may also choose to Pace at the Front (PF in Figure 5.18 & Table 5.21), Left (PL in Figure 5.18 & Table 5.21) and Right (PR in Figure 5.18 & Table 5.21) of the classroom. This is described in Chapter 4 as the Supervisory Space where the teacher invigilates the students' activities and makes his or her presence known through a 'patrol' around the fringes of the classroom.

Pacing in the Supervisory Space is observed 2.22% of the time in Adeline's lesson and 9.59% of the time in Wilson's lesson. This is consistent of Wilson's pedagogy where he uses rapid movement and pacing regularly across the different spaces. Furthermore, Wilson's pacing around the students, in a sense, encircling them, assumes functions of control and compliance, particularly, if the pacing is coupled with other semiotic resources, like gesture or language, that signify dominance and authority. Figure 4.28 in Chapter 4 displays instances of this.

Even as Wilson is able to convey a sense of energy and dynamism in the lesson through his penchant for pacing, there is also a risk that his high frequency of movement may potentially draw attention away from the meanings he makes with the other semiotic resources, such as language. This is particularly so if the meanings made from his use of space in relation to language are divergent rather convergent in nature. The specific implications of a high degree of random movement in the classroom on effective teaching and learning invite further investigation beyond the scope of this study.

5.5 Analysis of Language

The analysis of language in the classroom is enabled on two platforms. The first is in the language used in each lesson visualised as an image through Word Cloud Analysis via *Tagxedo*. The second is the selections in Mood & Modality and Transitivity on the *Pivot Charts* in *EXCEL*. The analysis of Mood & Modality and

The visualisation of the most frequently used words by Wilson and Adeline are shown in Figure 5.20A-B. The frequently used words, displayed in their size and centrality are proxy indicators of the recurrent themes and foci in the lessons. For instance, in Wilson's lesson, there is a repetition of words like 'problem' and 'solution', 'question' and 'answer' as well as words relating directing to the passage content, such as 'humanitarian', 'fuel', 'land' and 'displacement'. There is also a significant amount of evaluative language used by the teacher in the lesson as evident from the reiteration of 'right', 'don't', 'correct', 'OK', 'yes' and 'good'. Finally, there is also a focus on the mental-cognitive process in the use of words like 'think', 'question', 'read' and 'know'. These observations are consistent to the findings from the Systemic Functional Grammar analysis discussed in Section 5.5.2.

Like Wilson's lesson, the focus on 'question' and 'answer', 'idea' and 'evaluation' are apparent in Adeline's lesson. They are amongst the most frequently used words as displayed in Figure 5.20B. Adeline also uses evaluative language, perhaps to a less extent than Wilson, as they are relatively less salient. Examples of such words include 'don't', 'yes', 'wrong' and 'OK'. Reference to the passage content in discussion also dominates her talk, in the repetition of words like 'young', 'people', 'youthfulness', 'ageing' and 'success'. However, Adeline's also seem to use more meta-language on the subject General Paper and on language than Wilson. This is observed in her reiteration of words like 'example', 'apostrophe', 'extrapolating', 'extent', 'evaluation', 'reasons' and 'paragraph'. Reference to the assessment is also made in Adeline's lesson through the reiteration of words like 'examiners', 'marks' and 'score'.

'Laughter' displayed in Figure 5.20A-B is, in fact, not a word used by Adeline or Wilson. They are used in the researcher's transcription when the class laughs collectively. The size of the word is a proxy indicator that laughter is recorded more regularly in Adeline's lesson than in Wilson's. If laughter indicates engagement and enjoyment, Adeline's lesson seems to be more interesting and entertaining for the students. Further research can be done to determine the role of laughter in the classroom for effective teaching and learning.

Adeline also uses more adjuncts such as 'err', 'OK' and 'erm' in her verbal communication with the students. The use of such adjuncts and hesitations is interpersonally meaningful in modulating the intensity as well as reducing the social distance implicit in the hierarchical teacher-students relationship. Along with the observation of more laughter in Adeline's lesson, the use of such adjuncts is consistent to the subsequent discussion on Adeline's effort to establish rapport and facilitate a more participative learning environment.

5.5.2 Systemic Functional Grammar Analysis

Selections from the Mood system as displayed in Table 5.22 indicate that both Wilson and Adeline typically use more finite mood choices. Wilson uses it 60.89% of the time and Adeline at 62.50%. Non-Finite mood is often realised in the speech function of imperatives in pedagogic discourse. This is used 10.37% by Wilson and 10.95% by Adeline. Wilson shows a slightly higher selection of modality at 28.7% as compared to Adeline's 26.55%. The frequent use of modality represents a

modulation of power, through the use of low modality such as in words like ‘could’ and ‘might’. However, it can also be an assertion of power through the use of high modality such as in words like ‘should’ and ‘must’. From the complementary perspective offered in the Word Cloud Analysis, words that indicate power through the use of ‘don’t’ and ‘need’ are used very frequently by Wilson and in a less extent by Adeline. A high frequency of imperatives represented in the non-finite selections and an assertion of power through the use of high modality construct an authoritative pedagogy embodied by Wilson.

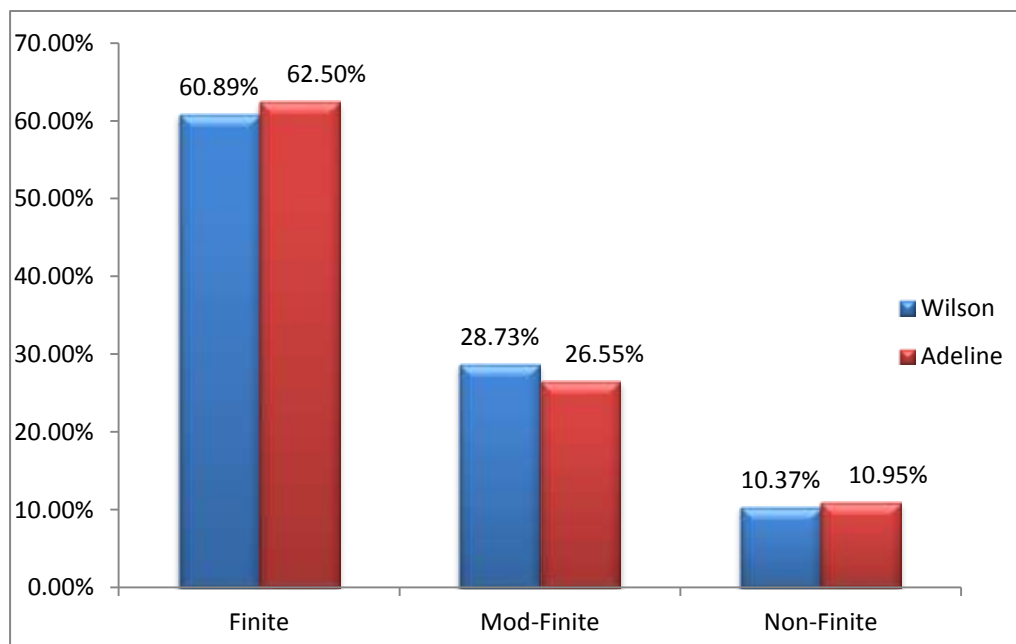


Table 5.22 Modality

In terms of transitivity, both Wilson and Adeline use mostly relational processes in the classroom. Halliday (1994: 119) explains that “relational processes are process of being... a relation is being set up between two separate entities. Relational clauses are significantly represented in both lessons. Wilson uses it

34.16% of the time and Adeline at 37.27% as indicated in Table 5.23. Relational clauses are also a regular feature in pedagogic discourse as they contribute to the scaffolding of understanding and knowledge construction.

The category of relational process is represented in the sub-classification of Relational-Attributive and Relational-Identifying in Table 5.23. Martin, Matthiessen & Painter (1997: 106) explain that “the fundamental difference between attributive and identifying is the difference between class membership (attributive) and symbolization (identifying)”. Wilson uses more Relational-Identifying at 19.89%, as compared to Adeline’s 15.53%. This suggests a predilection towards relating two different levels of abstraction, token and value, symbolically.

Adeline uses more Relational-Attributive at 21.74%, as compared to Wilson’s 14.27%. This indicates a proclivity towards relating “carrier and attribute, of the same level of abstraction, but differ[ing] in generality as member to class, subtype to type” (Martin, Matthiessen & Painter, 1997: 106). For instance, Adeline tends to use Relational-Attributive clauses such as, “We have three points” and “They are too self-centred”. In contrast, Wilson tends to formulate Relational-Identifying clauses such as “That is one of the points” and “This is not in the context of our discussion”.

In the first comparison, the choice made by Adeline using the Relational-Attributive process of “We have three points” creates a sense of solidarity and shared ownership of learning with the students. This contrasts with Wilson’s more detached and formal deictic reference of “That is one of the points”.

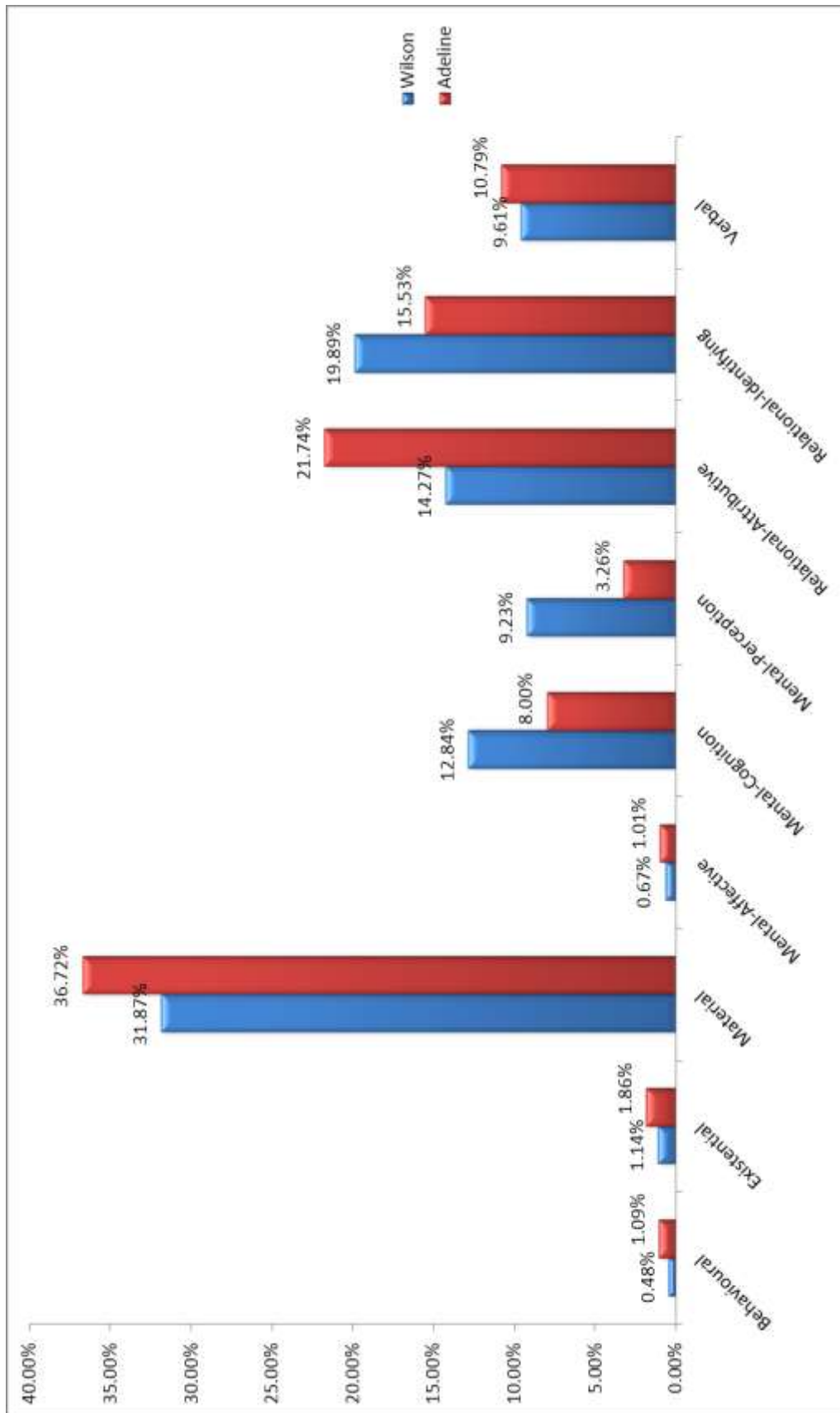


Table 5.23 Transitivity

In the second comparison, a more direct comparison is made between “they” and “self-centred” through the Relational-Attributive process. This contrasts with an equivalent recast into the Relational-Identifying process of “They are self-centred people”. The latter is probably preferred by Wilson as indicated in his representation of the statement, “Here is the reference from the text”.

The next highest process used in the two lessons is the material process. Wilson uses it 31.87% of the time and Adeline uses it slightly higher at 36.72%. The material process is associated with creating, changing, doing and acting. They represent the dynamism and action in the classroom as the focus on doing is emphasised by both teachers.

The “clauses of feeling, thinking and perceiving” are described by Halliday (1994: 114) as the mental process. These clauses are sub-classified as Mental-Affective, Mental-Cognition and Mental-Perception. Given the nature of teaching and learning, it is expected that these processes are featured prominently in the two lessons. Altogether, mental processes are used 22.74% by Wilson and 12.27% by Adeline.

Out of the three, Mental-Cognition is the highest at 12.84% for Wilson and 8.00% for Adeline. This is followed by Mental-Perception at 9.23% for Wilson and 3.26% for Adeline. The high amount of these processes are a result of Wilson’s tendency to use the words “think” and “look” respectively.

Significantly, Mental-Affective is the only type of mental process which Adeline has almost twice as much as Wilson. She uses it 1.1% of the time as

compared to Wilson's 0.67%. This is a result of Adeline's more regular use of the word "feel". For example, in her question, "Do you *feel* it will worsen?" as opposed to Wilson's "Do you *think* this problem can be resolved?" The use of the Mental-Affective invokes an emotional element into the question and encourages the students to engage with the issue, not just cerebrally but also emotively. The ability to connect with issues on a personal and emotional level as well as on the intellectual level is tacitly encouraged through the use of the Mental-Affective process. Such skills may be beneficial for students in an age where soft skills and emotional intelligence are valued.

Verbal process as described by Martin, Matthiessen & Painter (1997: 108) are "process of 'saying'; but this category includes not only the different modes of saying (asking, commanding, offering, stating) but also semiotic processes that are not necessarily verbal (showing, indicating)". Verbal processes are featured regularly in both teachers' speech, at 9.61% for Wilson and 10.79% for Adeline.

Behavioural and Existential processes are less used at under 2.00% in both lessons. Adeline seems to have slightly more of these processes than Wilson. Behavioural processes "construe human behavior" (Martin, Matthiessen & Painter, 1997: 109). Arguably, the presence of behavioural processes such as in Adeline's questions of "Why are you smiling" and later "Why are you laughing" convey a humane dimension to the professional nature of teacher-students interaction.

5.6 Summary of Wilson and Adeline’s Pedagogy

The analysis of the Lesson Microgenres, gesture, use of space and language reveal two distinct pedagogical styles embodied by Wilson and Adeline. Wilson realises an authoritative pedagogy whereas Adeline realises a participative pedagogy through what is described in this study as the construction of ‘structured informality’. This is introduced in Chapter 1 and is discussed in detail in Chapter 6.

A summary of the distinctiveness in both Wilson and Adeline’s lesson discussed earlier is presented in this section.

Wilson	Adeline
More Lesson Diversion More Lesson Initiation	Less Lesson Diversion Less Lesson Initiation
Less Lesson Closure	More Lesson Closure

Table 5.24 Categories of Lesson Microgenre Comparisons

In terms of the categories of Lesson Microgenre summarised in Table 5.24, Wilson’s lesson has a higher incidence of Lesson Diversion as compared to Adeline. They usually last longer, suggesting that Wilson takes more time to recover from these diversions. The logogenesis of the lesson also indicates that Wilson takes a longer time to arrive at the same lesson peak as Adeline due to the frequent and lengthy diversions.

Adeline has a shorter Lesson Initiation as compared to Wilson, primarily because of the extent of administration and classroom business which Wilson has to perform in the first lesson of the day. However, Adeline has a significantly longer

period of Lesson Closure which enables her to summarise and conclude her lesson appropriately. In contrast, Wilson's Lesson Closure was rather sudden and abrupt.

The sequence in the categories of Lesson Microgenre also appears more orderly in Adeline's lesson as compared to Wilson. A major reason for Wilson's more erratic sequence is his attempt to introduce new knowledge in the form of a template he developed in a Review Lesson in the Curriculum Genre. As such, a proper review of the knowledge and skills earlier taught is side-lined to teach the new template. The structuring of the lesson is important in the organisation of knowledge and skills in the lesson. From the analysis, Adeline appears to have better control over the presentation and development of the lesson as evident from the analysis of the categories of Lesson Microgenre.

Table 5.25 displays differences in the duration spent on each Lesson Microgenres realising distinct foci in both lessons. Adeline focuses more on the structure and organisation of the lesson as well as on the sequence in the presentation of skills and knowledge. This is evident in the significant time she spends on the Discourse on Greetings, Discourse on Instructions, Discourse on Homework Check and Discourse on the Issuing of Homework. However, she balances the structure with a strong rapport built with the students through her use of Discourse on Rapport-Building. Coupled with the substantially shorter time spent on the Discourse on Discipline, the exercise of overt power and authority in Adeline's lesson is mitigated.

	Wilson	Adeline
<i>Structure</i>	Arbitrary, Random Focus on Content Knowledge Less Discourse on Greetings Less Discourse on Instructions Less Discourse on Issuing of Homework Less Discourse on Homework Check	Ordered, Structured Focus on Application Question Structure More Discourse on Greetings More Discourse on Instructions More Discourse on Issuing of Homework More Discourse on Homework Check
<i>Rapport</i>	Less Discourse on Rapport	More Discourse on Rapport
<i>Higher Order Skills</i>	Less Discourse on Philosophy Less Discourse on Skills	More Discourse on Philosophy More Discourse on Skills
<i>Content Knowledge</i>	More Discourse on General Knowledge More Discourse on Content More Video-Screening	Less Discourse on General Knowledge Less Discourse on Content No Video-Screening
<i>Personal</i>	More Discourse on Personal Consultation	Less Discourse on Personal Consultation
<i>Motivation Control</i>	More Discourse on Motivation More Discourse on Discipline More Discourse on External Distraction More Discourse on Attendance	Less Discourse on Motivation Less Discourse on Discipline Less Discourse on External Distraction Less Discourse on Attendance

Table 5.25 Lesson Microgenres Comparisons

In contrast, Wilson provides less scaffolding for his lesson and does not spend much time framing the lesson and the activities. However, despite the laxity in structure, he emphasises discipline and order in the classroom as indicated by the time spent on Discourse on Discipline. The control he attempts to exert over the students is also signalled in the time spent on Discourse on Motivation, Discourse on

External Distraction and Discourse on Attendance. In relation to the Skills and Content Topics, Adeline focuses mainly on Application Question Structure as reflected by the time spent on the Discourse on Skills. This is appropriate given that this is the primary Skills & Content Topic in the Review Lesson as articulated by both Wilson and Adeline. In addition, she focuses on the Skills & Content Topic of Higher Order Thinking through her regular use of Discourse on Philosophy. As mentioned earlier, this is empowering as it trains students to be critical thinkers. It is valued in the Desired Outcomes of Education as well.

Wilson focuses primarily on the Skills & Content Topic of Content Knowledge as indicated by the long duration of time spent on Discourse on General Knowledge, Discourse on Content and Video-Screening. This is despite the espoused focus on the Skills & Content Topic of Application Question Structure he mentions in the Discourse of Learning Objectives at the beginning of the lesson.

In all, Adeline's lesson seems more typical of a regular Review Lesson. The clear structure she has in the ordering of the lesson is complemented with the rapport she builds with the students. In this, she constructs a sense of structured informality, where ideational and textual meanings in the lesson are realised in a structured manner and where interpersonal meanings are realised through choices that convey solidarity and affability with the students. Wilson's lesson, while less structured ideationally and textually than Adeline, tends towards a more overt display of power and authority in the interpersonal choices made. This emerges more clearly in the discussion on the semiotic resources of language, gesture and use of space by Adeline and Wilson.

Wilson	Adeline
<p>More Presenting Action More Presenting Action: State More Presenting Action: Material More Presenting Action: Mental</p>	<p>Less Presenting Action Less Presenting Action: State Less Presenting Action: Material Less Presenting Action: Mental</p>
<p>Less Indexical Action Less Indexical Action: Importance Less Indexical Action: Receptivity Less Indexical Action: Relation</p>	<p>More Indexical Action More Indexical Action: Importance More Indexical Action: Receptivity More Indexical Action: Relation</p>
<p>Less Representing Action More Representing Action: Participant Less Representing Action: Process</p>	<p>More Representing Action Less Representing Action: Participant More Representing Action: Process</p>
<p>More Palms-Down Gesture</p>	<p>More Palms-Open Gesture</p>
<p>More Lean Forward Position</p>	<p>Less Lean Forward Position</p>
<p>More Hands at Leg Level</p>	<p>More Hands at Waist Level</p>
<p>More Negative Attitude</p>	<p>More Positive Attitude</p>
<p>More Fast Graduation</p>	<p>More Slow Graduation</p>
<p>More Contraction of Negotiation Space Less Possibility</p>	<p>More Expansion of Negotiation Space More Possibility</p>
<p>More Single Beat More Point with Hand More Point at Students</p>	<p>More Beats More Point with Index Finger Less Point at Screen</p>
<p>More Handling of Laptop Less Handling of Notes No Handling of Visualiser</p>	<p>Less Handling of Laptop More Handling of Notes More Handling of Visualiser</p>

Table 5.26 Use of Gesture Comparisons

Table 5.26 summarises the differences in Adeline and Wilson's use of gesture. Wilson uses more Presenting Actions than Adeline. As Performative Gestures, these actions 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.

In comparison, Adeline uses more Indexical Actions and Representing Actions. 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. The intersemiosis across the range of semiotic resources is discussed in Chapter 6. Wilson tends to rest his hands by the side of his legs whereas Adeline tends to hold her hands at the waist level suggesting readiness and a sense of professionalism. The gestures made by Wilson are usually fast and is often of a single beat. In comparison, Adeline makes her gestures more slowly and almost deliberately to advance her pedagogic point, regularly with the aid of rhythmic beats for emphasis.

Students are usually the directional goals to whom Wilson points to with his hand. This usually elicits the students' prompt attention. However, the act of pointing at students is also an exercise of authority and power that Wilson carries as a teacher. This is despite his deictic gesture being moderated frequently by the option to point more generally with the hand. In contrast, Adeline usually points to the screen with her index finger and often through the visualiser. This suggests precision and focus on the lesson materials projected on the screen.

Wilson	Adeline
Less use of Authoritative Space	More use of Authoritative Space
Off Centre in Authoritative Spaces	Conventional Authoritative Spaces
More use of Supervisory Space	Less use of Supervisory Space
More Movement	Less Movement

Table 5.27 Use of Space Comparisons

The use of space through positioning and movement, as summarised in Table 5.27, indicates Adeline’s preference to stand in the authoritative spaces. This conveys a sense of professional and formality as a teacher. In contrast, Wilson tends to position himself in the various spaces in the classroom during his lesson, rather than mainly in the authoritative spaces. Even when Wilson spends time in the authoritative spaces, he has a proclivity to position himself off-centre. Altogether, Wilson’s spatial selections convey a sense of informality. This casualness appears contradictory at times to the explicit display of power and authority he exercises through choices made in the other semiotic resources.

Wilson uses more supervisory space than Adeline. In particular, he usually paces around the students during their self-directed activities. In doing that, he makes himself available and accessible to them should they have any questions. However, this is also construed as control in terms of ensuring that they are on task as he invigilates the activity through his pacing.

Overall, Wilson makes more movement in the class than Adeline. This indicates dynamism in his lesson. However, as mentioned earlier with regard to his

use of Performative Gesture, these movements, if superfluous, can be distracting and counter-productive. Adeline is more formal and conventional in her spatial pedagogy. She conveys a general sense of decorum and professionalism through her positioning in the central authoritative spaces as well as in her low use of movement.

Wilson	Adeline
Use of imperatives and High Modality to indicate power & authority	Use of adjuncts and Low Modality, Adjuncts to indicate possibility and solidarity
More Relational-Identifying More Mental Process More Mental-Cognitive	More Relational Attributive More Mental-Affective
Less Laughter	More Laughter

Table 5.28 Use of Language Comparisons

In terms of linguistic selections displayed in Table 5.28, Wilson uses more imperatives and high modality to indicate his power and authority. In contrast, Adeline prefers adjuncts and low modality to build solidarity with the students. It is also revealing that Adeline has more occurrences of laughter signifying ease and enjoyment of the students.

Wilson uses more relational-identifying clauses whereas Adeline uses more relational-attributive clauses. Wilson also uses more mental-cognitive processes as opposed to Adeline's usage of mental-affective processes. Wilson tends to represent entities through the cognitive processes. However, as discussed earlier, Adeline evokes greater affect in her linguistic choices.

In conclusion, many of Wilson's choices in gesture, language and use of supervisory space, as well as his time spent on Discourse on Discipline, realise an authoritative pedagogy. However, his choice to position himself in the different spaces in the classroom and off-centre in his use of authoritative space, his hands at rest by the side of his legs regularly, the time spent on the Discourse of Rapport Building and gestures indicating expansion of negotiation space as well as the loose ordering of the Lesson Microgenres altogether appear to contradict with the authoritative pedagogy he embodies. Perhaps these are sporadic attempts meant to reduce and mitigate the overt display of power which he makes frequently. Nevertheless, the control and the strong authority exercised coupled with the casual and informal switches occasionally result in a general ambivalence in his pedagogy.

In contrast, Adeline's lesson has a clear structure evident in the sequencing of the Lesson Microgenre. She also exerts her authority through positioning herself formally in the authoritative spaces in the classroom as well as through her professional poise of hands at waist level. However, through her gestures, she conveys a sense of openness and invitation. Her choices in language also realise interpersonal meanings that builds solidarity. This is coupled with the time spent in the Discourse on Rapport-Building and evident by the laughter in her lesson. Through this she embodies a participative pedagogy through the construction of a sense of structured informality in her lesson.

As has been reiterated, this study focuses only on one lesson of Wilson and Adeline. As such, it cannot be concluded that Adeline and Wilson use the above pedagogical style consistently across all their lessons or whether they vary their

pedagogy accordingly. Furthermore, a generalisation of what they represent, be it gender or experience, cannot be made. Nevertheless, the investigations in the two lessons present interesting observations on how contrastive pedagogies are realised through the combination of choices in a range of semiotic resources and also invite questions that can be explored with further studies.

Through the insights gained from the discussion of findings in this chapter, it is proposed that a bottom-up orientation through the intensive analysis of actual classroom data can be complementary to a top-down orientation. In fact, as discussed in Chapter 2, the recursive process of working from theory to analysis and from analysis informing theory contributes definitively to advances in the field.

CHAPTER 6

INTERSEMIOSIS IN PEDAGOGIC DISCOURSE

This chapter adopts an all-in orientation in the quadnocular perspective on multimodal pedagogic discourse, as discussed in Chapter 2. In light of the investigation on gesture, use of space through positioning and movement as well as language in Chapter 4 and 5, this chapter presents an integrative view on how the combination of semiotic resources works together effectively to realise the pedagogy in Wilson and Adeline's lessons. Redundancy and structured informality resulting from the intersemiosis in pedagogic discourse for achieving effective teaching and learning are also discussed.

6.1 Intersemiosis

As discussed in Chapter 2, the multimodal approach to pedagogic discourse is the investigation of a range of semiotic resources, beyond just language alone. In addition to that, the multimodal approach also entails exploring the interactions and interplay across the semiotic resources in the constellation of meanings made. As Iedema (2003: 31) argues "[s]emiosis is not analysed in terms of discrete building blocks or structures, but in terms of socially meaningful tensions and oppositions which could be instantiated in one or more ways".

O'Halloran (2005: 159) proposes the term 'intersemiosis' to describe "the meaning arising across semiotic choices". O'Halloran (2005) notes that intersemiosis has also been observed by Royce (1998, 2006) as "intersemiotic complementarity" where "visual and verbal modes semantically complement each other to produce a single textual phenomenon" (Royce, 1998: 26).

Lemke (1998b) notably describes the meanings arising from the combination of semiotic resources in scientific discourse as a 'multiplying of meanings'. Lemke (in press) explains that "[t]he space of semiotic meanings is multiplicative: it expands combinatorially in possibilities, only to contract the more intently to some nexus of instantial meaning in each actual multimodal sign or text". As O'Halloran et al. (2010: 17) emphasise, "[t]he meaning of cultural phenomena, objects and events...is the composite product of this combination, rather than the mere addition of one mode to another".

Hence, the 'emergent meaning' (Lim, 2004; 2005) arising from the combinational use of the semiotic resources is exponentially more complex than the meaning made by an individual semiotic resource. While this is generally recognised, the questions to be considered in intersemiosis are 1) the nexus and ways in which the meanings are made and 2) the nature and types of the meanings made in specific discourse. The first question is discussed in Section 6.2 and Section 6.3. The second question is discussed in Section 6.4, in relation to the pedagogic discourse analysed in this study.

In terms of the ways which meanings are made in intersemiosis, Baldry & Thibault (2006: 18) propose the 'Resource Integration Principle'. They explain:

Multimodal texts integrate 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.

While the Resource Integration Principle is, arguably, in operation within all multimodal texts 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 & Thibault (2006: 4) caution that "different modalities adopt different organisational principles for creating meaning". Hence, it is necessary to examine the specific semiotic resources in focus within the multimodal text and explore the unique ways in which they combine and interact in their joint co-deployment.

Matthiessen (2009) also describes the orchestration of multimodal semiotic resources as a "semiotic harmony". Matthiessen (2009: 11) observes that "[o]ne interesting – and critical- aspect of the division of semiotic labour among the denotative semiotic systems is the extent to which they operate in semiotic harmony with one another". Matthiessen (2009: 12) explains that "[f]unctionally these different semiotic systems are integrated within the context they operate in so that they can create meaning seamlessly and synergistically".

Nonetheless, like Baldry & Thibault (2006), Matthiessen (2009) acknowledges that how this is accomplished is unique to different resources. Matthiessen (2009: 23) concludes that “[t]he key question in a multisemiotic system is how the different resources for creating meaning complement one another and how the semiotic labour (the work of creating meaning in context) is divided among them”. This chapter discusses the specific ways which the semiotic resources of language and gesture interact and complement one another in semiotic harmony with regard to the lessons investigated.

6.2 Nexus in Intersemiosis

6.2.1 Contextualising Relations

The intersemiosis between the semiotic resources of language and images has been most theorised to date. Unsworth & Cleirigh (2009) argue that “[a]dvancing understanding of how images and language interact to construct meaning seems crucial in seeking to reconceptualise literacy and literacy pedagogy from a multimodal perspective”. Systems and theories have been proposed by many researchers to investigate image-text relations. Amongst them include Royce (1998, 2007), O’Halloran (2004a, 2005, 2008b), Martinec & Salway (2005), Lim (2004, 2006), Unsworth (2006b), O’Halloran & Lim (2009), Liu & O’Halloran (2009), Unsworth & Cleirigh (2009), Unsworth & Chan (2009), Daly & Unsworth (2011) and Painter, Martin & Unsworth (2011).

Lim & O'Halloran (accepted for publication) review the intersemiotic systems and mechanisms proposed by some of the above researchers. Given that the focus of this study is on language and gesture, a discussion of the previous research in image-text relations is not extensively represented here. However, insights drawn from the pioneering work in image-text relations, critically inform the theorisations and understanding of intersemiosis between the semiotic resources investigated in this study.

Time and space are integral resources, as described in Chapter 2. When a combination of semiotic selections is co-deployed, the co-instantiation in time and the co-occurrence in space of these resources contribute to intersemiosis. While both temporal co-instantiation and spatial co-occurrence are fundamental in intersemiosis, spatial co-occurrences tend to be foregrounded in static texts, such as print advertisements and textbooks, whereas temporal co-instantiations tend to be foregrounded in dynamic texts, such as in film texts and in the environment of multimodal pedagogic discourse.

Spatial co-occurrence operates on different ranks. For instance, in the case of language and images, it operates the ranks of Figure, Episode and Work, following O'Toole's (1994/2010) framework for images. Spatial co-occurrence of image and language within the same shared space on a page results in intersemiosis.

Temporal co-instantiation operates on different time scales. This is described in terms of hours, minutes, seconds and micro-seconds, following Lemke's (2000)

multiple timescales. Temporal co-instantiation of resources, such as language and gesture happening at around the same time, results in intersemiosis.

The application of principles and conceptions developed in the intersemiosis of language and images to language and gesture is performed circumspectly. This is because most of the intersemiotic systems and mechanisms theorised for image-text relations are based on spatial co-occurrences of images and language on the same page. However, gestural-text relations are based primarily on their temporal co-instantiations. Hence, not all the conceptions proposed for image-text relations can be unquestioningly applied to intersemiosis between language and gesture.

Thibault (2004) observes that language and gestures are very different semiotic resources and are organised according to different principles. Thibault (2004: 26) observes:

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. 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.

In terms of the relationship between gesture and language, Zappavigna, Cleirigh, Dwer & Martin (2010: 234) 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”. As such, Zappavigna et al. (2010: 220)

propose “using tone-group in language as co-terminous with a gestural unit”. Zappavigna et al. (2010: 219) 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”.

Zappavigna et al. (2010) build their work from Halliday’s (1985: 30) observation that “gestures are not part of the grammar, but rather additional variations by which speaker signals the importance of what he is saying”. This observation is probably directed towards gesticulations, that is, Indexical Action realising the representation of Importance and accompanying language. However, as discussed in Chapter 4 and 5, there are other types of gestures and other meanings made in gesture as well. Specifically, other meanings realised in Indexical Actions include the representations of Receptivity and Relation. In addition, Representing Actions in contextualising relationship with language also make meanings beyond just signalling the importance of the accompanying linguistic text.

In light of this, my study proposes a complementary perspective to Zappavigna et al. (2010) where intersemiosis between language and gesture is viewed from the perspective of contextualising relations. It also explores the productivity of extending selected systems developed originally for image-text relations to describe intersemiosis in language and gesture.

Thibault (2000: 362) explains that it is “on the basis of co-contextualizing relations that meaning is created”. Lim (2004: 239) proposes “contextualizing

relations as the meaningful relationship that are present between two modalities. Intersemiosis is therefore a result of the contextualizing relations between the two semiotic modalities". In this study, contextualising relations is used to describe the intersemiosis across semiotic resources in pedagogic discourse, specifically between language and gesture.

Following Thibault (2000: 325-326) and Royce (1998), Lim (2004) distinguishes two types of contextualising relations. Lim (2004: 239) explains:

In cases where the meaning of one modality seems to "reflect" the meaning of the other through some type of convergence, the two resources share co-contextualizing relations. On the other hand, in cases where the meaning of one modality seems to be at odds with or unrelated to the other, their semantic relationship is one that creates divergence or dissonance. In the latter case, the resources share re-contextualizing relations.

Developing the notion of contextualising relations further, O'Halloran (2005, 2007b) describes that mathematical discourse involves intersemiosis in the form of co-contextualising relations and re-contextualising relations. She explains that "[i]ntersemiosis creates new semantic layers where the meaning of the re-contextualized ideational relations extend beyond that possible with language... Co-contextualizing textual and interpersonal relations enable the new ideational content to be foregrounded" (O'Halloran, 2007: 95).

Re-contextualising relations create new semantic layers through the reconciliation of the divergent meanings made. This emergent meaning usually

carries new semantic layers such as irony, sarcasm, dilemma and ambivalence. Thibault (2000: 321) explains that “ideological disjunction” is resultant from “the complex, often intricate, relations of inter-functional solidarity among the various semiotic resource systems that are co-deployed”.

For communication to be successful, both semantic convergence and divergence through the combination of semiotic selections must be reconciled and ultimately serve the intent of the message. Re-contextualising relations leading to a semantic divergence that cannot be reconciled results in to ambiguity, confusion and a consequent breakdown in communication. While a possible event, this is neither typical of pedagogic discourse nor observed in the lessons investigated.

6.2.2 Intersemiotic Mechanisms

O’Halloran (2005, 2007b, 2008c) also formulates intersemiotic mechanisms “where meanings are made through choices functioning as interlocking networks” (2005: 166). They are Semiotic Cohesion, Semiotic Mixing, Semiotic Adoption, Juxtaposition, Semiotic Transition and Semiotic Metaphor. Descriptions of these intersemiotic mechanisms are in her work and are discussed in Wee (2009), Knox (2009) and Lim & O’Halloran (accepted for publication). In particular, of relevance to the intersemiosis between language and gesture, are Semiotic Metaphor and Semiotic Cohesion.

O’Halloran (1999: 348) defines a Semiotic Metaphor as “an intersemiotic process whereby a shift in the functional status of an element arises through a shift between semiotic resources”. She explains that “the new functional status of the

element does not equate with its former status in the original semiotic or, alternatively, a new functional element is introduced in the new semiotic which previously did not exist” (O’Halloran, 1999: 348).

Semiotic Metaphor is a useful conception which has been extended by others in the investigation of other image-text relations in various discourses (see, for example, Guo, 2004; Lim, 2004; Pagani, 2009 and Liu & Owyong, in press). Lim (2004: 241) argues that “[a]lthough originally proposed for the intersemiotic reconstrual of elements occurring across language, visual images and mathematical symbolism in mathematical discourse, the notion of semiotic metaphor is productive in its extension to other semiotic resources”. In this study, Semiotic Metaphor is observed in the intersemiosis between language and gesture, particularly when a linguistic entity is reconstrued as a gestural process. This is discussed with examples in Section 6.3.2.

According to O’Halloran (2008b: 453), Semiotic Cohesion is “system choices function[ing] to make the text cohesive”. The conception of Semiotic Cohesion has been usefully extended by Liu & O’Halloran (2009) with the proposal of ‘intersemiotic texture’. Their stated intent is the recognition of “a coherent multimodal message, rather than a co-occurrence of language and images” (Liu & O’Halloran. 2009: 367). They explain that “from the perspective of logogenesis, Intersemiotic Cohesion can be regarded as the ongoing process of contextualization, in which meanings are made across different semiotic resources in multimodal discourse” (Liu & O’Halloran, 2009: 385).

Liu & O'Halloran (2009) also propose the mechanisms of Intersemiotic Parallelism and Intersemiotic Polysemy to account for the meanings made through Semiotic Cohesion. Following from Hasan's (1985) work on parallelism in the texture of language, Intersemiotic Parallelism refers "to a cohesive relation which interconnects both language and images when the two semiotic components share a similar form" (Liu & O'Halloran, 2009: 372). Intersemiotic Polysemy refers "to the cohesive relation between verbal and visual components, which share multiple related meanings in multisemiotic texts" (Liu & O'Halloran, 2009: 375). This is based on Halliday & Hasan's (1975, 1985) Lexical Cohesive Relations and follows from Royce's (1998) Ideational Intersemiotic Complementarity. Liu & O'Halloran (2009: 375) explain that "Intersemiotic Polysemy results in co-contextualization relations between language and images and experiential convergence in multi-semiotic texts". While originally formulated to investigate image-text relations in chemistry discourse, Liu & O'Halloran's (2009) propositions are extended in this study to describe gestural-text relations in pedagogic discourse.

Liu & O'Halloran's (2009) intersemiotic mechanisms can also be related to Unsworth's (2006b) description of the types of ideational meanings made in intersemiosis. Unsworth (2006b: 60) discusses the "space of integration (Lim, 2004) between language and image as social semiotic systems in order to provide a theoretical description of the dynamics of interaction between language and image in meaning-making". Unsworth (2006b) describes the ideational meanings arising from the intersemiosis as Ideational Concurrence, Ideational Complementarity or

Ideational Connection. Of relevance to the intersemiosis between language and gestures are Ideational Concurrence and Ideational Complementarity.

Ideational Concurrence refers to “ideational equivalence between image and text” (Unsworth, 2006b: 60). This corresponds to, and is a likely result of, the operation of Intersemiotic Parallelism proposed by Liu & O’Halloran (2009). Ideational Complementarity refers to the “situation in multimodal texts where what is represented in images and what is represented in language may be different but complementary and joint contributors to an overall meaning that is more than the meanings conveyed by the separate modes” (Unsworth, 2006b: 62). This relates to, and is a possible result of the operation of Intersemiotic Polysemy proposed by Liu & O’Halloran (2009).

Therefore, in this study, intersemiosis between language and gesture in pedagogic discourse is described in terms of co-contextualising or re-contextualising relations through the operations of Intersemiotic Parallelism and Intersemiotic Polysemy. This results in either semantic convergence or semantic divergence. Ideational Concurrence and Ideational Complementarity are forms of semantic convergence. Ideational Complementarity can also be a form of semantic divergence that is ultimately reconciled.

6.3 Intersemiosis in Gesture and Language

6.3.1 Indexical Action and Language

In the pedagogic discourse investigated in this study, co-contextualising relations leading to semantic convergence are usually found in the co-instantiation of Indexical Action with language. As described in Chapter 4, Indexical Actions are Language Dependent Gesture where the meanings made in gesture are accessed through the meanings made in the accompanying language. The co-contextualising relations between Indexical Action and language result in semantic convergence. However, while there is a mutually reinforcing effect in the emergent meaning, it is often not simply a repetition of the same meaning made in language. As discussed in Chapter 4 and 5, there is a variety of meanings which Indexical Actions can add to the semantics in language. For instance, in the lessons investigated, many of the Indexical Actions realise the representations of Importance, Receptivity and Relation. In its co-instantiation with language, Intersemiotic Polysemy operates to construct an additional layer of semantics. This results in an Ideational Complementarity in the emergent meaning, absent from the use of language alone.

As discussed in Chapter 4, the representation of Importance is realised in the rhythmic beats of the arm. For example, when Wilson draws attention to the focus of the class discussion, he states, “What we are talking here about is accommodating bio-fuel”. The significance of this clause in orientating the discussion is accompanied by four rhythmic beats in Indexical Action realising the representation of Importance.

Likewise, Indexical Actions realising the representation of Importance are used regularly by Adeline to highlight the various important points in her lesson. For instance, this is observed when she reminds the students what to avoid stylistically in their answers to the Application Question. She remarks, “That is very ugly, very unprofessional. We don’t do that”. Her speech is co-instantiated with her gesture of six rhythmic beats of the right arm which realises the representation of Importance.

The rhythmic beats in themselves do not produce ideational semantics. However, Intersemiotic Polysemy operating in the co-contextualising relations between language and gesture brings about Ideational Complementarity in the semantic convergence. As such, the representation of Importance realised by the gestural selections signals and reinforces the importance of the ideational meanings made in language.

The gestural representation of Receptivity in Indexical Actions usually accompanies questions where a response from the student is invited. This is observed when Wilson asks a student, “So that is first [what] we have to figure out, isn’t it?” The Indexical Action instantiated by the out-stretched open palms comes into co-contextualising relations with the linguistic text. As the gesture indicates openness and invitation, Intersemiotic Polysemy operates to reinforce the question and its request for participation from the student. This produces Ideational Complementarity in the semantic convergence.

While the accompaniment of questions with Indexical Actions realising the representation of Receptivity are also observed in Adeline’s lesson, Adeline uses this

gesture regularly to accompany statements as well. For instance, this is observed when she says, “In a bit, when I go through the answers with you again, I will show you how it is done”. She instantiates the representation of Receptivity with her open palms and conveys welcome and invitation. Intersemiotic Polysemy operates in the co-contextualising relations and results in Ideational Complementarity in the semantic convergence. Through it, a sense of openness and offer is added to the meaning made in the statement. This contributes, in part, to the general observation, as well as supported by the statistical analysis in Chapter 5, that Adeline embodies a more participative pedagogy than Wilson.

The representation of Relation in Indexical Action is instantiated through the act of pointing. For instance, this is observed when Wilson points at a student and asks the question, “What do we have to do?” The linguistic text seems to address the entire class. However, his gestural selection realising the representation of Relation comes into a co-contextualising relations with the question. Intersemiotic Polysemy operates to produce specificity in the emergent meaning. Hence, the question, while addressed to the entire class linguistically, is directed at a specific student gesturally.

Similarly, in another instance, Wilson points at the whiteboard as he commands, “Pay attention here OK”. The linguistic text alone does not provide enough information on where the “here” refers. However, Intersemiotic Polysemy operates to disambiguate speech in its co-contextualising relations with the act of pointing. The deictic gesture indicates the “here”, in this case, the whiteboard, as the goal of where the students are to pay attention. As such, the combination of

semiotic selections in language and gesture results in Ideational Complementarity in the semantic convergence. This is necessary to elucidate the meanings made.

Indexical Actions can also enter into re-contextualising relations with language. An instance of this is observed in Adeline's Indexical Action of arms folded across her chest. As discussed in Chapter 4, this can connote a sense of defensiveness or protectiveness against vulnerability. However, this gesture is co-instantiated with her verbal reference to an earlier anecdote of a former student who asked her out on a date. She says, "I told you about the boy who SMSed me right, after he graduated. My husband should never see this, otherwise he won't sleep anymore." While the telling of the anecdote conveys openness and represents an invitation into her personal life, this is re-contextualised with her gestural selection of folded arms. Nonetheless, the semantic divergence is reconciled through Intersemiotic Polysemy where the emergent meaning is one of Ideational Complementarity. Her gesture is construed as a delineation of professional boundary as represented by the physical barriers of the arms, even as she metaphorically reaches out to relate to the students linguistically. Her combination of semiotic selections also contributes to the overall construction of a sense of structured informality described in Chapter 5 and discussed further in Section 6.4.2.

Hence, in terms of the relationship between Indexical Action and language, the typical mechanism at work is Intersemiotic Polysemy constructing co-contextualising relations and, sometimes, re-contextualising relations. The intersemiosis, in turn, produces Ideational Complementarity in the semantic convergence, as well as in the reconciled instances of semantic divergence.

6.3.2 Representing Action and Language

As discussed in Chapter 4, Representing Action are categorised as Language Independent Gesture and Language Correspondent Gesture. Language Correspondent Gestures are gestures that embody the Participants, Processes or Circumstances expressed in the accompanying language. Language Independent gestures can make meaning on its own without language, although they can also be accompanied by language.

Representing Action can also come into either co-contextualising relations or re-contextualising relations with language. In contrast with the intersemiosis between Indexical Action and language, which usually relies on the operations of Intersemiotic Polysemy; Intersemiotic Parallelism is in operation for some Language Correspondent Gestures. Intersemiotic Parallelism results in Ideational Concurrence in the semantic convergence.

Intersemiotic Parallelism is in operation when similar meanings are made both in language and in gesture. For instance, Adeline makes the action of flipping with her right hand when she says, “You flip through a magazine”. The co-instantiations of the linguistic and gestural selections reinforce the meanings made through the visualisation of the linguistic process “flip” in the Language Correspondent Gesture. Similarly, this is also observed when Adeline reminds the students, “Don’t quote the whole chunk of four, five lines” in their answer to the Application Question. Her verbal text “Don’t” co-instantiates with the shaking of her

right hand to signify negation. Intersemiotic Parallelism operates in the co-contextualising relations between language and gesture in both examples to achieve Ideational Concurrence in the semantic convergence. This, in turn, enhances the emergent meaning made in the combinational deployment. In the former, it accentuates the process of “flip”, which is what Adeline wants the students to do. In the latter, the visual gestural repetition of “Don’t” emphasises what they should not do in their answers. This semantic repetition also contributes to the redundancy in pedagogic discourse as discussed in Section 6.4.1.

Intersemiotic Parallelism may also result in Semiotic Metaphor as described in Section 6.2.2. An instance is observed in Adeline’s introduction to her lesson. She explains, “In the course of today’s lesson, we will go through step one to six”. She makes the Language Correspondent Gesture of oscillating both hands held at the chest level as she describes “the course of today’s lesson”. The Intersemiotic Parallelism in operation in the co-contextualising relations indicates a gestural replication of the linguistic selection of “course” in Ideational Concurrence. The resemiotization of “course” as a linguistic entity into a gestural process instantiated by the oscillating movement is a Semiotic Metaphor. Hence, it is not a simple repetition of the same meaning. This is because there is a functional shift in the status as what is represented as an entity in speech is resemiotised as a process in gesture.

Another instance of Semiotic Metaphor is observed when Wilson describes the new template he is proposing as, “This is linear and downward”. His verbal text co-instantiates with a swift downward movement of his right hand. The

Representing Action in the downward movement of the hand comes into co-contextualising relations with the linguistic text. Intersemiotic Parallelism operates to produce Ideational Concurrence in the semantic convergence. The meanings made in language are reinforced in its gestural embodiment. The Semiotic Metaphor is observed when the linguistic attribute “linear and downward” is resemiotised as a dynamic gestural process of a swift downward movement with the hand.

Continuing with his description of the template, Wilson makes a Language Independent Gesture in Representing Action. This is observed when he stops before he completes his sentence as he says, “and this is like...” However, the gap in Wilson’s speech is filled by the sideward movement of the right hand to signify a horizontal line. The co-contextualising relations between the Language Independent Gesture and the speech produce Ideational Complementarity in the semantic convergence. The emergent meaning is the understanding that the template has a horizontal line across it. In this case, the Language Independent Gesture is used to fill in insufficient or missing information from language. The intersemiotic cohesion is accomplished through the operations of Intersemiotic Polysemy to construct a coherent emergent meaning in the combination of semiotic selections.

Language Correspondent Gesture may not always replicate the same meanings in language. For instance, this is observed when Adeline makes a swift chopping gesture with her right hand as she says, “Now those of you who score below three, evaluation is missing from your answer”. In its co-instantiation with the linguistic text, the chopping action probably indicates the metaphorical line of “below three” in language. Intersemiotic Polysemy operates in the co-

contextualising relations to construct Ideational Complementarity in the semantic convergence between language and gesture. Prominence is given to the standard of below three indicated by the line embodied in gestural selection. The focus on not meeting the standards is emphasised through the gestural repetition of the line as well as in the speed and force in which the action is performed. This prominence is also consistent with the linguistic selection, where the category of students “who score below three” is foregrounded as a marked Theme in the information organisation realising textual meaning.

Re-contextualising relations between language and gesture construct semantic divergence. However, they can be reconciled through the operation of Intersemiotic Polysemy to produce Ideational Complementarity. The emergent meaning usually has new semantic layers of sarcasm or ambivalence. An instance of this is observed when Wilson makes the Representing Action of pretending to take out tissue paper from his pocket to offer a student. While the meaning of the Representing Action is an offer, this re-contextualises with the linguistic texts where he says, “How can you go toilet in first few minutes of the lesson? You need tissue also?” The gestural selection indicates an exaggerated support for the student to visit the toilet. However, the linguistic selections cast aspersions on the student’s request to go to the toilet when the lesson has barely started. The operation of Intersemiotic Polysemy reconciles the semantic divergence and produces Ideational Complementarity through the new semantic layer of sarcasm in the emergent meaning.

In terms of the intersemiosis between Representing Action and Language, both Intersemiotic Parallelism and Intersemiotic Polysemy can produce co-contextualising and re-contextualising relations. Ideational Concurrence in the semantic convergence arising from co-contextualising relations usually reinforces and enhances the emergent meaning. Semantic divergence arising from re-contextualising relations typically creates new semantic layers and is usually reconciled as Ideational Complementarity in the emergent meaning.

6.4 Nature of Intersemiosis

The specific instances of intersemiosis in the use of language and gesture by Wilson and Adeline are discussed in Section 6.3. This section explores the overall meanings made in the intersemiosis arising from the range of semiotic resources used in Wilson and Adeline's lesson. Two significant emergent meanings that contribute to effective teaching and learning in the General Paper classroom are redundancy and structured informality.

6.4.1 Redundancy

Redundancy is an emergent meaning that contributes to effective teaching and learning. It accomplishes this in different ways and on different levels in the subject General Paper.

Bateson (1973: 102-11) first proposes the notion of redundancy in his discussion on meta-communication and meta-learning. Christie (2002) also resonates with Lemke's (1995) recognition of the importance of redundancy in all semiotic activity. In particular, she reiterates his observation in "the folly of the lay view that redundant is not useful" (Christie, 2002: 158). Lemke (1984: 35) explains that "redundancy relations are two-way or symmetrical ones in the sense that two parts of the same message are redundant with each other".

Thibault (2004: 27) also explains that "all semiotic systems are based on the principle of 'meta-redundancy'. Thibault (2004: 27) describes the 'redundancy' that arises in the combination of language and gesture in context forms "a patterned relationship in which the words and gestures are redundant with each other".

In relation to pedagogic discourse, Christie (2002: 158) observes that "redundancy- or repetition, at least- is to some extent a feature of most classroom discourse". In fact, Christie (2002: 158) argues that "redundancy is pedagogically very useful because it allows revisiting the terms and their meanings by reference to several contexts, thereby extending the understanding of those meanings". Redundancy is important in the pedagogic process as it reinforces the teaching and learning in the classroom.

Redundancy is observed in many ways and forms in the lessons investigated. Redundancy can occur 1) within the same mode in a semiotic resource, such as in the spoken mode of language 2) across different modes in a semiotic resource, such

as in the spoken and written modes in language and 3) across different semiotic resources, such as in language and gesture.

The first way in which redundancy is observed is within the same spoken mode in language. For instance, the teacher may introduce a particular knowledge item at the beginning of the lesson and revisit the knowledge item again in the summary of the lesson. This situates the knowledge item in the context of other knowledge items and develops understanding.

The second way which redundancy is observed is across the spoken and visual modes within language. Redundancy is present in some of the pedagogical functions that the whiteboard serves, as discussed in Chapter 3. This includes the Reinforcement of Knowledge and the Reformulation of Knowledge.

In the Reinforcement of Knowledge, the knowledge item espoused verbally by the teacher is represented again on the whiteboard. The replication of the same words, first in the spoken mode and again in the written mode, serves to reinforce the meanings made through redundancy. Likewise, the Reformulation of Knowledge is sometimes accomplished through redundancy. Usually, responses are elicited from the students and the teacher reformulates the students' answer into the specialised jargon privileged in the discipline. This feedback can be done verbally by the teacher, following the Initiation, Response, Feedback sequence observed by Sinclair & Coulthard (1975) or through reformulating the verbal feedback in the written mode on the whiteboard. Redundancy occurs if the feedback is articulated in the spoken mode by the teacher and represented again in the written mode on the whiteboard.

This redundancy reinforces the learning of the knowledge item in the privileged terminology of the discipline.

The third way in which redundancy is observed is across semiotic resources. Redundancy occurs as part of the emergent meaning made in the intersemiosis of language and gesture. This is specific to Language Correspondent Gestures where Intersemiotic Parallelism operates to construct Ideational Concurrence in the semantic convergence. This is observed in the replication of the same meanings made in language and gesture. For instance, as mentioned earlier in Section 6.3.2, Adeline's action of shaking her right hand is a visualised gestural repetition of her linguistic use of "don't".

Redundancy can also occur on different levels in the curriculum structure. It can occur 1) on the level of a lesson in the Lesson Microgenres and 2) on the level of the curriculum in the form of recurrences in the Skills and Content Topics.

In the duration of the lesson, redundancy usually occurs in the Lesson Microgenre of Discourse of Summary of Learning. As discussed in Chapters 3 and 5, Discourse on Summary of Lesson serves an important pedagogical function of summarising and reinforcing the key learning points in the lesson. This usually occurs when the teacher reiterates the important learning points and knowledge items introduced earlier in the lesson. Through this redundancy, students revise the knowledge taught and learnt in the lesson.

Finally, beyond its occurrence within a lesson, redundancy is also observed across the curriculum in the subject General Paper. This takes the form of the

recursive and cyclical rotation of the Skills & Content Topics in the curriculum, as described in Chapter 3. As discussed, General Paper is learnt accretively. Hence, the Scheme of Work designed by the English Department usually structures the Skills & Content Topic such that there is regular revisiting and revision of specific Skills & Content Topics over the two year curriculum. Redundancy in the Skills & Content Topic occurs each time a repetition of the topic happens. Previously taught knowledge is reiterated and applied across several contexts and the learning of the skills and knowledge is reinforced.

In consideration to the usefulness of redundancy, Christie (2002: 158) argues that “[f]or pedagogical purposes, deliberately orchestrated redundancy is an important feature of the success with which the regulative register does its work”. In addition, redundancy can also be used to assess the effectiveness of the curriculum. Christie (2002: 159) explains that, “one measure of the successful unfolding and completion of a curriculum macrogenre would be the presence of logogenesis... It was in the redundant processes of application and re-application of these terms that logogenesis occurred”.

6.4.2 Structured Informality

Structured informality is another emergent meaning made in the combination of semiotic resources in pedagogic discourse. Like redundancy, it contributes to effective teaching and learning, especially in the classroom with adolescent students. This is observed in Adeline’s lesson and is described in Chapter 5.

The proposal of structured informality follows the work of Savery & Duffy (1995) and Vygotsky (1978) in the social constructivist approach to teaching and learning. Savery & Duffy (1995) argue that a teacher should structure the learning experience just enough to make sure that the students get clear guidance and parameters within which to achieve the learning objectives. However, the learning experience should be open and free enough to allow for the students to discover, enjoy, interact and arrive at their own understanding and construction of knowledge. In Systemic Functional Theory terms, structured informality is constructed in the classroom when the teacher projects a range of interpersonal meanings which is juxtaposed against an organised presentation of ideational and textual meanings in the knowledge structure of the lesson.

The ideational meanings in the classroom, as instantiated by the Skills and Content Topics in the lesson, are cogently presented in a well-structured manner. The textual meanings in the classroom are realised in the organisation of the Skills & Content Topics via well-designed stages as they unfold progressively in the Lesson Microgenres to scaffold learning. However, the interpersonal meanings in the classroom, specifically the teacher-student relationship, are kept generally informal, with overt authority and power avoided, in order to construct a collegial learning environment. Structured informality is especially pertinent at the Pre-University level, where this study is conducted, because the students are adolescents. As the Ministry of Education commissioned study in Singapore reiterates, adolescence “is a time of identity formation, of asserting independence and of changing relationships” (Ministry of Education, Singapore, 2010: 23). As such, “[t]his generally leads to

adolescents showing less deference to their teachers compared with primary school pupils” (Ministry of Education, Singapore, 2010: 24).

Hence, structured informality, with clear structure in the presentation of ideational and textual meanings in the lesson but with informal interpersonal meanings, can arguably facilitate effective teaching and learning. This is because skills and content knowledge are transmitted in a collegiate setting where the adolescent students are put at ease as a result of specific choices in the enacting of the interpersonal relationships between the teacher and students. As highlighted in the report, “the teacher-student relationship is fundamental to students’ well-being and forms the basis for effective teaching and learning, and for supporting students’ growth” (Ministry of Education, Singapore, 2010: 7).

Structured informality facilitates the achievement of formal tasks. While it is common for teachers to attempt to construct structured informality in their lessons, the differing effectiveness usually lies in the personality, pedagogical beliefs of the teachers and the profile of the students. How the teacher orchestrates the delicate combination of semiotic selections to achieve the balance in structured informality distinguishes an effective teacher from a less one.

In relation to the lessons investigated in this study, Adeline constructs a sense of structured informality in her lesson effectively. This is a result of the combination of semiotic selections she makes in the lesson. As discussed in Chapter 5, the order and progression observed in Adeline’s sequence of Lesson Microgenres as well her semiotic selections in the use of space through positioning and movement often

constructs a sense of structure, formality and professionalism. This is evident in her regular use of Authoritative Spaces with minimal distracting movements. However, a certain extent of informality is injected through interpersonal meanings made through language, such as the high use of modality and adjuncts to construct solidarity with the students, as well as through gesture, such as the use of Indexical Action to indicate openness and possibilities.

As Adeline presents clear knowledge structure in the sequencing of her Lesson Microgenres as well as conveys propriety and decorum in her use of space, she opts to infuse an occasional sense of collegiality and informality through her speech and gestural embodiment. Through the orchestration of semiotic resources, Adeline achieves her lesson objectives, encourages students' participation and brings about overall enjoyment of her lesson, as signalled by the frequent occurrences of students' laughter. A further indicator of Adeline's effectiveness is evident in her students' eventual stronger performance in the examinations.

In contrast, as discussed in Chapter 5, Wilson's Lesson Microgenres appear random and erratic. Wilson's choice to position himself in the different spaces of the classroom rather than the conventional authoritative spaces as well as his proclivity to stand off-centre in the authoritative spaces construct a less formal interpersonal relationship with the students as compared to Adeline. However, his semiotic selections in gesture and language alternate from being casual and informal to sporadic instances where he asserts his authority and displays high power in his linguistic and gestural choices. While his positioning in the classroom suggests a sense of casualness, the control exerted through his pacing, his use of language and

his gesture recontextualises the meanings he makes through his use of space. His display of power and authority through language and gesture might perhaps be negatively construed as attempts to compensate and manage the disorder ensuing from his use of space and the looser structure observed in the lesson. Coupled with a high degree of random movement in the classroom and the arbitrary sequence of lesson microgenres, Wilson's spatial selections convey a general sense of ambivalence in his pedagogy. In an unfortunate parallel, Wilson's pedagogy resonates with Kress et al.'s (2005: 26) description of another teacher whose "pedagogy realized spatially and in the teacher's movement is multiply ambivalent, and contradictory".

6.5 Summary

This chapter presents the all-in orientation to the quadnocular perspective on the multimodal classroom corpus. Beyond the analysis of individual semiotic resources of language, gesture and the use of space through positioning and movement, as demonstrated in Chapter 5, it is important to consider the intersemiosis that arises in their co-deployment in the lesson.

The nexus of intersemiosis is discussed, specifically, in terms of the relationships between the semiotic resources in intersemiosis, the mechanisms in operation as well as the types of meanings made. Theories formulated for image-text relations are extended to describe the intersemiosis between gesture and language. This includes adapting Lim's (2004) proposition of co-contextualising and

re-contextualising relations, O'Halloran's (1999, 2005, 2007) Semiotic Metaphor and Semiotic Cohesion where Liu & O'Halloran's (2009) mechanisms of Intersemiotic Parallelism and Intersemiotic Polysemy operate to produce semantic convergence and semantic divergence in the form of Ideational Concurrence and Ideational Complementarity described by Unsworth's (2006b).

The nature of meanings made in the intersemiosis in the lessons observed is also discussed. Redundancy and structured informality are two emergent meanings observed in the lesson investigated. Both redundancy and structured informality are critical in their contributions to effective teaching and learning in the classroom, particularly for the subject General Paper and for classes with adolescent students.

From the discussion in this chapter, the value of an 'all-in' orientation, which takes into account the interaction and integration of the semiotic resources in pedagogic discourse is presented. Investigating intersemiosis is the core of multimodal discourse analysis. However, this usually cannot be achieved until understanding and analysis of the meanings made by individual semiotic resources are accomplished. As Sidiropoulou (2006: 15) observes, "to tease out the multiple semiotic systems at play, and even more so to study them in coordination, is without doubt one of the most demanding – and yet rewarding – jobs in the area of multimodality".

CHAPTER 7

CONTRIBUTIONS, IMPLICATIONS AND LIMITATIONS

This chapter discusses the theoretical and methodological contributions as well as the educational and pedagogical implications arising from this study. It also outlines the limitations of this study in light of the constraints of time and space in this thesis. In addition, areas for further research and investigation are proposed for future undertakings.

7.1 Contributions

Halliday (1994: xv) declares that, “[i]n any piece of discourse analysis, there are always two possible levels of achievement to aim at: One is a contribution to the understanding of the text... the higher level of achievement is a contribution to the evaluation of the text”. This is the aspiration of my study in multimodal pedagogic discourse analysis of the lessons. However, beyond the evaluation of text discussed in Chapters 5 and 6, it is hoped that through this study, other theoretical and methodological contributions are made as well.

This study is situated within the SF-MDA approach and contributes to the development of the analytical methodology and theoretical development in this emerging field. The domain of application is multimodal pedagogic discourse and the productivity of the SF-MDA approach is demonstrated in the analysis and findings in

this study. Theoretical contributions and methodological contributions within the field of multimodal discourse analysis arising from this study are presented. In addition, educational implications from multimodal research and pedagogical implications specific to this study are discussed in this chapter.

7.1.1 Theoretical Contributions

I review of discussions and debates within multimodality in Chapter 1. Drawing from previous studies, multimodality is described as a phenomenon, as a domain of enquiry and as a theoretical approach. In relation to the different facets of multimodality, the respective challenges to paradigm, perspective and practice are also discussed. The principles behind the SF-MDA approach to multimodal pedagogic discourse, as applied in this study, are also introduced in Chapter 2.

I extend Christie's (1993, 1997, 2002) Curriculum Genre Theory in classroom discourse analysis to multimodal pedagogic discourse. The Curriculum Genre Theory is originally conceived to study the use of language in the classroom. In this study, instead of investigating language as the only semiotic resource, the Curriculum Genre Theory is extended to discuss the combination of semiotic resources in the classroom such as language, gesture and the use of space.

The Curriculum Hypergenre is proposed in Chapter 3. It is modelled in the circular layout and the hierarchical layout in Figure 3.7A-B. The Curriculum Hypergenre is based on the understanding that each Skills & Content Topic in the subject General Paper is a Curriculum Macrogenre. This follows from Christie's

(1997, 2002) reference to a specific topic in a subject as the Curriculum Macrogenre. However, Christie (1997, 2002) does not discuss the interconnectivity between the different topics within a subject. Given that in General Paper, the Skills & Content Topics are usually inter-dependent, the Curriculum Hypergenre is proposed to describe the relationships between the Curriculum Macrogenres within a subject.

I also adopt O'Halloran's (1996, 2004a) formulation of the Lesson Microgenres for the Mathematics classroom. Adapting the principles from her conceptualisations, this study proposes a set of 25 Lesson Microgenres for the General Paper classroom. The Lesson Microgenres provide the immediate contextual reference for the meanings made by the multimodal semiotic resources in a given instance of the lesson. The sequence and time spent on each Lesson Microgenre also reflect the pedagogic styles of the teachers. Furthermore, the Lesson Microgenres present a principled basis of comparisons across different lessons and by different teachers.

The Lesson Microgenres are not stand-alone conceptions. Following O'Halloran's (1996, 2004a), each Lesson Microgenre are situated within the contextual variables of field, tenor and mode. In this study, the contextual variables follow from Matthiessen's (2009) propositions, in addition to O'Halloran's (1996, 2004a) descriptions, to reflect the recent theoretical developments. The Lesson Microgenres proposed in this study are also measured along actual time in the lesson. This is a departure from O'Halloran's (1996, 2004a) use of clause time determined by language as the basis for the Lesson Microgenres.

Another proposal is the category of Communicative Gesture and Performative Gesture in Chapter 4. The notion of Performative Gesture enlarges the definition of gesture beyond that of “wilful bodily movement” (Cienki, 2008: 6) and allows for the annotation of all actions, regardless of intent. The inclusion of Performative Gestures in the analysis also addresses the subjectivity in the researcher’s bias on defining which movements are categorised as gesture. In terms of gestural-text relations, Communicative Gesture is sub-classified as Language Independent Gesture, Language Correspondent Gesture and Language Dependent Gesture. The usefulness of this classification is demonstrated in Chapter 6, where the types of gesture and their co-instantiation with language determine the distinct relationships, mechanisms, and meanings in intersemiosis.

Selected system networks for gesture are mapped in Chapter 4 as part of the proposals for functional meanings in gesture. The system networks for the various meta-functional meanings are made in accordance to the types of actions, following primarily from the work of Martinec (2000, 2001, 2004) and Hood (2007, 2011). Nonetheless, adaptations to their original systems are made.

The reasons for the adaptations include the appropriateness of their theoretical classifications to pedagogic discourse and the efficiency of applying some of the more complex dynamic systems to the intensive analysis of multimodal data corpus in this study. For instance, Martinec’s (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. It also posits that Mental Process is significant in pedagogic discourse, where ‘visible’ acts of cognition, such as

reading, viewing and considering a student's response, are regularly performed by the teacher. Systems within the dimensions of Attitude and Graduation in Interpersonal Meaning are also simplified. In addition, other aspects in gesture such as muscular tension and force are not annotated due to the complexities involved in measuring them.

Hall's (1966) work on proxemics is extended to multimodal pedagogic discourse analysis as well as Matthiessen's (2009) thesis that material distance realises socio-semiotic meanings. Hall's (1966) groundbreaking work on distance sets and the formulation of Socio-consultative Space is applied to the classroom space where the teacher is positioned in relation with the students. In Chapter 4, this space is further sub-classified into Authoritative, Supervisory, Interactional and Personal spaces. These spaces are negotiated statically through the teacher's positioning and dynamically through the teacher's movement and pacing in the classroom. The teacher's semiotic selections in positioning, movement and pacing realise what is described in this study as a 'spatial pedagogy', through which the lesson experience for the students is, in part, derived.

I have extended selected theoretical conceptions originally formulated for image-text relations to describe the intersemiosis between gesture and language. As discussed in Chapter 6, Lim's (2004) formulation of co-contextualising and re-contextualising relations for language and images is applied to account for the semantic convergence and semantic divergence between gesture and language. O'Halloran's (1999, 2005, 2007) description of Semiotic Metaphor is observed in examples of co-instantiation between gesture and language as well. In addition, Liu

& O'Halloran's (2009) mechanisms of Intersemiotic Parallelism and Intersemiotic Polysemy are usefully extended to describe the operations of intersemiotic cohesion in gesture and language. Finally, Unsworth's (2006b) categorisation of ideational meanings in intersemiosis as Ideational Concurrence and Ideational Complementarity in image-text relations is extended to gesture and language as well.

Redundancy is proposed as an emergent meaning arising from the intersemiosis in the lessons observed. The notion of redundancy in pedagogic discourse is discussed by Lemke (1995) and Christie (2002). However, the term is used to describe the redundancy within language itself. Following Thibault (2004), the notion of redundancy is extended across semiotic resources, such as language and gesture. In Chapter 6, redundancy is proposed as occurring within the same mode in a semiotic resource, across different modes in a semiotic resource and across different semiotic resources. Redundancy is also proposed to occur on the level of a lesson in the Lesson Microgenre of Discourse on Summary of Learning and on the level of the curriculum in the recursivity of the Skills & Content Topics. This study proposes that appropriate use of redundancy can lead to effective teaching and learning in the classroom, particularly for the subject General Paper.

Another theoretical contribution is the proposal of structured informality. Structured informality, as described in Chapter 6, is an emergent meaning observed in Adeline's lesson. A specific combination of semiotic choices made in the classroom is coordinated to construct a participative learning environment for students where explicit display of power dynamics between the teacher and students are managed.

Through specific semiotic choices which function to maintain a didactic structure for learning, other semiotic choices are made to mitigate the hierarchical distance between the teacher and students. This achieves a degree of rapport between teacher and students uncharacteristic of traditional authoritative classrooms.

7.1.2 Methodological Contributions

A methodological contribution in this study is the proposal of a 'Quadnocular Perspective' on multimodal discourse analysis in Chapter 2. The quadnocular perspective, which develops from Halliday & Matthiessen's (2004) 'Trinocular Perspective' is adopted in this study. The productivity of a quadnocular perspective is evident in the integrative perspective it provides on multimodal discourse. This includes the 'all-round', 'top-down', 'bottom-up' and 'all-in' orientations to the lesson data in this study.

Chapter 3 presents the all-round orientation, which situates the multimodal pedagogic discourse within its context through the discussion of resemiotization in General Paper from policy to practice and the Curriculum Genre Theory. Chapter 4 presents the top-down orientation, where theoretical systems and descriptions in gesture and the use of space, following previous studies, are proposed. They are discussed in relation to the examples from the lessons investigated. Chapter 5 presents the bottom-up orientation, which describes the approach and reports the findings from the fine-grained analysis of the lessons. Inferences on the pedagogical styles of the teachers are made with support from the empirical data presented in

the analysis. Finally, Chapter 6 presents the all-in orientation, which discusses the intersemiosis between language and gesture. This follows previous research on image-text relations. The emergent meanings of redundancy and structured informality observed in the lessons investigated are discussed in relation to their contribution to effective teaching and learning.

The proposal that the top-down orientation and the bottom-up orientation to multimodal analysis are not competing but are, rather, complementary. Beyond the integrative understanding which the quadnocular perspective offers, the adoption of both the bottom-up and top-down orientations in this study is productive. In fact, a recursive cycle of formulating analytical systems from theoretical principles and applying these theoretical apparatus to the multimodal data is useful to elicit feedback on the systems proposed. This results in stronger understanding and advancement in the methodology of SF-MDA and the field of multimodality.

Time and space are proposed as 'integral resources' in this study. The notion of an integral resource recognises the ubiquitous presence of time and space. It also differentiates them from the other semiotic resources. Following the proposal of time and space as integral resources, a diachronic and synchronic analytical view of the multimodal data is introduced in Chapter 2. The diachronic analytical view presents the logogenesis of the lesson as it unfolds in time and is contextualised within the Curriculum Genre Theory. The synchronic analytical view presents the detailed analysis from an instantiation of the multimodal selections at a specific

point in time. Intersemiosis arising from the co-instantiation of semiotic resources in time and their co-occurrences in space is discussed in Chapter 6.

I emphasize that the principle of contextualisation is central to the SF-MDA approach. This responds to criticisms that the SF-MDA approach lacks contextual considerations (see, for example, Jewitt, 2009b). As proposed in Chapter 3, the context of culture in the pedagogic discourse is discussed in relation to Iedema's (2001, 2003) notion of resemiotization. In particular, the resemiotization of educational ideology to curricular policy and to classroom practices in the subject General Paper is discussed. The context of situation in the lessons investigated is discussed in terms of the Curriculum Genre Theory proposed by Christie (1993, 1997, 2002). The theory locates the instantiation of meanings through the multimodal semiotic resources. This is achieved by situating the semiotic selections within the context of the Lesson Microgenre, Lesson Genre, Curriculum Genre, Curriculum Macrogenre and Curriculum Hypergenre. They are visually represented on the Model of Contextualisation in Figure 3.1.

The value of a detailed analysis on the multimodal data corpus is demonstrated in this study. The two lessons are analysed across the different parameters within the various semiotic selections and are intensively annotated at every one second interval. This yields valuable statistical data of dominances, trends, and patterns that are indicative of the teacher's pedagogical style in the lesson investigated. The quantitatively-based annotation and coding of the data present a sound empirical support to the observations, inferences and findings. This is discussed in Chapter 5. For instance, the extensive coding of the gestures by the two

teachers in their lessons presents empirically-driven classroom data to Martinec's (2000, 2001, 2004) and Hood's (2007, 2011) classification of gesture. The systems for gesture are described in their work, with examples from different discourses. However, the systems have yet been extended empirically and quantitatively in a detailed analysis of multimodal pedagogic discourse, similar to that performed in this study.

I also explore the possibilities offered by interactive digital media in the annotation, visualisation and analysis of the multimodal data. Multimodal studies usually involve a large corpus of data and a multimodal approach often involves time-intensive detailed data analysis across multiple dimensions and parameters. As such, manual transcription, without the aid of digital technologies, is often not viable. As O'Halloran (2009: 113) explains, "judging from the state-of-the-art in Mathematics and the sciences at the present time, multimodal analysts from the social sciences appear to have much to gain by understanding and utilizing the expanded meaning potential afforded by computer technology to further multimodal analysis theory and practice".

As described in Chapter 5, this study uses *EXCEL* for manual transcription and annotation as well as *Pivot Charts*, a program within *EXCEL*, for statistical analysis to examine patterns of dominances and tendencies. In addition, *Systemics* is used for the coding of linguistic selections in Systemic Functional Grammar. *Cytoscape*, developed specifically for research in biological sciences, is productively applied to multimodal discourse analysis to visualise the Lesson Microgenres and the teachers' use of space in the classroom.

The need for digital software designed especially for multimodal analysis is accentuated in this study. Martin & White (2005: 260) recognises that “[c]omputer-assisted automation is improving all the time... and even semi-automated work-benched make the job of coding data and analysing results easier than it has ever been before”. O’Halloran (in press) also explains the need for “interactive platforms for image and sound tracks which permit annotation of semiotic choices across layers which may be rendered to model the resultant meanings”. The use of *Cytoscape*, while demonstrating the usefulness of digital media in multimodal discourse analysis, also suggests the usefulness of an integrative software program that is especially designed for multimodal studies. This multimodal analysis software should be customised to the requirement of studies in multimodality. It should allow for easy annotation, visualisation, analysis and search and retrieval of data. It should also allow for the analysis and comparison of the repertoire of multimodal semiotic resources on one single interactive interface within the same program.

As observed by O’Halloran (2008b), developments in digital technology as well as collaborations between social scientists and computer scientists offer the promise of analytical tools which integrate the various modalities and semiotic resources to investigate dynamic texts. This will facilitate investigation in multimodal semiosis by allowing for visual modelling and annotation of metafunctional flow and semiotic selections in a multimodal discourse. Research and development on such a software is already underway by an interdisciplinary team led by Kay O’Halloran at the Multimodal Analysis Lab; and may not be that distant in reality.

7.2. Implications

Research in multimodality has repercussions on education, curriculum design and pedagogy. They are discussed as general implications arising from multimodal research. This study also offers specific pedagogical implications on teaching and learning, specifically in the General Paper classroom.

7.2.1 Educational Implications

An educational implication of multimodal research is on the construction of the classroom experience and the pedagogy. Jewitt (2007: 241) 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”. The recognition of the multimodal nature of pedagogic semiosis has consequences on the nature of curriculum content as well as on the teaching strategies. Some examples of these are discussed more specifically in Section 7.2.2.

Another educational implication of multimodality is the recognition that a combination of semiotic selections can be organised to realise a specific pedagogy. Jewitt (2008: 262) 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”. 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. Individuals are social agents who make

meanings through the use of semiotic resources. The choices, while motivated, may not always be fully explicit or conscious. Sensitisation to the range of semiotic resources available to the teacher encourages a more congruent and effective co-deployment of the resources at hand.

Making explicit the multimodal semiotic options of the teacher enables more motivated selections to realise a specific pedagogy in the lesson. This reduces irreconcilable semantic divergence which results in conflicting, and possibly confusing meanings. Multimodal research offers teachers a reflection on their use of multimodal semiotic resources so as to critique and design these aspects of their professional practice.

A related implication is that research in multimodality can fuel development in pedagogical approaches and strategies through teacher-training. Kress et al. (2005: 170) recommend an “in-service programme” to help teachers use semiotic resources more effectively in teaching and learning. Specific to Singapore, the report by the committee on Secondary Education Review and Implementation, mentioned in Chapter 1, also emphasises the importance of such teacher-training. It “recognizes that teacher capacity is crucial – teachers need to be equipped with the necessary knowledge and skills, and strengthen their social-emotional competencies in order to perform their pastoral role effectively” (Ministry of Education, Singapore, 2010: 8). The report explains that “teachers also serve as role models for the desired social-emotional characteristics in students. Therefore, it is important to provide teachers with the necessary training in social-emotional competencies, besides the skills to facilitate social-emotional learning of their students” (Ministry of Education,

Singapore, 2010: 31). As indicated in this study, the interpersonal dynamics and rapport with the students are realised through the choices in semiotic resources like language, gesture, and the use of space through positioning and movement. Sensitising the teachers to these semiotic selections through teacher-training enables them to be more effective in their projection and production of a pedagogy that is most appropriate for the class.

Multimodal research in the classroom reveals a certain inadequacy of classroom research which involves only language. Unsworth (2006b: 55) asserts that “[i]t is now widely accepted that literacy and literacy pedagogy can no longer be confined to the realm of language alone”. This recognition has “significant implications in terms of epistemology and research methodology” (Jewitt, 2008: 245). 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. Investigation into the nature of multimodal semiotic resources in the classroom offers a less impoverished understanding of the pedagogic work performed by the teacher in the classroom.

7.2.2 Pedagogical Implications

A specific pedagogical implication arising from this study is the proposal of the Curriculum Hypergenre. The model displays the inter-connectivity between the Skills & Content Topics in the subject General Paper. As discussed in Chapter 3, the Skills & Content Topics have different statuses because they share different types and

degrees of connectivity with each other. The higher order Skills & Content Topics are dependent to some extent on the foundational Skills & Content Topics, as indicated by their connections. The Curriculum Hypergenre, in the hierarchical layout, depicted in Figure 3.7B of Chapter 3, shows the foundational Skills & Content Topics such as Grammar Competency and Content Knowledge positioned below the higher order Skills & Content Topics. As the learning in General Paper is accretive and the Skills & Content Topics are taught in a recursive manner, the Curriculum Hypergenre invites an investigation into the nature of inter-connectivity between the Skills & Content Topics. It suggests that the teaching of higher order Skills & Content Topics at selected points following from, or undertaken in parallel phases, to the foundational Skills & Content Topics can be productive.

Another pedagogical implication is the importance of adhering to the generic structure determined in the Lesson Genre for effective teaching. The lessons investigated in this study are situated in the Lesson Genre of a Review Lesson. The focus of the Review Lesson is to revise the skills and content knowledge taught in previous lessons through practice, feedback of students' errors and a summary of learning. These aspects are exemplified in Adeline's lesson. The adherence to the generic structure of the Review Lesson is one contributing factor to the effectiveness of her lesson. Wilson's lesson, however, departs from the generic structure of the Review Lesson. He introduces new knowledge in his lesson in the form of a template which he devised for the organisation of the answer to the Application Question. In doing this, he has to rush through the stages of initiation, practice and review of the knowledge all within one lesson. This results in scarce opportunity for feedback and

summary of learning in his lesson. The students' uncertainty is indicated from the many questions and clarifications sought during Student Work when they were asked to apply the template. The non-adherence to the generic structure in the Review lesson is one of the contributing factors for the less effective lesson.

The third pedagogical implication stems from the observation in the logogenesis of the lessons investigated as displayed in Figure 5.4A-B in Chapter 5. The sequence of Lesson Microgenre, according to the categories of Lesson Initiation, Lesson Progress, Lesson Closure and interjected occasionally by Lesson Diversion, is helpful in structuring an orderly development of the lesson. This facilitates the teaching and learning of Skills and Content Topics in an organised manner. This is evident in the logogenesis of Adeline's lesson discussed in Chapter 5. However, when the sequence of Lesson Microgenre is disorderly and random, as observed to some extent in Wilson's lesson, the lesson appears disorganised. Likewise, as displayed in Table 5.3 in Chapter 5, the high frequency and long duration of Lesson Diversion detract the lesson from its focus. This results in a longer time needed for the lesson to achieve its peak, as observed in Wilson's lesson. The sequence of the Lesson Microgenre and the extent of Lesson Diversion are contributing factors to the effectiveness of the lesson and are useful considerations in lesson design.

The discussion of some of the specific Lesson Microgenres in the lessons observed also presents pedagogical implications. The fourth pedagogical implication focuses on the nature of discussion and questions asked in the lesson. They occur regularly in Discourse on Philosophy and Discourse on General Knowledge. Discourse on Philosophy, used frequently by Adeline, is more effective in infusing critical

thinking and questioning in the students. These skills are valued because of their correspondence to the Ministry of Education's Desired Outcomes of Education and the General Paper Syllabus as discussed in Chapter 3 and Chapter 5. In addition, a focus on Discourse on Philosophy instead of Discourse on General Knowledge promotes greater equity as the open-ended questions do not immediately alienate students who do not have the necessary background and learning. In contrast, close-ended questions in Discourse on General Knowledge only promote those students who already know the correct answers to speak up. Open-ended questions in Discourse on Philosophy encourage participation and a healthy debate on the different possible responses. Hence, it is useful for teacher to ask more open-ended questions and strategically spend more time on the Discourse on Philosophy in their lessons.

Another pedagogical implication relates to the issue of discipline in the adolescent classroom. The Discourse on Discipline in the lessons investigated provides interesting insights on effective teaching and learning. An observation in both Wilson and Adeline's lessons is that the Discourse on Discipline tends to be followed by the Discourse on Rapport-Building. The Discourse on Rapport-Building usually takes the form of light-hearted sarcasm and humour. This allows for a quick restoration of collegial interpersonal relations after the teacher has addressed the disruptive behaviour. In addition, as discussed in Chapter 5, teachers may mitigate the intensity of the disciplinary moment by addressing the class collectively for the misdemeanour. This is demonstrated by Adeline through language and by Wilson through pointing with his hand rather than with his index finger. These are effective

strategies in addressing disciplinary issues because they reduce the awkwardness in the class. The exercise of authority during the Discourse on Discipline is quickly balanced with the Discourse on Rapport-Building. The adolescent student is also not embarrassed as he is not singled out for reprimand.

The usefulness of sign-posting and summary in the lesson is also suggested in this study. The Discourse on Learning Objectives aids in the organisation of the lesson as it orientates the students to the task as well as to the Skills and Content Topics in the lesson. It also contextualises the lesson to the preceding lessons. As discussed in Chapter 5, in the Discourse on Revision, Wilson and Adeline tend to refer to the lesson notes used in the previous lesson rather than explicating the Skills & Content Topic previously taught. Overt references to the Skills & Content Topic previously may be useful in contextualising the current lesson for the student. In addition, given that more than one Skills & Content Topic is covered in a lesson, it is useful to explicitly sign-post each of the Skills & Content Topic as they occur in the lesson. This may enhance the student's organisation of their learning. Likewise, the Discourse on Summary of Lesson is an important aspect in Lesson Closure. This is demonstrated by Adeline when she requests the students to recollect the learning points from the lesson as she reformulates their verbal input on the whiteboard. This is an expedient strategy as redundancy is deployed to reinforce learning.

Implications on the use of technological resources in the classroom are also discussed. While there are functional affordances offered in the use of technology, teachers can benefit from being informed and familiar with the functional limitations as well as the manner in which the technological resources can be deployed most

effectively in the lesson. For instance, Wilson uses the laptop to project three video clips obtained from YouTube in his lesson. The distinct advantage of using videos is that they have the potential to impart detailed content knowledge with clarity and authentic examples, in a visually stimulating and multimodally engaging manner. However, one of the drawbacks of using videos is the significant time they can take to show. As discussed in Chapter 5, Video-Screening in Wilson's lesson takes up 16% of the total lesson time. Given the substantial time-investment, the manner in which the Video-Screening is structured into the lesson, the discussion on the relevant points in the video presentation and the subsequent allusions to the content in the video should be more strategic and effective. For instance, given that Video-Screening contributes mainly to the Skills & Content Topic of Content Knowledge, it can perhaps be better complemented subsequently with the Lesson Microgenre of Discourse on Philosophy rather than on the Discourse on General Knowledge.

Multimodal semiotic selections made by the teachers realise their unique pedagogy. This includes what gestures the teacher makes during the lesson and how and where the teacher stands and moves in the space of the classroom. They are exemplified in the two teachers observed. As explained in Chapter 5, Wilson's use of language, gesture and space through positioning and movement realises a more authoritative pedagogy. However, some of his inconsistent usage, fluctuating between casualness and sporadic instances of high power also adds a general sense of ambivalence. In contrast, Adeline's use of language, gesture and space through positioning and movement realises a more participative pedagogy. This is reinforced through the construction of a sense of structured informality in her lesson.

Another pedagogical implication is the value of redundancy in the lesson. As discussed in Chapter 6 and in Section 7.1.1, redundancy is productive in reinforcing and contextualising the learning for the students. This study echoes Christie's (2002) recommendation that redundancy can be designed into the lesson as well as into the curriculum for effective teaching and learning.

Similarly, the usefulness of the structured informality is proposed in this study. As discussed in Chapter 6 and in Section 7.1.1, structured informality results from specific multimodal semiotic selections and the sequence in the Lesson Microgenres. Interestingly (and not surprisingly), from the lessons observed, it is the novice teacher who is inclined to resort to overt displays of power and authority in the classroom. In contrast, the experienced teacher appears to display a sense of structured informality. The concept of structured informality in the classroom may be helpful for teachers to construct a non-threatening learning environment where students feel comfortable enough to respond and speak up within a structured progression of the lesson which is conducive for effective teaching and learning. This finding may be particularly pertinent for classrooms, such as those observed in this particular school, where the adolescent students are generally more reticent and reluctant to verbalise their opinions and participate in the lesson. Nonetheless, although it may seem to have worked well in the lesson investigated, the effectiveness of structured informality in encouraging students' active participation requires further research to be empirically verified and established as a useful concept for teaching and learning.

7.3 Limitations and Further Research

There are obvious limitations in this study, given the constraints of time and space. The limitations are discussed in terms of research focus, methodological design, theory and pedagogical application.

In terms of limitations in research focus, the most apparent is that only language, gesture and the use of space through positioning and movement of the teacher are investigated in this study. Other semiotic resources contributing to the meanings in pedagogic discourse, such as intonation in language and facial expression, are not investigated. The lesson materials, such as the students' notes, the teacher's writing on the whiteboard, the teacher's PowerPoint presentation and the video content are also not discussed.

The scope of this study is limited as the data is based on two teachers and their 90-100 minute lessons. In part, this is attributed to the extent of delicacy and depth required in multimodal studies. This is also compounded by the size of any multimodal data corpus, the rigorous annotation and the detailed quantitative analysis required. As explained in Chapter 5, the narrow focus makes 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 multimodal semiotic selections might construct very different lesson experiences for students which can either achieve or hinder effective learning in the classroom.

A limitation in methodological design is due to the analysis of language, gesture and the use of space being done on separate analytical platforms- *EXCEL*, *Cytoscape* and *Systemics*. This makes direct comparison between the resources difficult and complicated. As such, comparisons across the choices made across the different resources, for instance, along the dimensions of specific metafunctions, are not discussed.

In addition, another limitation in methodological design stems from the analyses in this study being mostly represented through the resemiotization of the data into statistics, graphs and linguistic description. Direct annotation on the images of the film and the visualisation as analysis are not performed. This direct annotation can offer alternative perspectives through the topological meanings in addition to the typological meanings in the analysis. To some extent, the graphs generated from *Cytoscape* compensate for this lack. However, its use in this study is limited to the visualisation of logogenesis of the lesson in the sequence of Lesson Microgenres and the use of classroom space by the teacher. Future studies enabled by the development of the multimodal software described in Section 7.1.2, promise to take multimodal annotation and analysis further.

The SF-MDA approach is distinctive in its intensive detailed analysis to elicit quantitative data. Given the rigorous process of annotation, the scope of the data examined is usually limited, as it is in this study. Again, with the development of the multimodal software described in Section 7.1.2, some of the processes in annotation can be automated. This will facilitate annotation of large multimodal data corpus and allows for more representative conclusions in the study

The limitations in theory comes from the fact that multimodal research is nascent and researchers hail from a range of different disciplines, such as communications, systemic functional linguistics, semiotics and interactional discourse. As discussed in Chapter 1, they also use an eclectic selection of approaches from fields such as visual arts, psychology, linguistics, sociology, anthropology and media studies. As such, there are key terminologies such as modality, semiotic resources, and media that remain contested. A specific definition of these terms is used in this study following previous work in the SF-MDA approach. Nonetheless, the usage of these terms may remain unsatisfactory and controversial to researchers from other theoretical persuasions in the field of multimodality.

The productivity of the many new theoretical propositions and proposed extensions of current theories to specific aspects of multimodal discourse, as detailed in Section 7.1.1, also need to be further investigated in subsequent studies. For instance, new proposals such as the Curriculum Hypergenre, the sub-classifications of classroom space, the notion of structured informality, while are useful conceptions in this study, require further research and development. Likewise, extension of current theories such as the adaptation of systems for gesture and the intersemiotic mechanisms originally conceived for image-text relations to gestural-text relations, while productive in this study, necessitate examination in future works as well.

In terms of limitations in pedagogical applications, findings from this study such as the notions of redundancy and structured informality as well as causal observations, for instance, the role and effect of laughter in the lesson, require

future investigation in different settings and contexts. This includes across other schools, subjects and levels. In addition, the effective use of technology, such as the integration of the video presentation into the lesson, needs to be explored further.

7.4 Conclusion

While the limitations indicate much work remains to be done, this study offers several theoretical and methodological contributions to multimodal studies. It also presents general implications on education from multimodal research as well as specific implications on pedagogy arising from this study.

With teachers being attributed as one of the success factor in students' achievements, it is worthwhile to develop deeper understanding of the pedagogic work performed by the teacher in the classroom. While former approaches and methods in classroom research remain relevant, the multimodal perspective brings into focus the repertoire of semiotic resources in pedagogic discourse.

The new paradigm of teaching and learning through multimodal lens presents a research space inviting deeper exploration and further investigation. Multimodal research offers promise and potential for classroom studies and applications.

As demonstrated in this thesis, studies on the nature of multimodal semiosis in pedagogic discourse offer viable and valuable contribution to classroom research

and practices. My thesis concludes with the hope that it has offered a perspective to what makes an effective teacher; and in so doing, inspires contemplation and action.

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APPENDIX I

The New A-Level Curriculum

BREADTH AND FLEXIBILITY

THE NEW 'A' LEVEL CURRICULUM 2006



MINISTRY OF EDUCATION

Go to www.moe.gov.sg/cpdd/alevel2006 for more information on the new 'A' level curriculum.

- Examinations
- Special programmes
- Subject combinations
- University course requirements



A NEW 'A' LEVEL EXPERIENCE

Starting from 2006, students entering Junior Colleges (JCs) and the Centralised Institute (CI) will be taking a new 'A' level curriculum. It will emphasise breadth of learning and flexibility.

The new curriculum is aimed at preparing students well for the rapidly changing world of the 21st century. Most people will change jobs at least a few times in their careers, sometimes switching to jobs in entirely new fields. What will give advantage is being able to adapt to new situations, to draw on insights from different fields, and to think on your feet.

It is in this spirit that the new 'A' level curriculum has been developed. It will emphasise multi-disciplinary learning, and enhance your capacity to learn independently. It will prepare you well for the approaches being taken in university education, and for the demands of an innovation-driven world.

The real measure of your education goes well beyond your examinations and grades. The real measure comes years later – in your courage to try the untested, your determination to overcome challenges, your willingness to stand in a team and your ability to lead. It ultimately lies in your ability to live life to the fullest.

The new 'A' LEVEL CURRICULUM will give you:

More Breadth, More Options

You will get a multi-disciplinary grounding in your 'A' level years, which is essential in a knowledge-based economy. To acquire this, you will undertake Project Work, and study at least one subject outside your area of specialisation, i.e. a **contrasting subject**. Subjects have also been redesigned and pitched at three levels of study, so you have more combinations to choose from in your subject selection.

More Focus on Thinking and Communication Skills

You will be encouraged to think critically and innovatively. You will also be able to develop your communication skills. To provide more room for these skills, content in the academic curriculum will be reduced by 10 to 15 percent.

A Holistic Education

You will have more opportunities in the non-academic curriculum to engage in activities that will help you cultivate important qualities such as initiative and leadership skills, as well as strength of character.

Your involvement in Co-Curricular Activities (CCA), the Community Involvement Programme (CIP) and other out-of-curriculum pursuits will matter. All will be described in a single 'A' level certificate, known as the School Graduation Certificate, along with your academic grades. They will also be considered by our universities under their special admission schemes.

THE NEW 'A' LEVEL CURRICULUM

The new curriculum comprises:

Life Skills

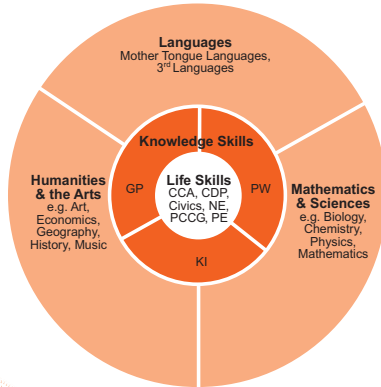
The holistic curriculum of the school, including non-academic activities, that helps develop in you the values and skills to take you through life as responsible and active citizens.

Knowledge Skills

The part of the curriculum that focuses on developing your thinking, process and communication skills. These skills are also developed through the content-based subjects described below.

Content-based Subjects

The part of the curriculum that gives you grounding in content disciplines in three different areas: Languages, Humanities & the Arts, and Mathematics & Sciences. If you are a Humanities & the Arts student, you will take at least one contrasting subject from the Mathematics and Sciences disciplines, and vice versa.



Legend:

CCA	Co-Curricular Activities
CDP	Character Development Programme
NE	National Education
PCCG	Pastoral Care & Career Guidance
PE	Physical Education
GP	General Paper
PW	Project Work
KI	Knowledge & Inquiry

A contrasting subject helps provide a broad base of learning. It prepares you for the multi-disciplinary approaches being taken in university education.

Knowledge & Inquiry (KI) gives you the opportunity to explore different methods of inquiry in fields like the sciences, the humanities, mathematics and the aesthetics. You can take KI in place of General Paper. As KI is multi-disciplinary, it can be taken as a contrasting subject for students whose main specialisation is in either the Humanities & the Arts or the Mathematics & Sciences disciplines.

3

THREE LEVELS OF STUDY

You can select subjects from three levels of study:

H1	H2	H3
Half of H2 in breadth but similar to H2 in depth.	Equivalent to current 'A' level subjects.	Subjects with diverse learning opportunities for in-depth study (e.g. advanced content, research paper, university module). You must offer the corresponding subject at H2 level.

You get more choice with the H1, H2 & H3 levels of study. It replaces the previous system of 'AO', 'A' and 'S' papers. The H1 level offers more subject options than the previous 'AO' papers. The H3 level allows for a greater range of learning and research options than the previous 'S' papers.

SUBJECTS OFFERED AT 'A' LEVEL

Students can select their subjects from the options below in 2006. More options will be added over time.

Disciplines	Subjects	H1	H2	H3
Knowledge Skills	General Paper	✓		
	Project Work	✓		
	Knowledge & Inquiry		✓	
Languages	Mother Tongue (Chinese, Malay, Tamil)	✓		
	French	✓		
	German	✓		
	Japanese	✓		
				✓
Humanities & the Arts	Art	✓	✓	✓
	Economics	✓	✓	✓
	Geography	✓	✓	✓
	History	✓	✓	✓
	Literature in English	✓	✓	✓
	History (Chinese)	✓	✓	
	History of Chinese Literature	✓		
	General Studies in Chinese	✓		
	Chinese Language & Literature		✓	✓
	Malay Language & Literature		✓	✓
	Tamil Language & Literature		✓	✓
	Music		✓	✓
	Theatre Studies & Drama		✓	✓
	Management of Business*		✓	
	French		✓	
German		✓		
Japanese		✓		
Mathematics & Sciences	Biology	✓	✓	✓
	Chemistry	✓	✓	✓
	Physics	✓	✓	✓
	Mathematics	✓	✓	✓
	Computing		✓	
	Principles of Accounting*		✓	
				✓

* Offered in Millennia Institute only.

4

SUBJECT COMBINATIONS

Generally, your subject combination is:

Norm Subject Combination

Three H2 content-based subjects
One H1 content-based subject } at least one is from a contrasting discipline

H1 Mother Tongue Language (MTL)
General Paper (GP)
Project Work (PW)

You may also offer KI in place of GP, or offer MT Language & Literature at H2 level.

The following are some examples. They are purely for illustration, and do not limit your options.

<p>If you are a Mathematics & Sciences enthusiast</p> <ul style="list-style-type: none"> H2 Physics H2 Chemistry H2 Mathematics H1 Economics (contrasting subject) H1 MTL GP PW 	<p>If you are a Humanities & the Arts enthusiast</p> <ul style="list-style-type: none"> H2 Economics H2 Geography H2 Mathematics (contrasting subject) H1 Art H1 MTL GP PW
<p>If you take KI</p> <ul style="list-style-type: none"> KI (also a contrasting subject) H2 Mathematics H2 Biology H2 Chemistry H1 MTL PW 	<p>If you take MT Language & Literature</p> <ul style="list-style-type: none"> H2 MT Language & Literature H2 Literature in English H2 History H1 Mathematics (contrasting subject) GP PW

Refer to the JCs or CI of your choice for information on the subject combinations they offer.

* You need not take H1 MTL if you have obtained a D7 or better in Higher MTL at the 'O' level.

* If you have a passion for a particular subject and the time to manage your workload beyond the norm subject combination, you can offer (a) an additional H1 or H2 subject or (b) up to two H3 subjects.

GRADING

H1 & H2
A
B
C
D
E
S
Ungraded

H3
Distinction
Merit
Pass
Ungraded

Grade points below pass. 'S' is a sub-pass.

5

ENTERING UNIVERSITY

Graduates from the new 'A' level curriculum, who apply to the National University of Singapore (NUS) and the Nanyang Technological University (NTU), will do so under a new admission framework from 2008. This framework supports the objectives of the new curriculum, and is adapted from the current admission framework. The Singapore Management University (SMU) has its own set of admission criteria.

Application

To apply to NUS and NTU, you need to have:

- At least two H2 passes
- Attempted GP (or KI) in the same sitting
- A minimum of 'S' grade in MTL

Selection

NUS and NTU will select you based on your grades in:

- GP (or KI)
- PW
- Three H2 and one H1 content-based subjects (at least one has to be a contrasting subject)

You can choose to include your MTL grade if you have done well in it. As with existing practice, some faculties have additional admission requirements, e.g. interviews, portfolios, and aptitude tests.

Relaxed Course Requirements

To give you greater flexibility, NUS and NTU have loosened the subject pre-requisites for entry into certain university courses. Refer to www.moe.gov.sg/cpdd/alevel2006 for more information when deciding your subject combination at JCs or CI.

You can get a place in university on account of your special strengths and talents under NUS' and NTU's discretionary admission scheme. The universities will consider your achievements in CCA, CIP, H3 subjects and other pursuits, independent of your other examination grades. Currently, up to 10% of students in each intake may be admitted to NUS and NTU under this scheme.

Your contrasting subject will count for university admission. This supports the intent of a broad-based education.

* Refer to www.smu.edu.sg for SMU's admission criteria.

* If you are on the International Baccalaureate (IB) programme, you will need an IB diploma to apply to university. Each faculty will consider your application based on your IB score and grades in relevant subjects.

6

APPENDIX II

General Paper Syllabus

GENERAL PAPER

HIGHER 1

(Syllabus 8806)

INTRODUCTION

1. The syllabus and examination are intended for all candidates who follow the General Paper course of study at the H1 level examination. It continues to underscore maturity of thought, independent thinking and the proficient use of language.

AIMS

2. The syllabus aims to enable candidates to achieve the following outcomes:
 - 2.1 Understand better the world in which they live by fostering a critical awareness of continuity and change in the human experience
 - 2.2 Demonstrate their understanding of the nature of knowledge by appreciating the inter-relationship of ideas from across disciplines
 - 2.3 Broaden their global outlook while enabling them to remain mindful of shared historical and social experiences both within Singapore and regionally
 - 2.4 Develop maturity of thought and apply critical reading and creative thinking skills
 - 2.5 Develop the skills of clear, accurate and effective communication
 - 2.6 Develop the skills of evaluation of arguments and opinions
 - 2.7 Promote extensive and independent reading and research.

ASSESSMENT OBJECTIVES AND SKILLS

3. The candidate will be expected to demonstrate:
 - 3.1 A broad and mature understanding of a range of subject matter from the humanities and culture as well as science and technology, including some issues of significance to Singapore. This includes the ability to:
 - acquire knowledge and understanding of diverse topic areas through extensive reading and independent study
 - analyse and evaluate issues across disciplines, showing awareness of their significance and implications for the individual and society
 - express understanding as well as critical and creative thinking through informed personal responses
 - formulate cogent arguments.
 - 3.2 Comprehension, interpretation and application of a range of subject matter. This includes the ability to:
 - comprehend the text in detail and as a whole
 - infer relevant information
 - summarise information
 - evaluate information
 - make observations of patterns and relationships
 - apply understanding and interpretation in a task derived from the text(s).
 - 3.3 Effective communication and proficient use of language appropriate to candidates at this level. This includes the ability to:
 - use the accepted conventions of spelling, punctuation and grammar
 - use a variety of linguistic styles and expressions appropriate to the context, task and audience
 - use and demonstrate understanding of a range of vocabulary
 - present information clearly.

ASSESSMENT MODE

4. Candidates are tested on two papers. Paper 1 and Paper 2 will be taken at separate sittings within the same day.

Table of Specifications

Paper	Description		Range of Marks	Weighting	Duration
Paper 1 Essay	Paper comprises a total of 12 questions Topic Areas: <ul style="list-style-type: none"> • Issues drawn from across disciplines • Issues of local interest and national concern 	Do any one out of a total of 12 questions. 500–800 words	Content: 30 Use of English: 20	50%	1 hr 30 mins.
Paper 2 Comprehension	Text comprises one or two passages. Questions cover <ul style="list-style-type: none"> • Understanding, including literal comprehension and inference (10–15 marks) • Vocabulary (5–7 marks) • Summary (8–10 marks) • Application (7–10 marks) [Total marks: 35]	Do all questions. Questions will be set on one or two different passages that allow comparative analysis. Length of text(s) will be about 1200 words in total. Line numbers will mark the text(s).	Content: Total 35 Use of English: 15 (A separate but holistic score based on the entire script.)	50%	1 hr 30 mins.
TOTAL			100	100%	3 hours

5. Paper 1: Essay

- 5.1 In this paper, 12 questions will be set to give candidates the opportunity to read extensively and express an informed, critical, creative and relevant response to issues relating to the topic areas given below. The questions will not be set in any particular order.
- 5.2 The suggested topic areas are:
- Historical, social, economic, political and philosophical topics
 - Science including its history, philosophy, general principles, current developments and applications
 - Mathematical and geographical topics
 - Literature and language
 - Arts and crafts
 - Topics of local interest and national concern.
- 5.3 Questions will not necessarily be set on every topic area. They will be general in nature and require candidates to draw on their knowledge from across disciplines as well as to show an awareness of current, global and significant local/national issues. The ability to convey a sustained and well thought-out argument will be credited.

6. Paper 2: Comprehension

- 6.1 One or two passages of continuous prose will be set. The passage(s) should allow for comparative analysis.
- 6.2 There will be a range of questions on the text(s), requiring candidates to demonstrate their ability to comprehend, explain, infer, evaluate and summarise.
- 6.3 Candidates will also be required to synthesise information and respond to concepts or ideas conveyed. They will apply their response, based on their understanding and interpretation of the text(s) as a whole, to a task derived from the text(s).

APPENDIX III

General Paper Examination Exemplar



MINISTRY OF EDUCATION, SINGAPORE
in collaboration with
UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE
General Certificate of Education Advanced Level
Higher 1

GENERAL PAPER

8806/01

Paper 1

October/November 2010

1 hour 30 minutes

Additional Materials: Answer Paper

READ THESE INSTRUCTIONS FIRST

Write your Centre number, index number and name on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **one** question.

Note that up to **20** marks out of **50** will be awarded for your use of language.

At the end of the examination, fasten all your work securely together.
All questions in this paper carry equal marks.

This document consists of 2 printed pages.



Singapore Examinations and Assessment Board

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UNIVERSITY of CAMBRIDGE
International Examinations

DC (CB) 15981/4

[Turn over

Answer **one** question.

Answers should be between 500 and 800 words in length.

- 1 Consider the view that most work these days could, and should, be done from home.
- 2 How far can an individual be held responsible for crimes against humanity?
- 3 Would it matter if all the performing arts venues in your society, such as concert halls and theatres, were closed down?
- 4 'The person who dies rich dies disgraced.' Discuss.
- 5 'The book has no place in modern society.' Discuss.
- 6 To what extent has technology had a negative impact on the skill levels of people?
- 7 Does sport merit the vast sums of money that are spent on it?
- 8 How effective are international efforts to ease the problem of global hunger?
- 9 'No politician's reputation can survive the judgement of time.' How true is this?
- 10 How important is it for people in your society to retain a sense of tradition?
- 11 'The key to good health is lifestyle rather than medicine.' How far do you agree?
- 12 Can mathematics be seen as anything more than a useful tool in everyday life?

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MINISTRY OF EDUCATION, SINGAPORE
 in collaboration with
 UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE
 General Certificate of Education Advanced Level
 Higher 1

CANDIDATE
 NAME

CENTRE
 NUMBER

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INDEX
 NUMBER

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GENERAL PAPER

8806/02

Paper 2

October/November 2010

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: 1 Insert

READ THESE INSTRUCTIONS FIRST

Write your Centre number, Index number and name on all the work you hand in.
 Write in dark blue or black pen on both sides of the paper.
 Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.
 The Insert contains the passage for comprehension.
 Note that up to **15** marks out of **50** will be awarded for your use of language.

At the end of the examination, fasten all your work securely together.
 The number of marks is given in brackets [] at the end of each question or part question.

For Examiner's Use	
Content	/35
Language	/15
Total	/50

This document consists of 6 printed pages, 2 blank pages and 1 insert.



Singapore Examinations and Assessment Board



UNIVERSITY of CAMBRIDGE
 International Examinations

Read the passage in the Insert and then answer **all** the questions. Note that up to fifteen marks will be given for the quality and accuracy of your use of English throughout this Paper.

For
Examiner's
Use

NOTE: When a question asks for an answer **IN YOUR OWN WORDS AS FAR AS POSSIBLE** and you select the appropriate material from the passage for your answer, you must still use your own words to express it. Little credit can be given to answers which only copy words and phrases from the passage.

1 In what different ways is the religious community 'in crisis' (line 2)? **Use your own words as far as possible.**

.....
.....
.....[2]

2 How does the first paragraph illustrate 'the redemptive power of food' (lines 7-8)?

.....
.....
.....[2]

3 Explain what the author means by calling fast food outlets 'ready sources of cheap refuelling' (lines 37-38). **Use your own words as far as possible.**

.....
.....
.....[2]

4 What does the author mean by 'culinary diversity' (line 40), and how is it threatened?

.....
.....
.....[2]

5 **Using your own words as far as possible**, explain the irony which the author describes in lines 54-55.

.....
.....
.....[2]

6 Why is the word 'her' (line 66) in inverted commas?

.....
.....[1]

7 Explain the author's use of the word 'even' in the phrase 'even the labelling and packaging' (line 73).

.....
.....
.....[2]

8 Which aspect of the author's argument in the last paragraph is reinforced by the quotation from J. S. Mill?

.....
.....[1]

9 Give the meaning of the following words as they are used in the passage.

Write your answers in one word or a short phrase.

- (a) remote (line 2).....
- (b) token (line 13).....
- (c) trumpeting (line 55).....
- (d) destitute (line 64).....
- (e) fraught (line 74).....

[5]



MINISTRY OF EDUCATION, SINGAPORE
in collaboration with
UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE
General Certificate of Education Advanced Level
Higher 1

GENERAL PAPER

8806/02

Paper 2

October/November 2010

INSERT

1 hour 30 minutes

READ THESE INSTRUCTIONS FIRST

This Insert contains the passage for Paper 2.

This document consists of 3 printed pages and 1 blank page.



Singapore Examinations and Assessment Board

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UNIVERSITY of CAMBRIDGE
International Examinations

DC (SJF5568) 15861/7

[Turn over

Patricia O'Sullivan considers the place of food in the modern world.

- 1 In Isak Dinesen's story "Babette's Feast", a tiny religious community leading a spartan existence in a remote corner of Norway in the 1880s is in crisis: its ageing, dwindling numbers harbour deep-seated grudges and spread slanders about each other. But during the course of a meal to celebrate the centenary of their founder's birth a transformation occurs. Although they are accustomed to a meagre, unchanging diet of bread and fish, their servant Babette cooks them a uniquely sumptuous meal, at the end of which dissension is quite forgotten and a new harmony is established. Such can be, at least in fiction, the redemptive power of food. 5
- 2 Food has always played a significant role in religions, whether through feasting, offering, or fasting, all of which feature either the inclusion or prohibition of certain foodstuffs. Such ingredients are often prepared in a time-honoured way, established when preservation techniques were rudimentary. In feasting, the participants celebrate an event or a life; on other occasions, a portion of the food is offered to the deity as a token of gratitude or appeasement; other faiths feature fasting as an act of atonement, self-denial or compassion, where one overcomes the physical world and concentrates on the spiritual, or actively shares in the suffering of others. For whatever purpose, all such communities are united and strengthened through the food they eat and the eating patterns and behaviours which accompany it. Eating the same food establishes a sense of community, making it seem an extended family in which the traditional foodstuffs evoke memories of other times and places crucial to the participants' creeds and cultures. On a more everyday level, the act of a family eating together echoes this, and can reinforce links and promote cohesion, where even the shape of the table and the eating arrangements can be visible signs of status and hierarchies. 10
15
20
- 3 In many of today's homes, however, the television and not the dining table is more often the hub of eating activity as the family meal comes under pressure from the pace of modern life and its attendant demands. In an ever-increasing number of families both parents go to work, undermining in two ways the former prevalence of preparing and eating meals at home. Firstly, more women, on whom the burden of domestic labour has traditionally fallen, are now entering the work force and no longer feel obligated by custom or culture to cook when they return home, and so spending on takeaways or pre-prepared meals has increased greatly. Secondly, there is now far more eating out at fast food outlets, a societal shift driven partly by the demands of children, who have been targeted by the manufacturers' advertising campaigns with merchandise and offers associated with areas of young people's interest, such as sport, music and films. Parents, perhaps feeling guilty about working such long hours, often find it hard to resist the temptation to treat their children to a meal there. And when these same children themselves become teenagers, their social lives are also often busy and frenetically-paced, and fast food outlets provide ready sources of cheap refuelling, as well as being places for the like-minded to congregate. 25
30
35
- 4 The spread of these multi-national brands threatens local long-established businesses, and culinary diversity is diminished. Not only that, but health concerns have arisen about the quality of the food itself, along with the claim that it is linked with the rise in levels of obesity. This is not, as one might think, a purely Western phenomenon: diets once held up as models of healthy living, such as the Japanese and Chinese, are becoming less popular in the light of the perception that the Western diet is synonymous with affluence and status. We now see a much greater demand in these countries for global fast food brands, which are much more red-meat-centred, and a corresponding rise in their own obesity levels. However, surely other factors contribute to the problem of obesity: an increasingly sedentary lifestyle based around home entertainment systems; ever greater reliance on cars; a corresponding decrease in levels of exercise and engagement in sporting activities. All of these help to create a culture of spectating rather than participating. 40
45
50

- 5 One of the areas in which we are increasingly spectators and not participants is cooking. Babette, fortunately, was once a revered chef in Paris. For the rest of us, the loss of many of our traditional kitchen skills has led to the popularity of the cookery programmes which proliferate on our screens. The book accompanying the series will feature prominently in bookshops, where it will jostle for space, ironically, with the book trumpeting the latest diet. This book will usually feature a female pop-culture celebrity confessing excess, describing the path to transformation and revealing the state of bliss now attained. The effects of too much food, it is claimed, can be easily reversed by a swift diet, thereby producing the contemporary ideal of feminine beauty – thinness – despite other eras and cultures decrying it as evidence of low status or even neglect.
- 6 There are other ways in which Babette's calorie-heavy feast seems at odds with the modern world and its concerns. Babette was only able to stage this unique event because she had won a huge sum in a lottery, all of which she spent on the one meal as a thank you to the two old sisters who took her in when she was destitute. No expense was spared: the ingredients, including a live turtle, were shipped hundreds of miles. If you were to recreate this meal today – and you can find 'her' recipes online – consider its carbon footprint: transporting food great distances instead of using locally-sourced products adds markedly to global warming. And that turtle: it is an endangered species, as are many of our foods from the seas, like shark's fin. As for the meat course, has it come from an animal cruelly raised? Is any of the food chemically modified in some way (in extreme cases even adulterated, leading to major health scares), to make it last longer or to enhance flavour? Have the people who produced the ingredients been paid a fair wage for their labours? And even the labelling and packaging – are they accurate, and then recyclable?
- 7 Unlike in Babette's day, the simple act of buying food can now seem fraught with issues – but just how strictly do you want to set your moral boundaries when it comes to what you eat? After all, you, not the experts, have the final say. As J. S. Mill, the Victorian philosopher, wrote: "Over his own body and mind, the individual is sovereign."

APPENDIX IV

General Paper Scheme of Work

OVERVIEW OF CURRICULUM STRUCTURE FOR J1 2009

Week	Content Focus	Skills Focus (P1)	Skills Focus (P2)	Assessment	Owners
Term 1					
Wk 1-3	No school for J1				
Wk 4	Orientation Week				
Wk 5		Mass Lecture → Introduction to GP – Syllabus Outline – Format of Papers – Brief Overview of Content Modules			Jiasui Azah Shirley Lili
Wk 6-7	Topics: – Social Institutions (Bridging Module) [◇] – Mass Media [◇] [◇] <i>Concept of Modernity should be introduced briefly</i> [◇] <i>To incorporate aspects of Popular Culture & Arts where applicable</i>		1. Tuning in: – Reading with a Purpose – Providing a Response 2. Reading Skills: – Understanding structure of the text (Burger Model) – Text Analysis (Intention, Attitude & Tone) 3. Forming an Evaluative Response P2 Skills: – Literal Questions – Extended Vocabulary		
Wk 8-9					
--	Term 1 Holiday Assignment: 1. Formative Assessment – Research 2. P2 Practice				
	Holidays: Week 3 → Chinese New Year (26/01/09 – 27/01/09) [Celebrations Week 2 (23/01/09)]				

Week	Content Focus	Skills Focus (P1)	Skills Focus (P2)	Assessment	Owners
Term 2					
Wk 1-5	<p>Basic P1 Skills:</p> <ul style="list-style-type: none"> - Question Analysis of Different Question Types - Generating Possibilities and Planning using Viewpoint Continuum (CLSPERM, ICNG, etc.) - Line of Argument & Introduction - Paragraph Development - Conclusion <p>Topics:</p> <ul style="list-style-type: none"> - Family, Youth & the Aged - Education - Singapore Concerns^o 	<p>*Teachers to do P2 practice on alternate weeks, with response element emphasized throughout.</p>	<p>Wk 5: TCA1 – Essay Planning & Introduction (1h)</p>		
Wk 6-10	<p>^oTo consider content modules already covered in greater detail within the Singapore context</p>		<p>P2 Skills:</p> <ul style="list-style-type: none"> - Contextual Clueing - Literary & Figurative Questions - Summary 	<p>Wk 9: TCA2 – P2 SAQs + Summary (1h)</p> <p>Wk 10: Content Quiz</p>	<p>Shirley Hannah</p>
--	<p>Ongoing:</p> <ol style="list-style-type: none"> 1. Formative Assessment Essay 				
--	<p>Holidays:</p> <p>Week 3 → Good Friday (10/04/09) Week 6 → Labour Day (01/05/09)</p>				

Week	Content Focus	Skills Focus (P1)	Skills Focus (P2)	Assessment	Owners
Term 3					
Wk 1-4	<p>Topics:</p> <ul style="list-style-type: none"> - Crime & Punishment - Prejudice, Discrimination & Rights - Poverty - Globalisation[◇] 	<p>Advanced P1 Skills:</p> <ul style="list-style-type: none"> - Review of P1 skills → Refining Introductions → Transitions, SA & OA → Refining Conclusions - Other Essay Structures 	<p><i>*Teachers to do P2 practice on alternate weeks.</i></p>	<p>Week 3: Common Test</p>	
Wk 5-10	<p>[◇] <i>Tutors to review previously covered modules in both global and Singapore context</i></p>	<p><i>*Teachers to do P1 exercises based on students' needs.</i></p>	<p>AQ:</p> <ul style="list-style-type: none"> - Question Analysis - Identifying appropriate claims - Responding to and evaluating the claims 	<p>Week 7: TCA3 – Full P2 + simple AQ (1.5h)</p>	
	<p>Term 3 Assessment:</p> <ol style="list-style-type: none"> 1. Common Test to take place in Week 3 (Tentative) → Full P1 + P2 (without AQ) 2. Final draft of Formative Assessment Essay to be submitted by end of Term 3 Week 10 			<p>Week 10: Content Quiz</p>	<p>June Eleen</p>
	<p>Holidays: Week 7 → National Day School Holiday (10/08/09) [Celebrations Week 6 (07/08/09)]</p>				

Week	Content Focus	Skills Focus (P1)	Skills Focus (P2)	Assessment	Owners
Term 4 – Revision					
Wk 1-2	Intensive Promotional Exams Preparation				
Wk 3-4	Promotional Examinations				
Wk 5-7	Topic: – The Study of Sport – Popular Culture [∅] – The Arts [∅] – History & Modernity [∅] ∅ To be covered in more specific detail	Promotional Examination Review			

Common Test Team (Deadline: End Term 2)

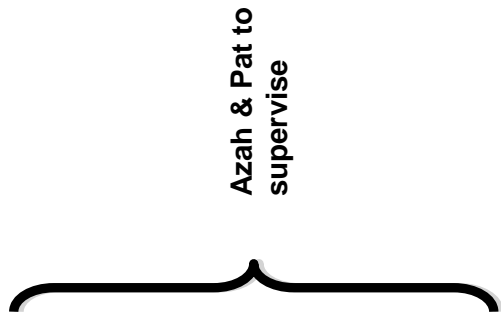
Coordinator: Shirley
 Paper 1
 Eileen
 Chng

Paper 2
 Mr Goon
 CK

Promotional Examination Team (Deadline: Beginning Term 3)

Coordinator: Jiasui
 Paper 1
 Lili
 June
 Zhong Xiang

Paper 2
 Joy
 Angie
 Hannah



Azah & Pat to supervise

4. Relief

- a. In the event when you are on MC, please inform Jiasui (97992528) *before 7am*, so that arrangements can be made.
- b. As far as possible, please give detailed instructions to the relief tutor.
- c. For relief during courses & long-term leave, please inform Jiasui *at least one week* beforehand, so that relief tutors can be rostered and briefed.

5. Lesson Plans

- a. Lessons to be planned 2 weeks before they are conducted.
- b. Lesson plans to be submitted fortnightly to respective 'RO's.
- c. Please include page references when using textbooks and/or additional worksheets (if any).

ENGLISH DEPARTMENT
GENERAL PAPER
OVERVIEW OF CURRICULUM STRUCTURE FOR J2 2009

Content Focus		Skills Focus	Assessment /Resources Owners
Term/ Week	Term 1 – Science and Technology		
W1-2	<p>2008 IN REVIEW</p> <ul style="list-style-type: none"> -To focus on the key global and local events of 2008. - To recap topic – Poverty/ Globalisation 	<p>Diagnostics – At tutors’ own discretion</p>	
W3-7	<p>INTRODUCTION TO SCIENCE AND TECHNOLOGY</p> <ul style="list-style-type: none"> -The key terms -The main controversies <p>DIFFERENT AREAS OF SCIENCE AND TECHNOLOGY</p> <ul style="list-style-type: none"> -Science and Religion -Science and Crime -Science and Environment -Science and Medicine -Science and Society 	<p>PAPER 2 Question Analysis and Tackling Literary Questions</p> <ul style="list-style-type: none"> -Inferential, figurative, tone, style, attitude and intention questions <p>PAPER 1 – (REVIEW AND PRACTICE)</p> <ol style="list-style-type: none"> 1. Question Analysis (Types of questions) 2. Line of Argument <ul style="list-style-type: none"> - Recap skills - deriving line of argument from viewpoint continuum. - Refining the line of argument through exposure to different approaches to arguments <p>NOTE: Tutors may want to highlight “only-factor” and “extreme” view questions that were taught in J1</p> <ol style="list-style-type: none"> 3. Essay Structures <ul style="list-style-type: none"> -Recap structures for different question types -Introduction to structures for absolute questions and other complex question types. <p>PAPER 2 Application Question</p> <ul style="list-style-type: none"> -Recap AQ skills and requirements -Exposure to different AQ types -Crafting a Response for the AQ 	<p>By Wk 5 TCA 1 P2 (2005 A-Levels) <i>Partial Paper, everything except AQ</i></p> <p>By Wk 8 TCA 2 P1 (2005 A-Levels)</p>

W8	REVISION OF CONTENT , with focus on application of content to essays and AQ			Content Test: Caroline & Grace
W9	CONTENT TEST AND FEEDBACK	(Resources: Skills and Content Textbooks)	<u>By Wk 9</u> Content Test	
Mar Break				

Term/ Week	Content Focus	Skills Focus	Assessment	Assessment /Resources Owners
Term 2 – Politics				
W1-9	<p>POLITICS</p> <ul style="list-style-type: none"> -Introduction to different political systems -Focus on regional conflicts -Terrorism and Genocides -Conflicts (Wars) -Role of global organisations <p><i>NOTE: Tutors to revisit topic on Globalisation and integrate it with the teaching of politics by discussing the macro view of current world situation and the trends and consequences of it.</i></p>	<p>PAPER 2</p> <ul style="list-style-type: none"> -Further revision on question types -Summary and AQ skills -Intensive Practice (2006 Prelims, and CommonTests) <p>PAPER 1</p> <ul style="list-style-type: none"> -Developing good introduction and conclusion -Paragraph development -Developing the personal voice in writing -Model Essays -Fallacies <p>TERM 2 RESOURCE BOOK</p> <p>Compilation of 2006-2008 Prelims and Common Tests:</p> <ul style="list-style-type: none"> - Based on skills sets <ul style="list-style-type: none"> o P1: questions to be categorised by topics; o P2: questions to be categorised according to question types - Approximately 5 sets of full papers 	<p><u>By Wk 3</u> TCA 3 P1 (2006 A-Levels)</p> <p><u>By Wk 7</u> TCA 4 P2 (2006 A-Levels)</p> <p><u>By Wk 9</u> Content Test</p>	<p>Content Test: Weizhen & Ravin</p> <p>Resource: CT Setting Team</p>
W10	COMMON TEST PAPER 1 AND 2 (SET IN-HOUSE)			
June Break	CT Setting Team			

Term/ Week	Content Focus	Skills Focus	Assessment	Assessment /Resources Owners
Term 3 – Singapore Concerns Intensive Revision				
W1-4	<p>SINGAPORE CONCERNS</p> <ul style="list-style-type: none"> -Economic --Population - Social cohesion -Geopolitical and Regional -Politics and the Singaporean Identity <p><i>NOTE: Tutors to revisit Globalisation and to integrate it with the examination of National Concerns. Move from the macro view of the world to assess how Singapore is responding to the changes.</i></p>	<p>CHALLENGES AND CONCERNS</p> <p>PRACTICE PAPERS FOR P1 AND P2 (2007 and 2008 – Prelims and Common Tests)</p> <p>TERM 3 RESOURCE BOOK Compilation of 2006-2008 Prelims and Common Tests: - Approximately 10 sets of full papers</p>	<p>By Wk 4 Content Test (consolidation of the 3 topics)</p>	<p>Content Test: Joey, Kim & Mr Chan</p> <p>Resource: Prelims Setting Team</p>
W5-6	<p>REVISION, DRILL & PRACTICE</p>	<p>PRACTICE PAPERS FOR P1 AND P2 (2007 and 2008 – Prelims and Common Tests and 2007 A-Levels)</p>		
W7-10		Prelims 2009		Prelims Setting Team
Sept Break				

Term/ Week	Content Focus	Skills Focus	Assessment	Assessment /Resources Owners
Term 4 – Intensive Revision				
W1-2		POST PRELIM ANALYSIS		
W3-5	<p>PRACTICE PAPERS FOR P1 AND P2 (2008 and 2009 – Prelims and Common Tests)</p>		<p>Wk 4 Mock Exams (2008 A-Levels)</p>	

Notes:

- Tutors are free to toggle between Paper 1 & Paper 2 Skills at their own discretion according to classes' needs
- Tutors to focus on Remediation and Language: Grammar/Vocabulary Building.
- Content Tests set by respective Assessment Owners as shown
- Preparations for TCAs to be supervised by **Felicia**
- **Pat & Felicia** to oversee Common Test & Prelims Setting Teams (*Timeline to be provided*)




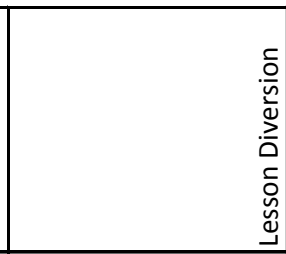
Prepared by YYL

Proposed Assessment Teams 2009

- 1) Science & Technology Content Test: Caroline and Grace
 - 2) Politics & Conflicts Content Test: Weizhen & Ravin
 - 3) Consolidated Content Test: Joey, Kim & Mr Chan
- Content Tests to comprise 'fill-in-the-blanks'/short answer questions & AQ-style response questions
- 4) Common Test 2009:
 - Weizhen*
 - Siang Jiun
 - Caroline
 - Kim
 - Mr Chan
 - 5) Prelims 2009:
 - Felicia*
 - Rosalind
 - Grace
 - Ravin
 - Joey
 - Yvonne

APPENDIX IV

Annotation Exemplar for 12 seconds of Wilson & Adeline's lesson

	Linguistic Transcription	Seconds	Lesson Stage
	then good on you	310	Lesson Diversion
	Ok	311	Lesson Diversion
	So far some of you have come to look for me	312	Lesson Diversion
		313	Lesson Diversion






Lesson Microgenre	Phenomenal Domain	Socio-Semiotic Process	Status	Contact	Affect
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative

Distance	Semiotic Resource	Medium	Modality	Directionality of Gesture
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Back
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Back
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Back

Description of Hand	Hands Level	Use of Hand	Contact with Object	Types of Action	Presenting Action Process
Check Handphone	Waist	Both Hands	Handphone	Presenting	Material
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x

Representing Entity	Indexical Representation	Attitude	Engagement	Graduation	Pointing	Beat
x	x	x	x	x	x	0
x	MP: Authority	Positive	Contraction	x	x	0
x	MP: Authority	Positive	Contraction	x	x	1
x	MP: Authority	Positive	Contraction	x	x	1

Positioning	Gest & Lang	Transitivity	Mood
Classroom Front Centre	x	x	x
Classroom Front Centre	x	x	x
Classroom Front Centre	Dependent	Material	Finite
Classroom Front Centre	Dependent	x	x

	Linguistic Transcription	Seconds	Lesson Stage
			
	While others have not come	314	Lesson Diversion
			
			
	And er	317	Lesson Diversion


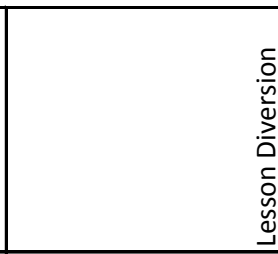
Lesson Microgenre	Phenomenal Domain	Socio-Semiotic Process	Status	Contact	Affect
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative

Distance	Semiotic Resource	Medium	Modality	Directionality of Gesture
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Back
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Side
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Side
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Side

Description of Hand	Hands Level	Use of Hand	Contact with Object	Types of Action	Presenting Action Process
Clasped	Waist	Both Hands	x	Indexical	x
Side	Legs	Both Hands	x	x	x
Side	Legs	Both Hands	x	x	x
Side	Legs	Both Hands	x	x	x

Representing Entity	Indexical Representation	Attitude	Engagement	Graduation	Pointing	Beat
x	MP: Authority	Positive	x	x	x	0
x	State	x	x	x	x	0
x	State	x	x	x	x	0
x	State	x	x	x	x	0

Positioning	Gest & Lang	Transitivity	Mood
Classroom Front Centre	x	Material	Finite
Classroom Front Centre	x	x	x
Classroom Front Centre	x	x	x
Classroom Front Centre	x	x	x

Linguistic Transcription	Seconds	Lesson Stage
	318	Lesson Diversion
I don't know	319	Lesson Diversion
cant force you to study	320	Lesson Diversion
	321	Lesson Diversion





Lesson Microgenre	Phenomenal Domain	Socio-Semiotic Process	Status	Contact	Affect
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative
Discourse on Discipline	Disciplinary Matters	Enabling	Highly Unequal	Distant	Negative

Distance	Semiotic Resource	Medium	Modality	Directionality of Gesture
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front

Description of Hand	Hands Level	Use of Hand	Contact with Object	Types of Action	Presenting Action Process
Side	Legs	Both Hands	x	x	x
Side	Legs	Both Hands	x	x	x
Side	Legs	Both Hands	x	Indexical	x
Side	Legs	Both Hands	x	Indexical	x

Representing Entity	Indexical Representation	Attitude	Engagement	Graduation	Pointing	Beat
x	State	x	x	x	x	0
x	State	Positive	Contraction	x	x	0
x	MP: Authority	Positive	Contraction	x	x	0
x	MP: Authority	Positive	Contraction	x	x	0

Positioning	Gest & Lang	Transitivity	Mood
Classroom Front Centre	x	x	x
Classroom Front Centre	x	Mental-Cognit	Mod-Finite
Classroom Front Centre	x	Material	Mod-Finite
Classroom Front Centre	x	x	x

Linguistic Transcription	Seconds	Lesson Stage
	<p>Because the focus of today's lesson is on AQ</p> <p>355</p>	<p>Lesson Progress</p>
	<p>In reading the VJC passage ok</p> <p>356</p>	<p>Lesson Progress</p>
	<p>357</p>	<p>Lesson Progress</p>
	<p>358</p>	<p>Lesson Progress</p>

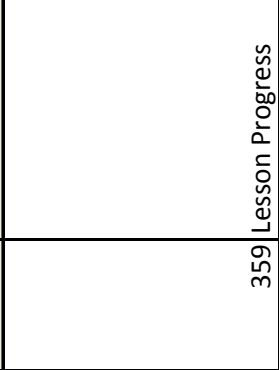


Lesson Microgenre	Phenomenal Domain	Socio-Semiotic Process	Status	Contact	Affect
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral

Distance	Semiotic Resource	Medium	Modality	Directionality of Gesture
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front

Description of Hand	Hands Level	Use of Hand	Contact with Object	Types of Action	Presenting Action Process
Push bottle away	Waist	Left Hand	Bottle	Presenting	Material
x	Chest	Left Hand	x	Indexical	x
x	Chest	Left Hand	x	Indexical	x
x	Chest	Both Hands	x	Indexical	x

Representing Entity	Indexical Representation	Attitude	Engagement	Graduation	Pointing	Beat
x	x	x	x	x	x	0
x	MP: Attention	Positive	Medium	Contraction	x	1
x	MP: Attention	Positive	Medium	Contraction	x	1
x	MP: Attention	Positive	Medium	Contraction	x	1

Positioning	Gest & Lang	Transitivity	Mood
Behind Teacher's Desk	x	Relational: Intensive	x
Behind Teacher's Desk	Dependent	Mental: Cognition	Non-Finite
Behind Teacher's Desk	Dependent	x	x
Behind Teacher's Desk	Dependent	x	x

Linguistic Transcription	Seconds	Lesson Stage
	359	Lesson Progress
<p>In the course of today's lessons</p>		
	360	Lesson Progress
<p>We will go through Step one to six</p>		
	361	Lesson Progress
	362	Lesson Progress

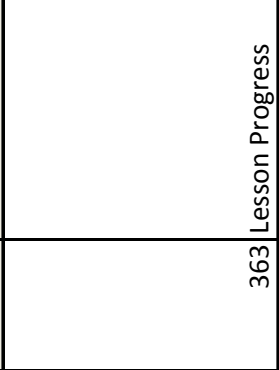
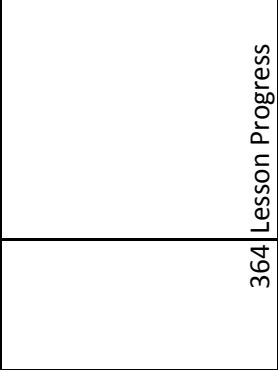
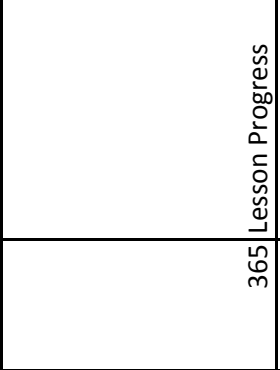
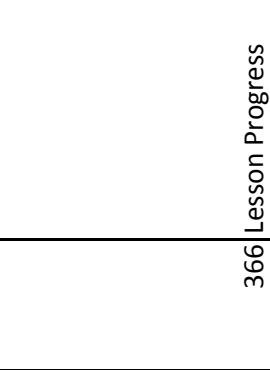
Lesson Microgenre	Phenomenal Domain	Socio-Semiotic Process	Status	Contact	Affect
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral

Distance	Semiotic Resource	Medium	Modality	Directionality of Gesture
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front

Description of Hand	Hands Level	Use of Hand	Contact with Object	Types of Action	Presenting Action Process
Oscillating	Chest	Both Hands	x	Representing	x
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x

Representing Entity	Indexical Representation	Attitude	Engagement	Graduation	Pointing	Beat
Circumstances: Course	x	Positive	Medium	Contraction	x	2
x	MP: Attention	Positive	Medium	Contraction	x	1
x	MP: Attention	Positive	Medium	Contraction	x	1
x	MP: Attention	Positive	Medium	Contraction	x	1

Positioning	Gest & Lang	Transitivity	Mood
Behind Teacher's Desk	Correspondent	x	x
Behind Teacher's Desk	Dependent	Material	Finite
Behind Teacher's Desk	Dependent	x	x
Behind Teacher's Desk	Dependent	x	x

Linguistic Transcription	Seconds	Lesson Stage
	363	Lesson Progress
	364	Lesson Progress
	365	Lesson Progress
	366	Lesson Progress

which I briefly discussed in the previous lesson

And err

Lesson Microgenre	Phenomenal Domain	Socio-Semiotic Process	Status	Contact	Affect
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral
Discourse on Learning Objectives	Subject Matters	Expounding	Unequal	Distant	Neutral

Distance	Semiotic Resource	Medium	Modality	Directionality of Gesture
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front
Socio-Consultative	Language, Gesture, Use of Space	Spoken & Written	Audio-Visual	Front

Description of Hand	Hands Level	Use of Hand	Contact with Object	Types of Action	Presenting Action Process
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x
Clasped	Waist	Both Hands	x	Indexical	x

Representing Entity	Indexical Representation	Attitude	Engagement	Graduation	Pointing	Beat
x	MP: Pensive	Positive	Medium	Contraction	x	1
x	MP: Pensive	Positive	Medium	Contraction	x	1
x	MP: Pensive	Positive	Medium	Contraction	x	1
x	MP: Pensive	Positive	Medium	Contraction	x	1

Positioning	Gest & Lang	Transitivity	Mood
Behind Teacher's Desk	Dependent	x	x
Behind Teacher's Desk	Dependent	Verbal	Finite
Behind Teacher's Desk	Dependent	x	x
Behind Teacher's Desk	Dependent	x	x